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Special Issue: Smart Specialisation, Territorial Innovation and Policy Change

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Editorial

Smart specialisation, territorial innovation and policy change

Territorial Innovation Models and the Emergence of RIS3

Innovation is the most important driver of economic growth and a key domain for public policy (OECD, 2007). The literature on territorial innovation models (TIMs) has expanded underlining different features of the process within the territory (Crevoisier, 2014) but that in general underline the crucial role that agglomeration dynamics and different types of proximity have in the production of knowledge and its transfer to the economic fabric (Boschma, 2005). TIMs such as development poles (Perroux, 1955), industrial districts (Becattini, 1990), clusters (Porter, 1998), *milieux innovateurs* (Aydalot, 1986; Maillat, 1995), learning regions (Florida, 1995; Morgan, 1997), creative cities (Yencken, 1988; Landry, 2000; Howkins, 2001; Florida, 2002), among other models were crucial to underline this relevance and were often translated to policy-making.

One of the TIMs that was more influential for the European Union was the 'Regional Innovation System' (RIS). The concept is based in the systemic approach to innovation dynamics, that provided relevance to the interaction of a series of actors at the national level in order to instigate innovation as a means for growth (Freeman, 1995; Lundvall, 1992). The RIS approach underlines that the 'regional' level is the adequate scale to analyse and to implement policies for innovation, in particular due to the referred agglomeration effects and proximity benefits (Cooke, 2001; Asheim, Smith, & Oughton, 2011). RIS paradigm was very important to several generation of EU policies that tried to stimulate innovation in the regions. To that end, it is important to emphasize that the RIS concept was structuring, for example, the definition of 'regional innovation strategies' (RIS programme 1994-2001), the RITTS - regional innovation and technology transfer strategies (1994-2001), and the European Regional Development Fund Innovative Actions (2000-2006) (Uyarra & Flanagan, 2012). More recently, the RIS was recovered to the spotlight and is a crucial theoretical building block of the RIS3 - Research and Innovation Strategies for Smart Specialisation (Foray et al., 2012).

Smart specialisation defines the virtuous process of diversification by concentrating resources and capacities in a limited number of domains that represent possible paths of transformation of the regional productive structures (Foray, 2016). RIS3 emerge as a renewed place-based paradigm for the strategic development of innovation under the premise of interaction and knowledge of regional capabilities and forces. It suggests an evidence-based process to select regional priority domains, through an entrepreneurial discovery process (EDP), in which regions can be more competitive and show a greater efficiency in access to national and international markets (Marinelli, 2017). These domains are not sectors, clusters or scientific areas but transformational activities that may instigate regional development. They are in the cross-roads of existing and latent capacities of the R&I system and the application of knowledge enabling technologies (KETs) or general purpose technologies (GPTs), and express opportunities that emerge from existing related varieties in the region (Balland, Boschma, Crespo & Rigby, 2017). This means that RIS3 is a mixture of vertical and horizontal policies.

The RIS3 approach differs from previous strategic initiatives. Firstly, it is based in the premise of unique regional configurations suggesting a specific development trajectory that require an adapted policy-mix. This is in line with the considerations that the earlier generations of regional innovation policies were based in an ineffective 'one-size fits all' approach (Tödtling & Trippl, 2005) that emulated successful results and fashionable domains from specific contexts to others with very different capacities. Secondly, RIS3 understands the innovation policy process as participatory and multilevel, with the deepening involvement of various actors in the innovation system governance, often stimulated or anchored in the EDP, in order to bring the strategy closer to the reality of the territory, at its different levels of action, namely business and industrial fabric, governance and knowledge generation actors such as universities and research centres (Grillitsch, 2016). Thirdly, the key to the past success of the concept was that RIS3 has been adopted across the European Union (EU) as a requirement, an *ex-ante* conditionality, for access to innovation financing mechanisms in the context of the European Structural and Investment Funds (ESIF) in 2014-2020 (Kroll, 2015). RIS3 will

be for sure a central aspect of post-2020 EU Cohesion Policy and this is a debate that requires preparation and participation from all relevant key stakeholders. Also in Portugal.

Organisation of the Special Issue

This special issue is an attempt to discuss some relevant issues to 'smart specialisation' rationale. It is a direct result of dedicated call for papers and a special session organized by the PPPJ editors and the guest editor about "Territorial innovation models, smart specialisation and public policies". This session was organized within the 24th APDR - Portuguese Association for Regional Development Annual Congress on "Intellectual Capital and Regional Development: New Landscapes and Challenges for Space Planning" held at the University of Beira Interior, Covilhã in July 2017. The issue includes five original articles that highlight crucial aspects for RIS3.

The first article, prepared by Paulo Neto, Maria Manuel Serrano and Anabela Santos is entitled "Renewed challenges for public policies in post-2020 Cohesion Policy: From RIS3 to RIS4 and a new social dimension for smart specialisation". It is based in a preoccupation that the RIS3 are not promoting enough the cohesion of the territories as they are largely focusing excellence with many destabilisation effects. This preoccupation, to answer societal challenges and social innovation, is something that is already implicit in several RIS3 all over Europe (Nogueira, Pinto and Sampaio, 2017) but still needs to be made more effective. The article pays attention to smart specialisation as the probable main territorial approach in the post-2020 period. The text analyses key policy implications, requirements for an effective governance, the policy dimension of smart specialisation, and the future of 'smart'. The authors suggest that in the post-2020 the development of RIS3 needs an increased consideration to the social dimension, and the consequent transformation of RIS3 into RIS4 - Research, Innovation and Social Strategies for Smart Specialisation.

The second article is focused in another preoccupation of the RIS3. With the application of the concept in EU, many regions worldwide have showed interest and have begun to replicate RIS3-alike strategies. Nevertheless, implementation in less developed regions is not unproblematic (McCann & Ortega-Argilés, 2016). The European Commission was one of the instigators of this policy transfer with projects such as "RIS3 in Latin America" or "RIS3 and beyond" (cf. JRC European Commission S3 Platform website at http://s3platform.jrc.ec.europa.eu/). In the article "Smart specialisation in Africa: Potential for regional development in Cameroon based in tourism-training-innovation resources", Tchakounte Ngassa Ulrich, Hugo Pinto and Carla Nogueira provide an overview of the Cameroon's economy, coupled with a comprehensive look of innovation, training and tourism resources at regional level. This country is an excellent case to reflect how to transfer the RIS3 concept to other parts of the world, namely those in less developed or even in deprivation. The article is based in the calculation of specialisation indices to find territorial patterns at regional level. The authors consider that smart specialisation may be an interesting concept to be implemented in Cameroon and other African regions as a planning tool, but a proper EDP to identify the existing potential of the territories needs to be employed in order to choose priorities and define governance mechanisms.

The following article by Nicola Francesco Dotti, Giulia Lazzeri and Alberto Bramanti, entitled "Smart timing and specialised spaces: Reflections on the implementation of smart specialisation strategies in Milan and Brussels" debates these two cases, underlining how advanced urban areas with different institutional and spatial settings face structural challenges and opportunities to keep high levels of competitiveness. The authors underline both the spatiality and temporality of RIS3 as its implementation requires space to support the scaling-up of innovative activities, coordination among tiers of government involving local, regional, national and European policymakers, and taking into account the spatial economic interdependencies within the territory. Additionally, the timing of the RIS3 implementation, from the initial steps of design to the ex-post evaluation affects a potential mismatch between short-term returns and longer-term perspectives.

The following article is entitled "Empreendendo descoberta inteligente: Uma abordagem aos modelos de implementação da especialização regional em Portugal" (Undertaking smart discovery: An approach to the models of implementation of regional specialisation in Portugal). Antonio Sampaio Ramos and Fernando Rosa, national specialists directly involved in the Portuguese RIS3 process, underline here their vision on the state of the art of the smart specialisation process, confronting conceptual architectures of the different multilevel models of governance adopted by the regions. The text compares the RIS3 operational models of the Centro and Algarve. These regions followed different approaches and their baseline regarding R&I ecosystems and economic fabric is

completely different (Cooke, 2016). The RIS3 implementation in Portugal was itself, in the spirit promoted by the smart specialisation rationale, a challenge of regional innovation and a process of collective experimentation. The full realization of the necessary conditions for an effective participation, requires that the foreseen governance mechanisms are implemented the regions, and that each region finds the ways to guarantee an effective EDP with a strong impact on the improvement and discovery of RIS3 priorities and monitoring.

The final article "Enhancement of innovations through the public programmes: Does it work?" by Oto Potluka Ondřej Dvoulety conducts a counterfactual evaluation of the Operational programme Enterprises and Innovations (OPEI) in the Czech Republic which took place during the period of 2007-2013. This is a crucial technique to assess the impact of a policy measure (Menzies, 2017). The authors have analysed a data sample of 31,604 firms and found positive impacts on profit in the case of supported small and medium-sized firms. They also found a positive effect on employment in medium and large firms assisted by the ERDF.

Final Remarks

'Smart specialsation' faces a variety of challenges for its adequate transfer, design and implementation as a policy. A satisfactory RIS3 goes beyond many stylized facts on innovation regional policies: beyond benchmarking and best-practice emulation, beyond technologist visions of development anchored in the promotion of R&I, beyond the promotion of high growth sectors just because they are fashionable, beyond a strict vision of product innovation encompassing the social aspects of the phenomena, beyond scientific priorities that are transferable to market and understand social sciences and humanities as a minor contribution, beyond a simple *ex-ante* criteria to assess ESIF. Only overcoming these limitations RIS3 can achieve its ambitions of becoming meaningful structural change agendas for the regions that develop them. Hopefully this special issue of PPPJ can contribute to the debate about smart specialisation in Portugal for the post-2020. It is crucial as this discussion is inexistent or at best still immature and lacking analytical depth and more open examination.

Évora, June 2018

Hugo Pinto
Paulo Neto
Maria Manuel Serrano

References

Asheim, B. T., Smith, H. L., & Oughton, C. (2011). Regional Innovation Systems: Theory, Empirics and Policy. Regional Studies, 45(7), 875–891.

Aydalot, P. (1986) (dir.). Trajectoires technologiques et milieux innovateurs. In Milieux innovateurs en Europe. Paris: GREMI, pp. 347-361.

Balland, P., Boschma, R., Crespo, J., & Rigby, D. L. (2017). Smart Specialization policy in the EU: Knowledge Complexity and Regional Diversification. Papers in Evolutionary Economic Geography, 17(17).

Becattini, G. (1990), "The Marshallian Industrial District as a Socio-Economic Concept", in: Pyke, F., Becattini, G. and Sengenberger, W. (eds), Industrial Districts and Inter-firm Cooperation in Italy, Geneva, IILS.

Boschma, R. (2005). Proximity and Innovation: A Critical Assessment. Regional Studies, 39(1), 61–74.

Cooke, P. (2001). From Technopoles to Regional Innovation Systems: The Evolution of Localised Technology Development Policy. Canadian Journal of Regional Science/Revue Canadienne Des Sciences Régionales, XXIV(1), 21–40.

Cooke, P. (2016). Four minutes to four years: the advantage of recombinant over specialized innovation – RIS3 versus 'smartspec''.' European Planning Studies, 24(8), 1494–1510.

Crevoisier, O. (2014). Beyond Territorial Innovation Models: The Pertinence of the Territorial Approach. Regional Studies, 48(3), pp. 551-561.

Florida, R. (1995). Toward the learning region. Futures, 27(5), 527–536.

Florida, R. (2002). The rise of the creative class—and how it is transforming leisure, community and everyday life. New York: Basic Books.

Foray, D. (2016). On the policy space of smart specialization strategies. European Planning Studies, 24(8), 1428–1437. http://doi.org/10.1080/09654313.2016.1176126.

Foray, D., Goddard, J., Beldarrain, X. G., Landabaso, M., McCann, P., Morgan, K., … Ortega-Argilés, R. (2012). Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3).

Freeman, C. (1995). The 'National System of Innovation' in historical perspective. Cambridge Journal of Economics, 19(March 1993), 5–24.

Grillitsch, M. (2016). Institutions, smart specialisation dynamics and policy. Environment and Planning C: Government and Policy, 34(1), 22–37.

Howkins, J. (2001). The Creative Economy: How people make money from ideas. London: Penguin.

Kroll, H. (2015). Efforts to Implement Smart Specialization in Practice—Leading Unlike Horses to the Water. European Planning Studies, 23(10), 2079–2098.

Landry, C. (2000). The Creative City: A toolkit for urban innovators, London: Earthscan.

Lundvall, B. (1992). National Systems of Innovation: Towards a Theory of Innovation and Interactive learning. London: Pinter Publishers.

Maillat, D. (1995). Milieux innovateurs et dynamiques territoriale. In: Rallet, A.; Torre, A. (Ed.). Économie industrielle et économie spatiale. Paris: Econômica. p. 211-231.

Marinelli, E. (2017). Smart Specialisation at work: The entrepreneurial discovery as a continuous process, S3 Working Paper Series.

McCann, P., & Ortega-Argilés, R. (2016). Smart Specialisation: Insights from the EU Experience and Implications for Other Economies. Journal of Regional Research - Investigaciones Regionales, 36, 279–293.

Menzies, P. (2017). "Counterfactual Theories of Causation", In: Edward N. Zalta (ed.), The Stanford Encyclopedia of Philosophy (Winter 2017 Edition), available at: <https://plato.stanford.edu/archives/win2017/entries/causation-counterfactual/>.

Morgan, K. (1997). The Learning Region: Institutions, Innovation and Regional Renewal, Regional Studies, 31(5), pp. 491-503.

Nogueira, C.; Pinto, H & Sampaio, F. (2017) Social Innovation and Smart Specialisation: Opportunities for Atlantic Regions, European Public & Social Innovation Review (EPSIR), Vol. 2 (2).

OECD. (2007). Innovation and Growth. OECD Publications: Paris.

Perroux, F. (1955). A Note on the Notion of Growth Pole. Economie Appliquee, 8, pp. 307–320.

Porter, M. E. (1998). Clusters and the new economics of competition, Harvard Business Review, 76(6).

Tödtling, F., & Trippl, M. (2005). One size fits all? Research Policy, 34(8), 1203–1219.

Uyarra, E., & Flanagan, K. (2012). Reframing regional innovation systems: evolution, complexity and public policy. In P. Cooke (Ed.), Re-framing Regional Development, pp. 146–163.

Yencken, D. (1988). The creative city, Meanjin. 47.

Renewed challenges for public policies in post-2020 Cohesion Policy: From RIS3 to RIS4 and a new social dimension for smart specialisation[1]

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ABSTRACT

In this set of new public policy instruments of the European Union (EU) Cohesion Policy 2014-2020, regional smart specialisation strategies (RIS3) were one of its most important 'flagships'. Given the broad consensus that seems to exist in European institutions as regards the need to continue developing this approach in the EU in the post-2020 period, the main aims of this article are: (i) to analyze the new possible evolutions for strengthening RIS3's strategic rationale of implementation; (ii) to debate the new challenges for public policy resulting from the new orientations and strategic priorities of the EU Cohesion Policy 2021-2027; (iii) to present a proposal for the evolution of RIS3 to another stage of evolution in the post-2020 period through incorporation of a new social dimension which we call RIS4 - Research, Innovation and Social Strategies for Smart Specialisation.

In order to achieve this objective, in addition to the Introduction and Final remarks, the article contains the following main sections: (i) Background theory, where we analyse how the transition from the place-based approach to the smart specialisation rationale allows effective conditions for better operationalization of the first type of approach; (ii) Post-2020 Cohesion Policy and the new challenges for public policy, where we present and discuss a number of key challenges which we believe should be at the centre of the debate on the future of Cohesion Policy. The choices the EU will make on each of these key challenges will determine very different solutions for the future Cohesion Policy. In this section we also debate in detail aspects such as the post-2020 cohesion policy in the framework of the EU's economic governance, the review of place-based approaches, reformulation of the mechanisms for territorialisation of public policy and the strategic priorities of the post-2020 Cohesion Policy;(iii) Smart specialisation and territorial approach post-2020, where we analyse policy implications, new requirements for governance and the increasing policy dimension of smart specialisation, and finally(iv) The European future of 'smart'. From RIS3 to RIS4, we propose the development of a new stage for smart specialization in post-2020 cohesion policy, based on the increased social dimension of the RIS3.

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[1] The present article follows on from the Conference entitled *Post-2020 Cohesion Policy and the New Challenges for Public Policy*, given by Paulo Neto as the keynote speaker at the Official Dinner of the International Seminar on Social Services of General Interest and Territorial Cohesion: Experiences and Challenges, organized by the Portuguese Agency for Development and Cohesion (AD&C) I.P., Évora Hotel, November 13, 2017 in Évora, Portugal.

1. INTRODUCTION

Smart specialisation strategies (S3) are one of the public policy instruments created under Cohesion Policy 2014-2020 which are particularly successful in several Member States and their expansion and greater profitability is relevant in the post-2020 period.

"Smart specialization is opening up new opportunities for interregional cooperation around shared priorities, thereby complementing the strengths of all parties and redefining the European model of growth and integration" (Creţu[2], 2017: 26), and S3 as public policy instruments have the potential to support coordination (horizontal and vertical) between levels of public administration and between public policies.

The European Commission's Report *Strengthening Innovation in Europe's Regions: Strategies for resilient, inclusive and sustainable growth*[3]; the conclusions of the European Council on *Results and new Elements of Cohesion Policy and the European Structural and Investment Funds*[4]; the European Parliament *Resolution on Cohesion Policy and Research and Innovation Strategies for Smart Specialization (RIS3)*[5] and the *Opinion of the European Committee of the Regions – Smart Specialisation Strategies (RIS3): impact for regions and inter-regional cooperation*[6], are examples of documents which demonstrate the alignment between European institutions concerning the need to continue developing this approach.

Bachtler, Mendez and Wishlade (2018) in *Reshaping the EU budget and Cohesion Policy: carrying on, doing less or radical redesign?* advocate a Cohesion Policy based on a stronger commitment to the RIS3, associating them with new aspects related to the adequacy of infrastructure, the qualification of human resources or the quality of institutions and their decision-making process.

But it is necessary to go even further. The new generation of RIS3 should incorporate a genuine social dimension in order to add an agenda of this nature to the existing economic, territorial and innovation agendas.

The way in which some citizens appear to be disassociating themselves with, or calling into question, the European project clearly demonstrates both the need to strengthen the social dimension of the EU and the need to strengthen the ability to make its relevance in the daily lives of Europeans more perceptible.

Given the broad consensus that seems to exist in European institutions as regards the need to continue developing this approach in the EU in the post-2020 period, the main aims of this article are: (i) to analyze possible new developments to strengthen RIS3's strategic rationale of implementation; (ii) to debate the new challenges for public policy resulting from the new orientations and strategic priorities of the EU Cohesion Policy 2021-2027; (iii) to present a proposal for the evolution of RIS3 to another stage of development in the post-2020 period through the incorporation of a new social dimension which we call RIS4 - Research, Innovation and Social Strategies for Smart Specialisation.

In order to achieve this objective, in addition to the Introduction and the Final remarks, the article contains the following main sections: (i) Background theory, where we analyse how the transition from the place-based approach to the smart specialisation rationale allows effective conditions for better operationalization of the first type of approach; (ii) Post-2020 Cohesion Policy and the new challenges for public policy, where we present and discuss a number of key challenges which we believe should be at the centre of the debate on the future of the Cohesion Policy. The choices the EU will make on each of these key challenges will determine very different solutions for the future Cohesion Policy. In this section we also debate in detail aspects such as the post-2020 cohesion policy in the framework of the EU's economic governance, the review of place-based approaches,

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[2] European Commissioner for Regional Policy.
[3] COM (2017) 376 final.
[4] Council of the European Union.
[5] European Parlment, Resolution 2015/2278(INI).
[6] Oficial Journal of the European Union, C272, volume 60, 17.08.2017.

reformulation of the mechanisms for territorialisation of public policy and the strategic priorities of the post-2020 Cohesion Policy; (iii) Smart specialisation and territorial approach post-2020, where we analyse policy implications, new requirements for governance and the increasing policy dimension of smart specialization, and finally (iv) The European future of 'smart'. From RIS3 to RIS4, we propose the development of a new stage for smart specialisation in the post-2020 cohesion policy, based on the increase in the social dimension of the RIS3.

2. BACKGROUND THEORY

2.1 The place-based approach

In 2009, the Barca Report defined the rationale for action for the EU's Cohesion Policy 2014-2020 and the place-based approach, which is one of its key foundations. In *An Agenda for a Reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations*, Barca argues that "A place-based policy is a long-term strategy aimed at tackling persistent underutilisation of potential and reducing persistent social exclusion in specific places through external interventions and multilevel governance. It promotes the supply of integrated goods and services tailored to contexts, and it triggers institutional changes. In a place-based policy, public interventions rely on local knowledge and are verifiable and submitted to scrutiny, while linkages among places are taken into account" (Barca, 2009: vii).

Moreover Barca argues that "this strategy is superior to alternative strategies that do not make explicit and accountable their territorial focus, or even hide it behind a screen of self-proclaimed space-blindness, fail to integrate services, and either assume that the State knows best or rely on the choices and guidance of a few private actors" (Barca, 2009: vii).

In addition to the place-based approach, the Barca Report proposed a set of ten pillars on which the Cohesion Policy 2014-2020 should be based, namely: (i) An innovative concentration on core priorities and a conservative territorial allocation; (ii) A new strategic framework for cohesion policy; (iii) A new contractual relationship, implementation and reporting aimed at results; (iv) A strengthened governance for the core priorities; (v) Promoting additional, innovative and flexible spending; (vi) Promoting experimentalism and mobilising local actors; (vii) Promoting the learning process: a move towards prospective impact evaluation; (viii) Refocusing and strengthening the role of the Commission as a centre of competence; (ix) Addressing financial management and control, and (x) Reinforcing the high-level political system of checks and balances.

Besides the Barca Report, other core documents for the preparation of the EU funding and programming period 2014-2020 were decisive. Among these, the following stand out: (i) *Green Paper on Territorial Cohesion.Turning territorial diversity into strength* (2008)[7]; (ii) *Regions 2020. An Assessment of Future Challenges for EU Regions* (2008)[8]; (iii) *A Digital Agenda for Europe* (2010)[9]; (iv) *Territorial Agenda of the European Union 2020. Towards an Inclusive, Smart and Sustainable Europe of Diverse Regions* (2011)[10]; (v) *Horizon 2020 - The Framework Programme for Research and Innovation*(2011)[11], and of course (vi) *Europe 2020. A strategy for smart, sustainable and inclusive growth*(2010)[12].

The Europe 2020 Strategy proposed "three mutually reinforcing priorities: (i) Smart growth: developing an economy based on knowledge and innovation. (ii) Sustainable growth: promoting a more resource efficient, greener and more competitive economy. (iii) Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion" (European Commission, 2010: 3).

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[7] COM(2008) 616 final.

[8] SEC(2008), 10.2008.

[9] COM(2010) 245 final/2.

[10] Agreed at the Informal Ministerial Meeting of Ministers responsible for Spatial Planning and Territorial Development on 19th May 2011 Gödöllő, Hungary.

[11] COM(2011) 808 final. Adoption by the European Council (November/December 2013).

[12] COM (2010) 2020.

2.2. Smart specialisation

In order to ensure the effective conditions of operation for the placed-based approach, the new programming period concentrated on a significant set of instruments aimed at ensuring results in terms of the territorialisation of public policies, namely: (i) Community-led local development (CLLD)[13] and(ii) Integrated territorial investment (ITI)[14]. In this set of new instruments, national and the regional smart specialisation strategies (RIS3) formed the 'flagship' public policy instrument for Cohesion Policy 2014-2020.

The smart specialisation strategy (S3) concept was developed by the EU's high-level expert group *Knowledge for Growth*, in 2005-2009, "closely related to the concept of clusters [and] during the reform of cohesion policy for the period 2014-2020, the concept was extended in order to encourage regional economic transformation. It was also incorporated into EU regional policy as a key principle of investment in R&I" (European Commission, 2017: 11-12).

Precisely in this sense, Foray et al (2012: 7) defend that "investing more in research, innovation and entrepreneurship is at the heart of Europe 2020 and a crucial part of Europe's response to the economic crisis. So is having a strategic and integrated approach to innovation that maximises European, national and regional research and innovation potential". Thus, "smart specialisation has a strategic and central function within the new Cohesion Policy being a key vehicle for ensuring Cohesion Policy's contribution to the Europe 2020 jobs and growth agenda."(Foray et al, 2012: 9).

According to the same authors"(...) RIS3 approach is relevant to all three priorities of Europe 2020 i.e. smart, sustainable and inclusive growth". The relevance of RIS3 is justified by Foray et al, 2012 in this way: it is smart because "smart specialisation matters for the future of Europe because the development of an economy based on knowledge and innovation remains a fundamental challenge for the EU as a whole"; (...) it is sustainable because "smart specialisation is relevant to achieve sustainable growth, as an important innovation effort and considerable investment is required to shift towards a resource-efficient and low carbon economy, offering opportunities in domestic and global markets" (...) and finally it contemplates inclusive growth, because "smart specialisation contributes to inclusive growth between and within regions by strengthening territorial cohesion and by managing structural change, creating economic opportunity and investing in skills development, better jobs and social innovation." (Foray et al, 2012: 8).

Crescenzi and Iammarino (2017: 98) verify that "the recent literature on regional economic development has reached a consensus on the idea that spatial proximity, density and localized processes should be placed in the wider context of economic globalization by accounting for other forms of proximity between local and non-local agents".

In fact, the smart specialisation strategy "has been proposed as a possible approach to tacking these challenges and although the original ideas underpinning smart specialisation initially emerged from non-spatial ways of thinking it became increasingly apparent that they dovetailed neatly with various ideas emerging from other fields including economic geography, science policy, and development studies" (McCann and Ortega-Argilés, 2016: 280). In the opinion of Boschma (2017), smart specialisation is a pivotal concept for accelerated economic growth. This concept has both an economic and spatial meaning and this condition leads us to the question: *what* is the economic focus of growth initiatives and *where* should this growth take place?

According to Nijkamp (2016: 194), "regional development is an integrated initiative to exploit the benefits of a smart spatial-economic specialization. Smart regional specialization seeks to combine the economic benefits of comparative advantages with the place-specific benefits of agglomeration advantages".

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[13] Regulation (EU) no. 1303/2013 of The European Parliament and of The Council (17.12. 2013), Chapter II – Community-led local development, Articles 32 to 35, "...Community-led local development shall be supported by the EAFRD, which shall be designated as LEADER local development and may be supported by the ERDF, ESF or EMFF."

[14] Regulation (EU) no. 1303/2013 of The European Parliament and of The Council (17.12. 2013), Chapter III – Territorial Development, Articles 36, "...Where an urban development strategy or other territorial strategy, or a territorial pact referred to in Article 12(1) of the ESF Regulation, requires an integrated approach involving investments from the ESF, ERDF or Cohesion Fund under more than one priority axis of one or more operational programmes, actions may be carried out as an integrated territorial investment (an 'ITI')."

2.3. The territorialisation of public policies

McCann and Ortega-Argilés think that "the question of how to best design and implement development policies which are most appropriate for fostering good growth in the local setting" is "the central issue which is always present in every local, regional or national context". Even in a "heterogeneous context as the EU regional system there is unlikely to be any particular «one-size-fits-all» approach which is ideally suited to every regional context" (McCann and Ortega-Argilés, 2016: 281).

In the same line of thought, Rodrik (2007) argues that finding ways to best tailor policy actions and interventions to the heterogeneous local contexts is generally regarded as being the most important issue for policy design and delivery.

The potential conflict, given the heterogeneous nature of the contexts and their priorities, is not forgotten. So, "in order to reconcile the potentially conflicting pressures between local tailoring and consistency with the overall policy logic and architecture the EU has adopted the smart specialization approach to policy prioritisation as one of its key conditionalities or non-negotiable elements in the policy agenda" (McCann and Ortega-Argilés, 2016: 281). In short, "the smart specialisation approach offers a policy-prioritisation framework for thinking about resource allocation issues logic and a way forward for regions making policy choices in difficult and challenging budgetary environments" (McCann and Ortega-Argilés, 2016: 281-282).

Still according to McCann and Ortega-Argilés, the economic advantages of the smart specialisation approach are evident because "smart specialisation puts an economic discipline on the policy prioritisation process, the intention of which is to help countries and regions make the most realistic choices regarding policy interventions and actions which are amenable and appropriate for the local context (…). The smart specialisation approach to economic development also emphasised that any successful entrepreneurial activities will need to develop and build on scale in order to generate sufficiently large impacts that help to transform the system" (McCann and Ortega-Argilés, 2016: 282-283).

The role of the smart specialisation concept in driving the innovation process is recognized by Gianelle et al (2016). These authors say that "through its adoption and adaptation towards regional development, the smart specialisation concept has become a powerful instrument for place-based innovation-driven growth. Furthermore, evidence arising from regions and ongoing informal policy discussions signals that the smart specialisation approach may be evolving towards a methodology that goes beyond its application to the EU regional policy. In fact, smart specialisation is gaining interest in both scientific and policy-making communities linked for instance to urban and local development, and is also bridging the gap towards more thematic policy approaches such as industrial and energy policies" (Gianelle et al, 2016: 10).

The evidence that smart specialisation is attracting the attention of several areas of interest was recently confirmed by the European Commissioner for Regional Policy. She said that smart specialisation "has become a key instrument for place-based development. It now represents the most comprehensive policy experience on implementing innovation-driven progress in Europe. It is a cornerstone in the European Union's endeavour to continue driving countries and regions from recent setbacks onwards to success, and to guarantee opportunities for each and all of its territories" (Creţu in Gianelle et al, 2016: 9).

3. Post-2020 Cohesion Policy And The New Challenges For Public Policy

For the next long-term EU budget 2021-2027, the European Commission proposes to "modernise Cohesion Policy, the EU's main investment policy and one of its most concrete expressions of solidarity."[15] For this period, European Commission proposes indeed "a more tailored[16] approach to

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[15] European Commission - Press release, Strasbourg, 29 May 2018.

[16] The European Commission proposal for post-2020 Cohesion Policy keeps 3 categories of regions: less-developed, transition and more developed regions. To reduce disparities and help low-income and low-growth regions catch up, GDP per capita remains the predominant criterion for allocating funds. In addition, new criteria aim at better reflecting the reality on the ground – youth unemployment, low education level, climate change and the reception and integration of migrants.

regional development" focused on investing in all regions, locally-led[17]and with fewer, clearer, shorter rules and a more flexible framework[18].

Even so, as the EU is starting to debate the post-2020 Cohesion Policy, there are still many uncertainties, and among them we can highlight the following: (i) The future model for financing the European Union's budget, and the Structural and Investment Funds, in support of the definition and implementation of the Cohesion Policy[19]; (ii) The future implications of application of the European added value concept in defining the new generation of EU Cohesion Policy, as well as the objective of achieving a gradual shift from local to EU objectives[20]; (iii) The role and future relevance of the post-2020 Cohesion Policy to Mega-Regions and to cross-border and transnational territorial cooperation[21]; (iv) Brexit's impact on future budgetary availability for Structural and Investment Funds; (v) The impact of Brexit on the average value of GDP per capita in European regions and on the re-definition of the limits of the types of regions within the Cohesion Policy; (vi) The impact of Brexit on changing the relative position, and the conditions of eligibility of European regions; (vii) Post-2020 Cohesion Policy and the future choices of the EU on the territorialisation of public policies; (viii) The debate on whether post-2020 Cohesion Policy will maintain, or deepen, the current place-based orientation; (ix) The possibility of realizing and being able to take advantage, in the post-2020 period, of other territorial, sectoral and thematic configurations for the design and implementation of territorial instruments such as Integrated Territorial Investments (ITI); (x) The debate on how each Member State could increase the conditions for the projects supported there to generate higher levels in terms of European added value[22], or national added value or regional added value, and (xi) Improving ways of measuring and accounting for the impact of EU expenditure and financing on the level of economic growth in the Member States[23].

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[17] The European Commission proposal goes in the sense that the 2021-2027 Cohesion Policy stands for a Europe that empowers, by supporting locally-led development strategies. Local, urban and territorial authorities will be more involved in the management of EU funds, while increased co-financing rates will improve ownership of EU-funded projects in regions and cities.

[18] Concerning a more flexible framework, the European Commission proposes: (i) Simplifying access to funds – The Commission proposes to make the rules less complex in the next long-term EU budget, with less red tape and lighter control procedures for businesses and entrepreneurs benefiting from EU support; (ii) A single rulebook – One set of rules now cover seven EU funds implemented in partnership with Member States ('shared management'), which will make life easier for EU funds programme managers. It will also facilitate synergies, for example between Cohesion Policy funds and the Asylum and Migration Fund when it comes to the development of local integration strategies for migrants. The framework also allows for more efficient links with other funds from the EU budget toolbox; for example Member States can choose to transfer some of their Cohesion Policy resources to the InvestEU programme; (iii) Adapting to needs – The new framework also combines the stability necessary for long-term investment planning with the right level of flexibility in order to cope with unforeseen events. A mid-term review will determine if changes in the programmes are needed for the last 2 years of the funding period, and limited transfers of resources within EU funds programmes will be possible.

[19] See: (i) the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, A Modern Budget for a Union that Protects, Empowers and Defends The Multiannual Financial Framework for 2021-2027, COM(2018) 321 final;(ii) the Proposal for a Regulation of The European Parliament and of The Council on the establishment of the Reform Support Programme, COM(2018) 391 final; (iii) the Proposal for a Regulation of The European Parliament and of The Council laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, and the European Maritime and Fisheries Fund and financial rules for those and for the Asylum and Migration Fund, the Internal Security Fund and the Border Management and Visa Instrument, COM(2018) 375 final; (iv) the Proposal for a Regulation of The European Parliament and of The Council on the European Regional Development Fund and on the Cohesion Fund, COM(2018) 372 final.

[20] As advocated by the European Union High Level Group on Own Resources (2016).

[21] See: (i) Executive Summary of the Impact Assessment Accompanying the document Proposals for a Regulation of The European Parliament and of the Council on the European Regional Development Fund and on the Cohesion Fund on a mechanism to resolve legal and administrative obstacles in a cross-border context on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments, SWD(2018) 283 final; and (ii) Proposal for a Regulation of The European Parliament and of The Council on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments, COM(2018) 374 final.

[22] The added value also depends on Member States' decisions to actually make use of potential cost savings (EU High Level Group on Own Resources, 2016).

[23] According to the European Union High Level Group on Own Resources (2016) European Union expenditure provides additional growth in all Member States, while this effect is not visible in the accounting calculation of net balances.

However, among the set of uncertainties and challenges currently facing public policies, depending on what will become the final model of the post-2020 Cohesion Policy, the following should be highlighted: (i) The post-2020 Cohesion Policy in the framework of the EU's economic governance; (ii) The review of the place-based approaches and the reformulation of mechanisms for the territorialisation of public policies; (iii) Multi-governance in the post-2020 period and its reconciliation with the objectives of flexibility and simplified procedures and administration; (iv)The strategic priorities of the post-2020 Cohesion Policy and the exercise of consensus on the European added value objective; and of course (v) The future of the RIS3 approach. These major challenges will be discussed in more detail below.

3.1. The post-2020 Cohesion Policy in the framework of the European Union's economic governance

One of the key challenges for the Cohesion Policy after 2020 is the debate about what this policy should be in the future. On the one hand, there are those who argue that the Cohesion Policy should refocus on its initial objective of combating regional disparities and therefore advocate that it should be applied again not in all European regions but only in the most disadvantaged ones. On the other hand, others argue that the Cohesion Policy should continue on its way to broaden its intervention framework, the scope of its objectives and the intensification of its activity in order to assume more and more the role of the main economic policy of the Union.

Concerning the Cohesion Policy's future and according to Zypries, "the most important objective is to reduce the backwardness of seriously disadvantaged regions" (Zypries, 2017: 8). But there is no consensus on what the Cohesion Policy should be in the near future. Some voices consider it would also be important to make the Cohesion Policy more profitable as one of the Union's main policies, with the aim of ensuring greater economic and societal dimension and relevance. For example, Marcegaglia asks "should Cohesion Policy be an integral part of a European research strategy with a strong territorial approach" or should it be more than that? (Marcegaglia, 2017: 29).

For Huguenot-Noël and Hunter, a first key challenge for "the post-2020 Cohesion Policy [is the need of] a growing focus on cross-sectoral and trans-policy approaches to the definition and design of public policies and strategies to support localized development processes. In order to increase its credibility and purpose, the economic, social and territorial objectives of the policy must be repositioned at the heart of the EU project" (Huguenot-Noël and Hunter, 2017: 37).

A second key challenge is related with the future framework of the EU's economic governance. In particular, the relation of the post-2020 Cohesion Policy with the Union's new strategic priorities, in the fields of globalization, demography, migration, environment, climate change, security and defense, employment and digitalization of the economy and society. First of all, many of these new Cohesion Policy priorities will introduce new uncertainties and will generate new budgetary needs for the implementation of this policy, but also because those priorities will compete, in budgetary terms, with the priorities of a more 'regional' nature.

For Bachtler and Begg, "notwithstanding the importance of the (…) regional development challenges, resources may be switched to increase funding for other internal EU policies (such as research, SME development, environment, transport, border security) as well as more support for 'external actions', including financing development aid to reduce the flow of migrants from outside the EU" (Bachtler and Begg, 2018: 152).

A third key challenge results from the growing concern of a strengthened link between the Cohesion Policy and the European Semester. The European Commission proposes to strengthen the link between the Cohesion Policy and the European Semester, in order to create a growth and business-friendly environment in Europe, so that both EU and national investments can deliver their full potential and a stronger complementarity and coordination. As advised by Oettinger, "the link between the Cohesion Policy and the general economic governance agenda should be strengthened in the next financial framework" (Oettinger, 2017: 10). One of the main arguments put forward in this regard is that "some EU policies with the highest added value coincide with the areas at the core of Member-states' sovereignty" (EU High Level Group on Own Resources, 2016: 28).

A fourth key challenge for the future of the EU Cohesion Policy is about the objective of "simplifying access to funds". According to Barca, "when discussing the future of cohesion policy, we must thus resist the temptation to jump ahead to the ever-alive issues of 'simplification', 'proportionality', 'flexibility'. Of course, they matter. But they can be addressed only by asking us more basic

questions: Is cohesion policy suitable for the challenges facing the Union now and in the next decade" Barca (2017: 2). The author also argues that "the five Funds through which cohesion policy is run should become part of a single Cohesion Policy Fund, entrusted, within the Commission, to a unified Directorate" (Barca, 2017: 8).

A fifth key challenge is related with the relevance and role of conditionalities in the functioning and operationalization of the post-2020 Cohesion Policy. For the period after 2020, one of the issues under discussion in this aspect is whether the public policy instrument ex-ante conditionalities should be used as a mechanism to densify the Cohesion Policy, or should it also be used in the sense of broadening the economic and societal extent of this policy's performance?

3.2. Review of place-based approaches and reformulation of the mechanisms for the territorialisation of public policies

The fact that regional economic divergence is now viewed as threatening economic progress, social cohesion and political stability in Europe (Iammarino, Rodriguez Pose and Storper, 2017) leads to considering a sixth key challenge. Recognizing this fact is causing the Union to seek to reinforce the impacts and results of its policies at the local and regional level. The Union will seek to strengthen the territorialisation of its policies and effects, and social issues will foreseeably gain new relevance in the post-2020 period.

A seventh key challenge depends on the future options on the rationalization and revision of geographical and thematic objectives (EoRPA, 2017), and geographic scales and models of action, for the Cohesion Policy post-2020. In particular, concerning the future of the current instruments (ITI, RIS3 and CLLD) and how they will support the territorialisation of public policies and the implementation of integrated territorial approaches. Could the RIS3 be understood, in the post-2020 period, as instruments for rationalizing and aggregating other spatially more circumscribed integrated territorial approaches, such as ITI and CLLD?

An eighth key challenge relates to what the desired evolution will be and the nature of the process of territorialisation of public policies. "Place-based strategies and policies should aim to promote diversification of economic activities. Considering that territories with geographical specificities are usually characterised by a low level of economic diversification, strategies and policies should promote multi-activity through smart solutions and preservation of small-scale activities. Challenges linked to specific types of territories have, in some cases, been successfully overcome through smart specialisation strategies capitalising on their unique resources, developing and branding high-added-value niche-products (e.g. aquaculture specialised in seed mussels)" (ESPON, 2018: 9).

Reinforcing this conclusion, Bachtler and Begg defend that "the territorial dimension is increasingly moving centre-stage in debates about the future of economic development in the EU (...). The enduring debates on "efficiency versus equity," often translated into people-based versus place-based (Barca, 2009; World Bank, 2009), can be regarded as a false dichotomy" (Bachtler and Begg, 2018: 157).

But taking into account the new strategic priorities for the Cohesion Policy 2021-2027 that are under discussion - globalization, demography, migration, environment, climate change, security and defence, employment and digitalization of the economy and society - some of these strategic priorities raise important new challenges as regards the feasibility of their territorialisation conditions. Also in this respect, the RIS3 approach has a great potential to operationalize, in regional and urban terms, these new, relatively less 'territorial' priorities.

Mihaylova (2017) has introduced another issue that could constitute a ninth challenge. A challenge associated with the Cohesion Policy's future approach to territorial cooperation. "European territorial cooperation(...)has proved its effectiveness and added value for EU objectives, contributing to the strengthening of territorial cohesion and should therefore be an important post-2020 instrument" (Mihaylova, 2017: 21). And in turn, the European Commissioner Corina Creţu acknowledges that "smart specialisation is opening up new opportunities for interregional cooperation around shared priorities, thereby complementing the strengths of all parties and redefining the European model of growth and integration" (Creţu, 2017: 26).

The future role of Mega-Regions in the context of the post-2020 Cohesion Policy and the understanding of their potential contribution, including as a tool for public policy for the realization

of the European added value objective, is also a very important key issue and sets the tenth key challenge.

A eleventh key challenge for the Cohesion Policy post-2020 is connected with the role of EU Macro-Regional Strategies in the future implentention of S3 and RIS3[24]. In the current programming period, many operational programmes in the field of cross-border cooperation and interregional co-operation have already adopted an S3 rationale with regard to their strategic orientations and assessment of the projects submitted. This is another area of RIS3 application with an important potential in the future.

3.3. Multi-level governance in the post-2020 period and its reconciliation with the objectives of flexibility and procedural and administrative simplification

A twelfth key challenge appears in the Special Report no. 02/2017 entitled *Negotiations by the Commission of the European Court of Auditors' Cohesion Policy and Partnership Agreements for 2014-2020*. In this document it is argued that "an unnecessarily high and performance measurement is not harmonized between the funds. The Court makes a number of recommendations to the Commission and the Member States to improve the functioning of the [Partnership] Agreements"(European Court of Auditors, 2017: 10). The implications of the simplification and flexibilization objectives for the scope of territorially-based public policy instruments, multilevel governance solutions, the territorialisation of public policies and for strategic priorities, is a twelfth key challenge.

According to Morgan "the public sector nowadays receives contradictory signals: cohesion policy rhetoric invites it to be more agile, creative and experimental, while the audit culture does not tolerate flaws and enters creation into the name of conformity" (Morgan, 2017: 30). And for this very reason,"simplification of the regulatory framework and harmonization of rules across the ESI Funds and potentially other instruments have been extensively discussed, but the challenge will be simplified and perhaps differentiate while ensuring that the (painfully won) progress with reducing the error rate is not reversed"(EoRPA, 2017: 1).

The European Court of Auditors (2018) in the Report *Simplification in post-2020 delivery of Cohesion Policy* identified five key areas to simplify the Cohesion Policy, namely: (i) EU legislation and guidance; (ii) Operational Programmes' (OPs) management structure; (iii) Administrative inefficiencies in the selection and implementation of projects in Cohesion (including gold-plating); (iv) Use of Simplified Cost Options (SCOs) and other types of measures based on conditions and (v) More efficient and effective controls.

The debate about the need for greater simplification in programming and simplification of the policy itself is a thirteenth key challenge. "For post-2020, we need a radical reduction in cohesion legislation and guidance. We need to keep elements that make this policy unique, like ex-ante conditionalities, but without falling into micromanagement" (Creţu, 2017: 27).

A fourteenth key challenge is related with the future of the multilevel governance approach. "Cohesion Policy has developed its own, unique system of multilevel governance, which has become a tangible and acknowledged landmark for the whole policy (Bachtler, Oliveira Martins, Wostner and Zuber, 2017: 45), but "the results of Cohesion Policy depend on factors that can only be partially tackled inside Cohesion Policy (European Commission, 2017) and "the current system of EU economic governance is only partially able to assist in creating the proper conditions for effective Cohesion Policy delivery" (Bachtler et al, 2017: 47).

A crucial aspect of the European Union's future options for multilevel governance is the way the EU should seek to rationalize and simplify the instruments and approaches for territorialisation of Cohesion in the period 2021-2027, as well as to increase their articulation and systemic performance.

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[24] See *S3 cooperation in the frame of the EU Macro-Regional Strategies*, http://s3platform.jrc.ec.europa.eu/eu-macro-regional-strategies

3.4. The strategic priorities of the post-2020 Cohesion Policy and consensus on the objective of European added value

According to the EU High Level Group on Own Resources (2016), the EU policies with the highest European added value are currently the most modest in budgetary terms. In this sense, the future implications of applying the concept and the European added value objective in defining the new generation of the European Union's Cohesion Policy, as well as the objective of achieving a 'gradual shift from local to European Union objectives' is the fifteenth key challenge for future Cohesion Policy.

For Monti "cross-border benefits, side effects or leverage effects are currently ignored or hidden in budget negotiations but provide a measure of European added value. This has to change to make the budget more transparent, accountable and equitable" (Monti, 2017: 33). That is why the debate on how each Member State could increase the necessary conditions so that the projects supported therein can generate higher levels in terms of European added value, national added value and regional added value, is very important with major implications.

The option of prioritizing achievement of the European added value objective by defining new ex ante constraints, including, e.g. a structural reform conditionality (Bachtler and Begg, 2018) and by defining and implementing specific strategic objectives are some of the aspects currently under discussion, and may constitute a sixteenth key challenge.

4. Smart Specialisation And Territorial Approach In Post-2020

The European Parliament Report - *Building Blocks for a Post-2020 EU Cohesion Policy* - defends that "the smart specialisation model should become one of the leading approaches of post-2020 cohesion policy by encouraging cooperation between different regions, urban and rural areas and bolstering the economic development of the EU, creating synergies between transnational RIS3 and world-class clusters; recalls the existing Stairway to Excellence (S2E) pilot project, which continues to support regions in the development and exploitation of synergies between the ESIF, Horizon 2020 and other EU funding programmes; consequently takes the view that further efforts must be made to maximise synergies in order to further strengthen smart specialisation and innovation post-2020" (European Parliament, 2017: 12)[25]. For this reason, the future of smart specialisation in the Cohesion Policy 2021-2027 is another major key challenge for public policy. In particular, as we have already said, regarding how this policy instrument will be understood in the new programming and funding period.

4.1. Policy implications

According to ESPON "territorial thinking should become an integral part of pan-European and national policy orientations and guide the design and implementation of regional, urban and local development strategies" (ESPON, 2018: 3). The Cohesion Policy has already the institutional mechanisms to facilitate and support coordinated or even integrated place-based responses to EU policy objectives, most prominently through smart specialisation strategies but also the emerging integrated territorial initiatives, and other initiatives to promote synergies across EU policy boundaries (European Commission, 2017b). Institutional mechanisms in the period 2021-2027 could, if Member States so wish, gain greater sophistication and another operational capability.

For the future Cohesion Policy "policy recommendations include the need for a stronger commitment to smart specialisation strategies, addressing gaps in infrastructure and the quality of human resources, supporting linkages between cities and surrounding areas, investing in the quality of institutions and regional administrative capacity, and improving the macroeconomic and structural conditions for investment" (EoRPA, 2017: 14).

According to the European Commission, "developing and implementing successful R&I policies in today's highly competitive global environment is a demanding task even for the experienced and long established R&I policymaking authorities and their advisory bodies. However, despite the great potential of RIS3 and the results already achieved in many European regions by this public policy

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[25] European Parliament, Report on building blocks for a post-2020 EU Cohesion Policy (2016/2326(INI)).

instrument, the European Commission Report[26] has identified "numerous deficiencies in the analysed processes, where a multitude of actors not specialised in this field – at regional, national and EU level – were faced with the challenge to design and decide on the massive R&I investments required by the ESIF regulations" (European Commission, 2015: 9).

4.2. New requirements for governance

Concerning the RIS3 governance model, the same document reports the following: "we also saw signs of a still unstable RIS3 governance: the long and complex RIS3 development process (without even talking about its implementation) is often not yet coherently structured, prone to all kinds of breakdowns, and can still be discontinued at key junctions" (European Commission, 2015: 9). Still on this subject, Kroll (2015) argues that institutional arrangements and deficits in administrative capacity are also at the origin of the limited scope of sophistication of some S3 strategies. In fact, "the quality of institutions at the local level is particularly important for place-based cohesion policy to be effective. In this case, the introduction in the current programming period of ex ante conditions, requiring the presence of appropriate regulatory and policy frameworks, and sufficient administrative/institutional capacity, has acted as an important incentive for the development of comprehensive and targeted strategies and action plans at the regional and local levels" (ESPON, 2018: 14).

For Glückler and Lenz (2016: 255) "the persistence of regional disparities in the structure and dynamics of economic development, as well as the limited transferability of allegedly successful growth models have been central challenges for theories of regional economic development. One major finding has been the realization that regional disparities in growth can neither be fully explained by external incentives nor by endogenous, knowledge-based approaches, exclusively […] Instead, more and more significance is being attributed to the impact of social institutions on economic development".

Table 1 outlines the European Commission (2015) recommendations so that in the future the fragilities now identified in the implementation of RIS3 can be overcome.

TABLE 1: RECOMMENDATIONS FOR THE FUTURE DEVELOPMENT OF REGIONAL SMART SPECIALISATION STRATEGIES (RIS3)

Recommendations to all involved in the different phases of the Cohesion Policy cycles
- Improve process design, increase stability and reliability;   - Identify all actors involved as well as their specific needs for developing strategic and methodological competences, and for understanding the specifics of R&I policy design and implementation;   - Develop targeted competency building measures – for the broad spectrum of actors in the regions, Member States, and EU organisations.
Recommendations to public authorities involved in RIS3 implementation
- Take appropriate advantage of the broad spectrum of support offered, as well as of experiences where RIS3 – and other EU-related strategy processes – have been completed successfully;   - Ensure that the "Entrepreneurial Discovery Process" (EDP) does not become either a tick-the-box or a myopic exercise. Successful regional development in a globalized economy requires serious and competent forward-looking and (cross-) impact assessment activities, and therefore continuous methodological guidance or advanced methodological competences going beyond the "SW" in a SWOT;   - Benefit from initiatives that take their finalised RIS3 as a base for follow-up activities or for 'institutionalising' an ongoing process;   - Relate to the results of other EU-supported strategy processes, e.g. Strategic Research Agendas (SRAs) or Strategic Innovation Plans (SIPs), as support and input for their RIS3 implementation;   - Establish/strengthen cooperation with communities of other policy fields, EU2020 related programmes, governance levels, etc;   - Develop a full understanding of, and a positive approach to "Openness", invest strongly in the inter-regional/international dimension, and the opportunities from scaling-up local innovations;

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[26] Perspectives for Research and Innovation Strategies for Smart Specialisation (RIS3) in the wider context of the Europe 2020 Growth Strategy. DG Research.

	• Exploit key opportunities for developing synergies between ESIF, Horizon 2020 and other EU, national and regional programmes for the purpose of increasing the impacts of RIS3;
	• Using technical assistance and other ESIF support mechanisms strategically: improving governance structures and administrative/management capacities (human resources, instruments), and strategic capability building throughout the system;
	• Incentivising and facilitating, where appropriate, the participation of all types of regional actors in Horizon 2020 also beyond the traditional R&I and SME focused projects, e.g. in Coordinating Actions, or in the large EU P2P and P2B networks;
	• Developing more integrated policy approaches to key policy objectives (e.g. raising the level of R&I) in social, health or transport policies, and economic policies in general;
	• Broad mobilisation for participation in focused initiatives such as the "Regional Knowledge Platform" recently agreed by DG Research and Innovation and the Committee of the Regions;
	• Adapting R&I-proven practice and project formats from Horizon2020 in OPs (e.g. competitive calls with international peers as evaluators, 2-stage selection procedures, stage-gating of projects for SME instrument projects);
	• Integrate education, research and innovation, and broad human capital agendas more strongly in RIS3. An obvious approach is learning from successfully established Knowledge-Triangle (KT) networks, such as the Knowledge and Innovation Communities (KICs) of the EIT;
	• Participating in (parts of) the activities of their co-location centres could be a next step. In addition, explore the potential of new institutional developments bridging policy fields, e.g. the Committee of the Regions' SEDEC (Commission for Social Policy, Education, Employment, Research and Culture) and its envisaged cooperation with the Commission.
	• Develop advanced strategic processes for smart specialisation;
	• Adapting strategy development approaches from successful RIS3 (not only those developed in the ESIF) and/or private sector management;
	• Disseminating and supporting the application of proven strategic policy and business intelligence tools.
Recommendations to the European Commission	
	• Maintain support for learning and adapting by RIS3 actors, e.g. peer-reviews at regional level, the dissemination of experience of RIS3-based development between regions, including the (enlarged?) activities of the S3 Platform;
	• Step-up the support for capability building (strategic, methodological & management), and for the participative decision approach underlying RIS3;
	• Analyse how far the RIS3 process has influenced the actions, programmes and projects supported with ESI funds in terms of their objectives and intended target groups, and to what degree "Openness" has developed in its various dimensions;
	• Beyond this, incentivise or support structured mutual learning between different EU bodies and the Managing Authorities, and between the Cohesion-, the rural development-, and the R&I-Policy communities. Knowledge exchange platforms could explore the rich expertise across policy domains and between regions;
	• Monitor the implementation of the OPs and the policy mixes not only with respect to the agreed RIS3 priorities, but also from a strategic Europe 2020 point of view;
	• Integrate smart specialization as a cross-cutting paradigm of EU innovation- related policies, in particular the forthcoming revision of the Innovation Union flagship;
	• Work with the Council, European Parliament, Committee of the Regions and others involved for longer-term structural changes aiming to better harmonise ESIF monitoring and the Semester processes.

Source: Authors' own elaboration based on European Commission (2015: 11-14).

According to Bachtler and Begg (2018) "a crucial part of the strategic focus of EU expenditure has been the obligatory development of smart specialization strategies (S3) to support regional innovation in the 2014–2020 period. Building on previous generations of regional innovation support, the S3 approach is intended to promote a more differentiated strategic approach with regional or national priorities identified through an inclusive entrepreneurial discovery process, drawing on evidence of the development challenges and competitive potential, but also taking account of institutional settings and the regional resources available" (Bachtler and Begg, 2018: 159).

4.3. Increasing the policy dimension of smart specialisation

To increase the policy dimension of smart specialisation in the future, a "clearer focus on smart specialization in the next programming period would lead to a more strategic link between projects, better synergies with other EU programs, and better complementarity and cooperation across

Europe's regions" (Micko, 2017: 14). In turn, Creţu (2017) defends that "smart specialisation in outward-looking innovation strategies that seek differentiation and alignment with other regions can also be a powerful mechanism for improving the quality of innovation investments" (Creţu, 2017: 26).

On the same subject it is argued that "smart specialisation strategies (S3) are also an effective tool to engage the potentials of localities by means of interaction among public, private, academic and non-governmental actors. They build on research and innovation strengths in a territory to address emerging opportunities and market developments in a coherent manner. The S3 networking and cooperation approach should cover each step in the value chain from research to commercialisation, and all relevant actors of different sizes and across sectors" (ESPON, 2018: 8).

Notwithstanding "the resurgence of interest in the territorial dimension of economic development policy, its translation into new approaches to the role, remit and instruments of regional policy is still emerging. In part, this reticence is attributable to crisis-induced constraints, such as slow growth, the weak and unbalanced trajectory of economic growth in some countries, and the pressures to contain public expenditure. Place-based policies are also demanding in their institutional requirements, particularly the integration of different policy interventions and delivery systems, their administrative coordination both vertically and horizontally, and their adaptation to regional and local development needs and priorities. With the departure of the UK, advocates of market-orientated measures will lose a prominent supporter, and also one favouring a more spatially concentrated regional policy"(Bachtler and Begg, 2018: 165).

Additionally, "future European policies should support a more decentralised place-based approach to addressing the challenges of inner peripherality by sub-national actors in the context of a more simplified and coordinated set of EU programmes" (ESPON, 2018: 6).

In the future, the territorial dimension of policies should be strengthened by the following actions:"(i) designing policy frameworks that incentivise cooperation; (ii) tailoring public policies and interventions to functional areas, e.g. functional urban areas, cross-border areas, transnational areas, etc.; (iii) developing new governance solutions that engage public authorities and private stakeholders in joint efforts to address shared development challenges; (iv) expanding cooperation practices in planning and making investments, by offering tools that support joint investment initiatives and allow the combining of resources from different funding streams; (v) strengthening the capacities of national, local and regional actors to engage in cooperative activities" (ESPON, 2018: 3).

These measures do not "necessarily mean new policy tools, but it implies strengthening the role of those that already exist, in particular, integrated territorial investment (ITI) and community-led local development (CLLD) and simplifying the working rules of European Structural and Investment (ESI) Funds. [It is expected that] this would ensure more coherent investment and simplify the life of beneficiaries, as well as strengthen complementarity. A lack of coordination between different programmes and policies hampers the design and implementation of comprehensive territorial development. In this context, greater territorialisation of both cohesion and rural development policies would strengthen interventions around the specific challenges of inner peripheral areas rather than following presupposed topics and sectoral intervention logic" (ESPON, 2018:7).

Table 2 summarizes the main recommendations of the ESPON Report on promoting the development of places requiring an integrated place-based approach.

TABLE 2: PROMOTING THE DEVELOPMENT OF PLACES REQUIRES AN INTEGRATED PLACE-BASED APPROACH BASED ON FOUR KEY PRINCIPLES

- Territorial integration requires adopting a view on territorial development perspectives of places beyond their administrative borders – understanding connections and interdependencies with other places, comparative advantages, and opportunities to maximise their development potential and achieve critical mass through joint initiatives. At the same time, vertical coordination of development strategies and priorities across levels of government is important to ensure their mutual complementarity and reinforcement of each other's development potentials.
- Thematic integration (horizontal coordination) calls for a holistic cross-sectoral view on the development of places. All the different fields of policy intervention should be considered in close relation with each other to make sure they become mutually reinforcing rather than mutually disruptive. Investments in human capital, infrastructure, business development, innovation, services, etc. should all be aligned to achieve common development objectives

> and promote the well-being of populations.
> - Public-private partnerships and wide stakeholder engagement are crucial to achieve the ownership and practical implementation of the agreed development objectives. Moreover, collaborative initiatives promote social capital as a crucial precondition for innovation.
> - Financial integration requires pooling resources from different funding streams and ensuring their coordinated use for achieving locally and regionally defined objectives. At the same time, the definition of policy interventions should not be driven by the availability of funds because, in that case, they risk becoming weakly related to the assets and real needs of places and therefore will not contribute to the achievement of agreed goals and, in the worst case, will become a wasteful investment with no real results and impact.

<p align="center">Source: Authors' own elaboration based on ESPON (2018: 28).</p>

As Bachtler and Begg pointed out, "a challenge for regional policy-makers has been to move beyond multi-level governance mechanisms for improved policy coordination (between different tiers of public authority and horizontal coordination of different actors and sectors) to policy integration involving the adoption of common objectives across different policy domains with a view to achieving synergies" (Bachtler and Begg, 2018: 161).

In this sense, the relevance of smart specialisation strategies is also very strong as a public policy tool to support horizontal and vertical coordination between levels of administration and between policies. As well as for the strategic and functional articulation within the regional framework of ITI, CLLD and other territorial development approaches that may be defined for the new Cohesion Policy programming period, and to implement other territorial development strategies based on multi-policy approaches.

In the period 2021-2017, it would also be important to extend the conditions of RIS3 implementation to other territorial configurations that do not entirely coincide with the political and administrative delimitations of the regions and municipalities forming them. It is thus possible to stimulate the development of functional RIS3 and not 'just' territorial ones. It also makes better use of the possibility of operationalizing RIS3 thematic and sectoral RIS3 with a marked territorial nature.

5. THE EUROPEAN FUTURE OF 'SMART'. FROM RIS3 TO RIS4

One of the main challenges for the post-2020 Cohesion Policy is consolidation of the economic, technological and innovation dimensions of RIS3 with the introduction of a new social and societal dimension.

We propose "the development of a new stage for smart specialisation in the post-2020 Cohesion Policy. Based on the increased social dimension and relevance of the RIS3, we also propose that this new generation of RIS3 should be designated as RIS4 - Research, Innovation and Social Strategies for Smart Specialisation" (Neto, 2017: 22).

First of all, because the "techno-productive choices that will be assumed for future RIS3 will naturally have a direct impact on employment and the qualification and training needs of human resources in different territorial contexts" (Neto, 2017: 21). But also because "its feasibility will depend even on its ability to trigger social dynamics of citizenship, creativity and initiative, and also of a techno-professional nature, which guarantee the conditions for achieving the economic, technological, production and dissemination objectives of knowledge inherent to it" (Neto, 2017: 22).

For some authors, "the innovation performance of a country and how this translates into concrete economic outputs cannot be limited to the sole innovation policy mix. Technology accumulation and innovation are strongly shaped by favourable or less favourable framework conditions and by the broader institutional environment. Workable innovation policy mixes cannot compensate for weaknesses in the framework conditions" (Izsák, Markianidou and Radošević, 2013: 8). The qualification of human resources, and their involvement and participation in the definition of strategies and development processes, are one of the clearly inseparable aspects of innovation policies. Similarly, "the effectiveness of policies aiming to boost collaboration with public research and/or to directly support business RDI activities requires specific assessments of the innovation capacity of businesses in the country concerned" (Izsák, Markianidou and Radošević, 2013: 8).

The inclusion of a strong social dimension in regional smart specialisation strategies is also justified

by the recent adoption by the European Council of the European Pillar of Social Rights[27] and the corresponding objective of strengthening the Social Agenda of the European Union. The European Pillar of Social Rights aims to be a key policy response to this concern. "The Pillar strives to reaffirm and further strengthen relevant rights and principles in support of equal opportunities and access to the labour market, fair working conditions, social protection and greater social inclusion. It underlines people's right to quality and inclusive education, training and life-long learning so they can maintain and acquire skills that enable them to participate fully in society and to successfully manage transitions in the labour market, also in line with the United Nations sustainable development goals.[28]

Already in 2009 the Barca Report defended that "there is in particular a strong case for building a territorialised social agenda as part of cohesion policy, aimed at guaranteeing socially agreed standards for particular aspects of their well-being to which people attach a high priority. This would represent a kind of social contract between the EU and its citizens and a means, in the longer-term, of encouraging mobility by reducing fears about it" (Barca, 2009: viii).

Among others, Zeitlin (2007) also made an important contribution to strengthening the social dimension of the Lisbon Strategy. And even at the European level some important steps have been taken, such as the case of the European Communities proposals: *A renewed commitment to social Europe: Reinforcing the Open Method of Coordination for Social Protection and Social Inclus*ion (2008)[29] and *Member States and Regions delivering the Lisbon strategy for growth and jobs through EU cohesion policy, 2007-2013* (2008)[30]. But until now, in the 2014-2020 programming period this objective is still far from being achieved.

Capello and Kroll (2016) have even questioned the narrow focus of S3 on 'industrial renewal' rather than a broader conceptualization of regional development that also includes intangible assets (such as natural and cultural capital) and social innovation. They propose precisely the reinforcement of the social innovation component in RIS3.

The ESPON Report goes even further and advocates that "specialisation strategies should not necessarily follow classic industrial taxonomies, but rather focus on technology and competence fields which can be flexibly applied in different industries" (ESPON, 2018: 18-19).

The European Commission itself acknowledges "the implementation of priorities identified in smart specialisation strategies by increasing the quality and openness of research and the higher education system, ensuring competitive funding of research, strengthening knowledge transfer, linking vocational education and training to innovation systems and contributing to skills intelligence and skills matching in line with the New Skills Agenda" (European Commission, 2017b: 5-6)[31].

Some important steps are already being taken and the social dimension is becoming more prominent in some regional policies and development strategies[32]. In March 2017, leaders from 27 EU Member States and EU institutions signed up to the Rome Agenda pledging to work towards a social Europe: "a Union which, based on sustainable growth, promotes economic and social progress as well as cohesion and convergence (...) a Union which fights unemployment, discrimination, social exclusion and poverty; a Union where young people receive the best education and training and can study and find jobs across the continent."[33]

In fact, the Social Agenda is taking on a new dimension in the process of European integration. Fundamental objectives such as solidarity and intergenerational justice, inclusive growth, justice and social protection seem to be gaining new relevance. The proposal to create a European Employment Authority, the deepening of the European Social Scoreboard, or the fact that the Annual Growth Survey now includes an assessment of Member States' performance in the light of the objectives of the European Pillar of Social Rights, are good examples. Additionally, in 2018, in the "European Semester" social issues will be associated with the objective of economic and budgetary

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[27] COM(2017) 250 final. EU leaders proclaimed the Pillar at the Social Summit in Gothenburg, Sweden, on 17 November 2017.

[28] The European Pillar of Social Rights at https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights_en

[29] COM(2008) 418 final.

[30] COM(2007) 798.

[31] COM(2017) 376 final.

[32] SWD(2018) 289 final.

[33] SWD(2018) 289 final.

coordination.

Another important contribution to affirming the European Pillar of Social Rights is the creation, in 2018, of the toolkit *Resources for guidance. Developing Information Technologies* and Labour Market Information in Lifelong Guidance of CEDEFOP - European Center for the Development for Vocational Training[34].

The New Skills Agenda for Europe[35]also highlights "the importance of investing in upskilling and re-skilling as, in a fast-changing global economy, skills are a key driver for competitiveness and innovation".

In December 2017, the European Council's conclusions further highlighted the importance of the social and educational dimension of EU policies 'in bringing Europeans together and building a common future'[36]and in May 2017 the European Commission proposed a renewed EU agenda for higher education.[37]

Spiesberger, Prieto and Seigneur (2018) in the Report *Smart specialisation and social innovation: from policy relations to opportunities and challenges*, also analysed some ongoing tendencies of Social Innovation (SI) in the EU and its relation to smart specialisation (S3), and Edwards, Marinelli, Arregui and Kempton (2017), in the Report *Higher Education for Smart Specialisation Towards Strategic Partnerships for Innovation*, analysed the European policy and funding landscape to establish how Higher Education Institutions can be supported in a broad sense to implement Smart Specialisation Strategies (S3) by undertaking 'action research' in partnership with regional authorities, local Higher Education Institutions and other stakeholders.

Increasing the social dimension of RIS3 will therefore be a relevant contribution to the creation of conditions for the operationalization of this new Pillar, as well as the New Skills Agenda for Europe, converting them into public policy instruments associated with the Cohesion Policy.

Just as in 2014-2020 we saw the European Union's Science Policy being linked to the Cohesion Policy, it is important, in the post-2020 period, to articulate the Union's main policies with this new, emerging European social agenda. "The post-2020 Cohesion Policy should therefore focus on making the RIS3 potential more profitable, so as to make it evolve from the current RIS3 - Research and Innovation Strategies for Smart Specialisation, to RIS4 - Research, Innovation and Social Strategies for Smart Specialisation"(Neto, 2017: 22). Concentrating on the creation of RIS4 - Research, Innovation and Social Strategies for Smart Specialisation should even be one of the main aims of the Cohesion Policy 2021-2027.

6. FINAL REMARKS

The 'smart' European future is being decided now. And it is widely recognized by the institutions and other bodies of the European Union, the institutions of each Member State, and also by universities and other international organizations that "regional and local authorities and stakeholders should develop tailor-made specialisation strategies, adapted to their territorial specificities, promoting favourable economic environments, engaging in interregional coordination, developing regional/local brands and promoting connectivity (both physical and digital)" (ESPON, 2018:18).

But for this to be possible and for RIS3 it is essential that in the future they can include a true social dimension, associated with the economic and innovation dimensions that already characterize them.

The RIS3 as an instrument of public policy with an important potential for rationalizing and

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[34] A European toolkit on labour market information meant for all career practitioners active in or interested in lifelong guidance and career development. See http://www.cedefop.europa.eu/en/toolkits/resources-guidance/toolkit/what-is-this-toolkit-about .

[35] The agenda for new skills in Europe and its fields of activity are as follows: (i) Skills improvement pathways: new opportunities for adults; (ii) European Qualifications Framework for lifelong learning; (iii) Action plan for sectoral cooperation on skills; (iv) Vocational education and training; (iv) Tool for defining EU skills profiles for third country nationals; (v) Recommendations on core competencies. Fundamental principles of the European Pillar Social Rights: Equal opportunities and access to the labour market; fair working conditions, and social protection and inclusion.

[36] COM(2017) 376 final.

[37] COM(2017) 247 final.

aggregating other spatially more circumscribed integrated territorial approaches. Also to support horizontal and vertical coordination between levels of administration and between policies, it will be a relevant tool contributing to a more efficient Cohesion Policy. In the same way that evolution from this RIS3 to an RIS4 instrument would substantially increase its capacity to promote regional development and the role of the new European Union social agenda in the future of the Cohesion Policy.

REFERENCES

Bachtler, J. and Begg, I. (2018) "Beyond Brexit: Reshaping policies for regional development in Europe", *Papers in Regional Science*, vol. 97, pp. 151-170.

Bachtler, J.; Mendez, C. and Wishlade, F. (2018). "Reshaping the EU budget and Cohesion Policy: carrying on, doing less, doing more or radical redesign?", European Regional Policy Research Consortium (EORPA), EoRPA Paper 17/5, European Policy Research Center (EPRC).

Bachtler, J.; Oliveira Martins, J.; Wostner, P. and Zuber, P. (2017). *Towards Cohesion Policy 4.0: Structural Transformation and Inclusive Growth*. Brussels: Regional Studies Association. RSA Europe.

Barca, F. (2009). *An Agenda For A Reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations*. Independent Report prepared at the request of Danuta Hübner, Commissioner for Regional Policy.

Barca, F. (2017). "The European Union's Great Opportunity". 7th Cohesion Forum, 26-27 June Brussels, Keynote speech: EU cohesion policy, a forward-looking perspective. Brussels.

Boschma, R. (2017). "Relatedness as driver of regional diversification: a research agenda". *Regional Studies*, vol. 51, no. 3, 2017, pp. 351-364.

Capello, R., and Kroll, H. (2016). "From theory to practice in smart specialization strategy: Emerging limits and possible future trajectories". *European Planning Studies*, vol. 24, no. 8, pp. 1393–1406.

Crescenzi, R. and Iammarino, S. (2017). "Global investments and regional development trajectories: the missing links", *Regional Studies*, vol. 51, no. 1, pp. 97-115, DOI: 10.1080/00343404.2016.1262016.

Creţu, C. (2017). "The international dimension of smart specialisation". *Panorama*, vol. 61, pp. 26-27.

Edwards J., Marinelli E., Arregui A. and Kempton L (2017). "Higher Education for Smart Specialisation: Towards strategic partnerships for innovation", S3 Policy Brief Series No. 23/2017, doi: 10.2760/376572.

EoRPA (2017). "Reshaping the EU budget and Cohesion Policy: carrying on, doing less, doing more or radical redesign?". EoRPA - European Regional Policy Research Consortium and EPRC - European Policies Research Centre, *EoRPA Paper 17/5*.

ESPON (2018). "The territorial dimension of future policies", ESPON Working Paper, ESPON - European Territorial Observatory Network, Luxembourg.

EU High Level Group on Own Resources (2016). *Future Financing of the EU. Final report and recommendations of the High Level Group on Own Resources*. EU High Level Group on Own Resources, December 2016.

European Commission (2008a). *Green Paper on Territorial Cohesion Turning territorial diversity into strength*, COM(2008) 616 final.

European Commission (2008b). *Regions 2020 An Assessment Of Future Challenges For EU Regions*, Commission Staff Working Document, SEC(2008), 10.2008.

European Commission (2010). *A Digital Agenda for Europe*, COM(2010) 245 final/2.

European Commission (2010a). *A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020 final.

European Commission (2010b). *Europe 2020. A strategy for smart, sustainable and inclusive growth*, COM(2010) 2020.

European Commission (2011). *Horizon 2020 - The Framework Programme for Research and Innovation*, COM(2011) 808 final.

European Commission (2015). *Perspectives for Research and Innovation Strategies for Smart Specialisation (RIS3) in the wider context of the Europe 2020 Growth Strategy*. DG Research. Luxembourg, Publications Office of the European Union.

European Commission (2016). *EU Funds working together for jobs and growth: Synergies between the R&I Framework Programmes and the European Structural & Investment Funds*. Luxembourg, Publications Office of the European Union.

European Commission (2017a). *A Renewed EU Agenda for Higher Education*, COM(2017) 247 final.

European Commission (2017b). *Commission Staff Working Document accopanying the Communication on Strengthening Innovation in Europe's Regions: Towards resilient, inclusive and sustainable growth at*

territorial level, SWD(2017) 264 final.

European Commission (2017c). *Establishing a European Pillar of Social Rights*, COM(2017) 250 final.

European Commission (2017d). *Strengthening Innovation in Europe's Regions: Strategies for resilient, inclusive and sustainable growth*, COM (2017) 376 final.

European Commission (2018a). *A Modern Budget for a Union that Protects, Empowers and Defends The Multiannual Financial Framework for 2021-2027*, COM(2018) 321 final.

European Commission (2018b). *A Modern Budget for a Union that Protects, Empowers and Defends The Multiannual Financial Framework for 2021-2027*, COM(2018) 321 final.

European Commission (2018c). *My Region, My Europe, Our Future. Seventh Report on Economic, Social and Territorial Cohesion*. Luxembourg: Publications Office of the European Union.

European Commission (2018d). Press release, Strasbourg, 29 May 2018.

European Commission (2018e). *Proposal for a Regulation of The European Parliament and of The Council on the European Regional Development Fund and on the Cohesion Fund*, COM(2018) 372 final.

European Commission (2018f). Proposal for a Regulation of The European Parliament and of The Council laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, and the European Maritime and Fisheries Fund and financial rules for those and for the Asylum and Migration Fund, the Internal Security Fund and the Border Management and Visa Instrument, COM (2018) 375 final.

European Commission (2018g). Commission Staff Working Document Impact Assessment (2018). Accompanying the document Proposal for a Regulation of the European Parliament and the Council on the European Social Fund Plus (ESF+), and a Proposal for a Regulation of the European Parliament and the Council on the European Globalisation Adjustment Fund (EGF), SWD(2018) 289 final.

European Court of Auditors (2017). *The Commission's negotiation of 2014-2020 Partnership Agreements and programmes in Cohesion: spending more targeted on Europe 2020 priorities, but increasingly complex arrangements to measure performance*. Special Report no. 2/2017. Luxembourg: European Court of Auditors.

European Court of Auditors (2018). *Simplification in post-2020 delivery of Cohesion Policy*, Briefing Paper May 2018. Luxembourg: European Court of Auditors.

European Parlement (2017). *Report on building blocks for a post-2020 EU cohesion policy* (2016/2326(INI)), Committee on Regional Development.

Foray, D.; Goddard, J.; Goenaga Beldarrain, X.; Landabaso, M.; McCann, P.; Morgan, M.; Nauwelaers, C. and Ortega-Argilés, R. (2012). *Guide to Research and Innovation Strategies for Smart Specialisation (RIS3)*. European Commission, Regional Policy, Smart Specialisation Platform, May 2012.

Gianelle, C., D. Kyriakou, C. Cohen and M. Przeor (eds) (2016). *Implementing Smart Specialisation: A Handbook*. Brussels: European Commission, doi:10.2791/53569.

Glückler, J. and Lenz, R. (2017). "How institutions moderate the effectiveness of regional policy: A framework and research agenda", *Investigaciones Regionales – Journal of Regional Research, no.* 36, pp. 255-277.

Huguenot-Noël, R. and Hunter, A. (2017). "Cohesion Policy: how can the EU sustain solidarity and investment at the same time?" *Panorama*, Summer 2017, no. 61, p. 37.

Iammarino, S.; Rodríguez-Pose, A. and Storper, M. (2017). "Why Regional Development matters for Europe's Economic Future". European Commission, DG Regional and Urban Policy, Working Papers, WP 07/2017.

Izsák, K.; Markianidou, P. and Radošević, S. (2013). *Lessons from a Decade of Innovation Policy. What can be learnt from the INNO Policy TrendChart and The Innovation Union Scoreboard*. European Commission, Directorate General Enterprise and Industry. Brussels: Publications Office of the European Union.

Kroll, H. (2015). "Efforts to implement smart specialization in practice: Leading unlike horses to the water", *European Planning Studies*, vol. 23, no. 10, pp. 2079-2098.

Marcegaglia, E. (2017). "Building an investment policy for a more cohesive Europe". *Panorama*, Summer 2017, no. 61, p. 29.

McCann, P. and Raquel Ortega-Argilés, R. (2016). "Smart Specialisation: Insights from the EU Experience and Implications for Other Economies", *Investigaciones Regionales – Journal of Regional Research,* no. 36, pp. 279 to 293.

Micko, L (2017). "Cohesion Policy is crucial for a broad innovation capacity throughout Sweden's regions". *Panorama*, Summer 2017, no. 61, p. 14.

Mihaylova, I. (2017). "Flexibility, simplification, competitiveness and innovation for post-2020 Cohesion Policy". *Panorama*, Summer 2017, no. 61, p. 21.

Monti, M. (2017). "The EU's future finances". *Panorama*, Summer 2017, no. 61, p. 32-33.

Morgan, K. (2017). "Cohesion Policy and the public-sector paradox". *Panorama*, Summer 2017, no. 61, p. 30.

Neto, P. (2017). "Post-2020 Cohesion Policy and the New Challenges for Public Policy", Conference presented, as keynote speaker, at the Official Dinner of the International Seminar on Social Services of General Interest and Territorial Cohesion: Experiences and Challenges, organized by the Portuguese Agency for Development and Cohesion (AD&C) I.P., Évora Hotel, November 13, 2017, Évora, Portugal.

Nijkamp, P. (2016). "The «resourceful region». A new conceptualisation of regional development strategies", *Investigaciones Regionales – Journal of Regional Research,* no. 36, pp. 191-214.

Oettinger, G. (2017). "Overcoming economic and political challenges together". *Panorama*, Summer 2017, no. 61, pp. 10-11.

Regulation (EU) no. 1303/2013 of The European Parliament and of The Council, 17.12. 2013.

Rodrik, D. (2007). O*ne Economics Many Recipes: Globalization, Institutions and Economic Growth*. Princeton: Princeton University Press.

Spiesberger, M., Gomez Prieto, J. and Seigneur, I. (2018). *Smart specialisation and social innovation: from policy relations to opportunities and challenges*. Luxembourg: Publications Office of the European Union, doi:10.2760/601340, JRC111371.

Zeitlin, J. (2007). "Reinforcement de la Dimension Sociale de la Strategie de Lisbonne", *Revue Belge de Sécurité Sociale*, No 2/07, pp. 459-472.

Zypries, B. (2017) "Requirements of the future EU Cohesion Policy". *Panorama*, Summer 2017, no. 61, p. 8.

Smart specialisation in Africa: Potential for regional development in Cameroon based in tourism-training-innovation resources

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ABSTRACT

Tourism in Cameroon, just like in most Sub-Saharan African countries, despite its potential, has been lagging behind in international terms, with one of the causes being the lack of adequate sectoral policy tools and strategies to carry out developmental goals. This article considers the notion of smart specialisation, currently in the spotlight in European Union's regional policy, to analyse the situation in Cameroon. Firstly, it provides a brief outlook at the Cameroon's economy, coupled with a comprehensive look of innovation, training and tourism resources at regional level. Secondly, specialisation indices are calculated and a cluster analysis is implemented to find territorial patterns at regional level. Regions with high potential for tourism development are grouped into a cluster while other clusters are constituted by regions with lower potential for tourism and innovation. Hence smart specialisation may be an interesting concept to be implemented in Cameroon and other African regions as a planning tool, a proper exercise to discover the existing potential of the territories needs to be performed in order to define accordingly priorities and areas of intervention.

Keywords: Cameroon, Cluster Analysis, Smart Specialisation, Tourism.

JEL classification: Z38, O20

1. INTRODUCTION

The effects of the global economic meltdown have been illustrative on economies' resilience. Countries and regions from the sub-Saharan Africa and the African continent as a whole were affected, high growing unemployment and decrease of GDP - Gross Domestic Product, with difficulties in adapting and solving the problems resulting from the shocks of the international economic downturn. In the mist of such difficult economic situation, governments worldwide, both at national and transnational levels, have been looking for solutions to overcome these turbulent times and set their economies up and running again.

Most economies in Africa, and especially in sub-Saharan Africa, rely profoundly on agriculture. The case of Cameroon is not different, with the economy currently recovering from the crisis thanks to implemented fiscal policies. There is the need to add to such fiscal policy efforts complementary

policy tools in other sectors that have shown resilience in the face of the global economic meltdown. In this particular aspect, tourism has proven globally to stand the challenges posed by the economic crisis, keeping a stable growth with tourism destinations floating and preventing a higher impact in local economies.

The uninterrupted and steady growth of tourism in Africa recently led the majority of governments in the continent to realize the importance of developing the tourism sector. Despite these efforts, Africa is far from reaching its full potential. Africa's share of the tourism market is still small with just about 50 million tourists from a global total of 900 million tourists in 2009 (Kimbu, 2010). Despite this, most of the African market is concentrated in the North, East, West and Southern parts of Africa. Countries in the central sub-region of Africa, one example is Cameroon, are not experiencing much growth.

Even benefitting from an acclaimed rich culture and biodiversity, the tourism sector in Cameroon is still struggling to deliver on its full potential. There is the need to find a suitable policy and strategy tools to enable the country's tourism sector to reach its full potential.

The tourism sector in Cameroon accounts, as of 2013, for 2.1% of the total employment in the country and this figure is expected to grow to 3.5% in the next 10 years. Tourism policy tools need to be revised for the sector, which currently exhibits unexploited capacity for the nation and its regions to benefit from. The stage at which Cameroon tourism industry portrays a picture of tourism at the stage of infancy and this could be deduced from the fact that there is no clear cut policy or strategy for the sector nor there is a development plan in place (Kimbu, 2010).

With this context in mind, this study has the following objectives. First, following the adoption of Research and Innovation Strategies for Smart Specialisation (RIS3) in the European Union to close the economic gap between regions of member-states, using R&D and innovation to explore and valorise knowledge in areas in which regions have competitive capacities, the article presents the concept of smart specialisation, and considers if it could be a useful policy notion for sub-Saharan African countries, such as Cameroon. Second, using selected indicators regarding economic dynamics, innovation and tourism resources, the article describes the current economic environment in Cameroon, analysing the performance of the ten administrative regions of Cameroon.

In the process of reaching the above mentioned objectives, this work will be trying to understand the regional specialisations in Cameroon. The study will map the relative specialisation of Cameroon's regions in terms of tourism, training, and innovation and propose policy options for the regional development.

The utilisation of the concept of 'smart specialisation' in the field of tourism is relatively scarce and the existing literature dedicated to connect smart specialisation and tourism is still under development. In the majority of European examples of RIS3 the connection between these two aspects, tourism and Research & Innovation, is very limited indeed. Nonetheless some regions, such as the Algarve region or Cornwall & Isles of Scilly, have explicitly defined tourism as a priority in RIS3 and analysed the connections of this sector with others key S&T areas (CCDR Algarve, 2014; Cornwall & Isles of Scilly, 2013).

The case of Cameroon is a reason for concern as there is virtually no empirical research or existing literature dedicated to smart specialisation and even regarding tourism in Cameroon's regions. In this way, this study is going to make use of both quantitative and qualitative data to explore the applicability of smart specialisation as a policy and strategic tool, especially for tourism development, using Cameroon's regions as the context for this study. The research work will be concentrating in comprehensive available data on tourism, training and innovation in Cameroon's ten regions. Taking into consideration, the diversity and the availability of different tourism resources and services in Cameroon, we saw the interest to investigate the existing regional typologies to help the tourism sector and the economy understand its capacity.

The article is organized as follows. After this short Introduction we will introduce a literature review that will deal with the main theoretical concepts like smart specialisation, tourism specialisation and differentiation, and related and unrelated variety. Then a brief look into the case of Cameroon's economy and its regions. Some methodology considerations for the empirical study: the use of statistical methods for data analysis and the collected data. Then, cluster analysis and specialisation mapping is used to improve the understanding of regions in Cameroon. Finally, the conclusion entails a roundup of the research results, policy implications, the limits of the analysis, and suggestions for further developments of the work

2. LITERATURE REVIEW

2.1. From Specialisation to Smart Specialisation

Specialisation regards when a nation, a region, or a city gives more importance to a specific sector of production over other sectors within the economy. The territory may have different levels of opportunity costs for production. This could be a result of differences from human capital, science and technology, natural resources, or intensity of capital in labour. These differences may serve as a source of comparative advantage. Hence, nations will turn to specialize in a particular sector or area of the economy where they have a comparative advantage over other nations due to relatively low cost of production, giving them a gain in trade regarding other nations that might be lacking in this area of trade but have a comparative advantage in the production of something else (Krugman & Obstfeld, 1998). Traditional studies in Economics analyse specialisation from two main angles. The notions of relative and absolute specialisation come into play. Absolute specialisation regards the situation when a country or region is considered specialized if a little number of industries or sectors exhibit high shares of overall employment of the country. Relative specialisation regards a region or country being specialized in one particular sector or activity as compared to other regions even though the absolute weight of this industry in the region or country is lower. In this case the region is more specialized in certain economic activities than other regions (Palan, 2010).

The idea of smart specialisation was improved upon the classical ideas of David Ricardo and Adam Smith, that made mention of the need to focus on the activities where regions were better rather than the areas where they were worst (Bonaccorsi et al., 2009; Bonaccorsi et al. 2011). In recent times, the concept of smart specialisation could be traced partially to the Barca report (Barca, 2009) and the works of Dominique Foray and the Knowledge for Growth Expert Group within the framework of the European Research Area (ERA) (OECD, 2013). The major reason for Europe's lagging behind as compared to other countries like the USA and Japan in terms of competitiveness was explained by this group by research and innovation (R&I) intensity and the dissemination of new technologies (McCann & Ortega-Argilés, 2015). Some of the findings of the group brought to light the fact that, there was an overly fragmented investment in research in Europe, lack of investment coordination of R&I between stakeholders, and shortage of critical mass. It also noted the fact that regions invested in similar areas of others, bringing to light the existence of the "Me Too" syndrome. Investments were replicated in fashionable areas such as information and communication technology, nanotechnology, and biotechnology.

The group recommended the support for structural change, enabling the emergence and growth of new activity sectors or industries by investing in R&I areas having strategic potential in each European region, taking into consideration each and every sectors of strength and potential. Therefore, is the need for a change in R&I strategies taking into attention the existing conditions in each and every region.

Smart specialisation as a strategic approach to economic development is geared towards supporting the existing potential of endogenous resources by stimulating R&I. It regards the process of developing a common strategic vision, identifying place-based domains of strategic potential, developing multi-stakeholder governance mechanisms, setting priorities and using support policies to maximize the knowledge-based development potential of the region; regardless of whether it is strong, weak, high-tech or low-tech (Midtkandal & Sorvik, 2012).

Smart specialisation is a policy concept that looks at the process of 'entrepreneurial discovery'. This idea regards the policy process of selecting and prioritizing sectors and activities in regions where there is a need to develop a cluster of activities and giving entrepreneurs the possibility to explore the right domains for future specialisation and structural change (Foray et al., 2011). The concept of smart specialisation favours a bottom-up approach in policy making, in which search activities by entrepreneurs are promoted for them to be able to identify possible advantages of innovation-based technologies in their various economic domains. Entrepreneurs are in the best position to help policy makers to discover the R&D and innovation areas in which a region is most likely to excel, taking into consideration its existing capabilities and productive resources.

Proponents of smart specialisation favour the concentration of efforts and resources in a limited number of priorities of specialisation. These should be areas where economic agents, countries, regions, and groups have excelling explicit or latent capacities (Marinelli et al., 2016). Smart specialisation will result in a strategy that jeers at building on local strengths, competitive advantages and potential for excellence, as well as supporting technological as well as practiced-based

innovation and stimulate private sector investment. From the policy perspective, smart specialisation depends on selecting and prioritizing fields or areas where a cluster of activities should develop. This involves risks for policy-makers of selecting the wrong domains and creating negative path trajectories. It should be noted that a goal of policy makers should be to make a strategic choice that will minimize these risks.

The key question is what domain, what activity, a region would benefit from and should specialize in R&D and innovation (Foray, David & Hall, 2009). Taking into consideration resource constraints, regions cannot invest in all STI areas. They need to focus on certain domains, so they can become more competitive and grow. Regions to be competitive need to concentrate on developing distinctive and original areas of specialisation; not by imitating other competing regions, but by focussing on areas which they do have unique potential to advance and compete. The difficult and key question is in which areas regions must concentrate their efforts? The answer to this is complex but complementary; that is to say, concentrating on innovative projects that will improve other regional productive resources.

The issue to consider here is that smart specialisation emphasizes the need for regions to identify and select their own specific potential resources of innovation and economic development. To do this, regions are expected to carry out a serious self-assessment of their knowledge, assets, capabilities and competences and those involved in the process of knowledge transfer (McCann & Ortega-Agiles, 2015).

There has been an increase in the presence of the concepts of related and unrelated variety in the regional studies literature, with many authors (Jacobs, 1969; Glaeser et al., 1992; Van Oort, 2004), postulating that the presence of variety in an economy can be a surplus in terms of sources of economic growth. This implies that effects on growth are not only caused by the stock of inputs but also the precise composition (Frenken et al., 2007) and as such, since spill overs regard geographical boundaries, the differences in regional growth should be related to qualitative differences in the composition of an economy, particularly at the level of its regions. It should be noted that only some sectors are complementary and their joint presence causes extraordinary growth within an economy.

Simply put, a region specializing in a set of interrelated industries will experience higher rates of growth, as compared to a region specializing in industrial sectors that are not complementary to each other (Frenken et al., 2007). On the other hand, the issue of regional economic growth, development and unemployment comes into play. Looking at sectoral diversification, a high variety of sectors within an economy simply means that a negative shock in the demand for any of these sectors will have just limited effects on the growth and employment while a region more specialized in one sector of activity or sectors of activities with correlated demand, runs the risk of a serious showdown in growth and high rates of unemployment due to demand shock. As argued by Passitti (1993), the lack of growth in the sectoral variety by an economy over time will lead to suffering from structural unemployment and ultimately to stagnation.

But the debate about smart specialisation is not absent of criticism (Asheim, 2013). Several authors have underlined that the strategies focusing smart specialisation are only recycling and repackaging existing policies, as those associated to clusters and innovation systems (Rhiannon, 2014) without the adequate emphasis in the new concepts of smart specialisation such as the 'entrepreneurial discovery'. These strategies were also heavily criticized by its unbalancing effect in the competitiveness and social cohesion among regions by centralizing the investments in terms of excellence criteria were the already more developed regions are more capable (Pessoa, 2015). If the strategic investments are only made taking into consideration the S&T infrastructure several regions will not be able to catch up. The territorial specificities, the tacit dimensions of knowledge production and learning based in the doing-using-interacting are crucial to be also included in sophisticated versions of RIS3 (Nunes & Lopes, 2015). Some sectors, which are not knowledge intensive, such as tourism have potential to cross-fertilize advanced knowledge activities, creating conditions for more related variety. For example, regional economies can use tourism to benefit from creative and cultural activities to ignite regional cultural and creative industries and achieve smart specialisation (Cooke, Pinto & Cruz, 2015).

A smart specialisation strategy involves the knowledge of the path dependencies created in each country and region in order to understand their consequences and to define strategies that can incorporate them and maximize their potential through the alliance with other emerging sectors. This process should thus be articulated and renewed in order to create competitive advantages and

innovative dynamics, without representing a break in the structure of the economic and social fabric of the regions. The case of Portugal is an interesting case, as it is a country that has undergone austerity and economic recovery programs, which have brought several social and economic consequences, while simultaneously developing its strategy of smart specialisation. Pinto (2016) identifies four generations of the evolution of S&T and innovation public policies that set the pace of institutional change regarding the generation and consolidation of innovation routines in Portugal. A first generation regarding the grassroots of S&T policy, marked by a vertical structure governance in which it was assumed that the benefits from scientific research came mechanically and sequentially to companies, resulting in the birth of several public universities in Portugal; a second generation of new actors and infrastructural investment with the birth of several development and innovation agencies and actors; a third generation aimed at consolidating the STI dynamics, marked by the acceleration of scientific and technological system, mainly stimulated by government spending, the change of knowledge institutions and the institutionalization of assessment practices and participation in science and internationalization of the actors of the system; and the fourth generation encompass by the times of turbulence and austerity with the creation of programmes aimed at stimulate the innovation system in a fragile economic context.

The new age of policies, concerning the smart specialisation strategies for 2020 is clearly supportive of the design of new instruments oriented towards innovation. The European Union strategic documents underline the determination to overcome the economic turmoil and create conditions for a more competitive economy with higher employment in 2014-2020. At the present moment it is yet very difficult to comprehend to true impact of the RIS3. Nonetheless it is clear that RIS3 helped to define a more limited number of policy intervention priorities and a larger consensus among the national and regional stakeholders in the pathway to innovation. But the challenge is huge to implement such an ambitious agenda articulating conveniently the different national and regional capabilities, the selected priorities, and the interests and agenda of specific innovation actors (Pinto, 2016). The EU is beginning to stimulate efforts to transfer the utilisation of the 'smart specialisation' rationale in the formulation of regional policies in developing countries, particularly in South America (Barroeta et al., 2017). Africa may be next.

2.2. Tourism Specialisation and Differentiation

Tourism is an engine for economic development with the main focus on the regional level (Jackson et al., 2005). The economic contribution of tourism and tourism specialisation is very important with regards to regional development as it brings forth job creation, hence economic growth. As noted by Sequeira & Nunes (2008) countries specialized in tourism grow more than others on average. Based on Jackson and Murphy (2002) the application of the concept of clustering to tourism sector or industry is completely acceptable taking into consideration, the fact that tourism products interact with local economic bases, prompting interrelated organizations to act together, leading to the creation of agglomeration dynamics.

The building of a tourism cluster can be a major driving force in improving the current infrastructure and spreading economic activities (Santos et al., 2008). The setbacks in developing economies have caused companies not to easily want to be located away from the centre. It is common to find economic activities concentrating in the centre or around the capital cities in these countries. The economic geography of developing countries makes room for high costs in productivity, bottlenecks, congestions and inflexibility leading to high cost of administration and serious inefficiencies in conjunction with the lower quality of life.

Technological development creates opportunities for the development of tourism in the world today. The ability of a nation to provide attractive and precise information about the tourism characteristics of each its territory; characteristics such as heritage sites, cultural tradition and natural resources can contribute or add to the creation process of specialized tourism products for particular visitor segments. Technological development acts as an important tool for the creation of differentiated markets; of course in line with the local characteristics of the territory, so as to attract a particular segment of the market (Romão et al., 2012).

The capacity of a region or destination to ensure its attractiveness in the long term through differentiation depends on its ability to promote innovative products and services linked to its natural and cultural characteristics. This kind of development strategy provides destinations with a monopolistically competitive position with regards to other destinations (Butler, 2011). Thanks to

differentiation, instead of cost-leadership competition which would have little effects on the local economies and effects on the natural and cultural resources, the value added of tourism can be significantly higher and the life cycle extended. The benefits of local cohesion enhancement through the promotion of interaction between tourists and residents also contribute towards good conditions for tourism development and the spread of benefits amongst local stakeholders.

To sum up, regions to develop need to specialise in specific areas where they have explicit or latent capacities. Nonetheless it is important to avoid excessive concentration of resources in certain geographical areas and limit the over-specialisation in particular activities that may originate less effective development trajectories. The concept of smart specialisation emphasises the selection of economic and R&I priorities based in the endogenous resources of the regions for the creation of adequate strategies and attraction and generation of more resources. Tourism is an economic activity with high potential for igniting agglomeration dynamics and the emergence of regional clusters by stimulating demands and creating linkages with other sectors in the economy that may explore the benefits of R&I.

3. THE ECONOMY OF CAMEROON AND ITS REGIONS

3.1. Profile of Cameroon

Located in the central part of the African continent, with an area size of 475,442 square kilometres, the Republic of Cameroon has a population of about 19.4 million inhabitants (Kimbu, 2010). Cameroon locates in the south of Nigeria and Chad, in the west of Central African Republic and in the North of Equatorial Guinea, Gabon and Congo. The country, because of its diversity regarding animal life, plants and its population size, couple with variations in landscape, vegetation, and climate, is usually being described as "Africa in miniature".

In 1960's, after the independence, the Cameroon's economic base was purely agrarian with the economy being dominated by agriculture, forestry and fisheries. The coming of the petroleum sector in the 1980's boosted the country's economy. The country presents one of the highest literacy rates in the continent of Africa (IMF, 2010) and is one of the two bilingual countries in the world with English and French as the official languages. Though not significant when compared with other petroleum nations in the world, the petroleum sector in Cameroon contributed about 60% of the country's export earnings during the 1980's.

Reading from African Economic Outlook, 2014 (African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, 2014); current figures and forecasts reveal a promising position for Cameroon in the coming years, with a 3.6% growth rate registered in 2013 and it is expected to follow the same in 2014 in the primary sector. The secondary sector witnessed growth from 4.7% in 2012 to 5.7% in 2013; just like the primary sector, the secondary sector is expected to follow the same growth pattern in 2014. The tertiary sector growth rate increased from 5.5% in 2012 to 5.9% in 2013, with forecast reading an increase from 5.4% in 2014 to 5.5 % in 2015. The above dynamics in sectoral growth are accounted for by improving performances in areas such as telecommunication, transport and the recovery of the agriculture, mining and petroleum sectors. With the rising population, the need for education constantly has been increasing, whatever level of education. The country witnessed a 5% rise in higher education, 7% in primary and secondary education between the years 2010 and 2013. In 2012, 209,000 students registered in State universities, while in secondary and primary levels; 1,713,000 and 3,800,000 students and pupils registered respectively.

Despite the significant rise in the interest for education, there still exists the need to match the human and material requirements needed to train this growing population. In the year 2012, with regards to infrastructures, the country had 16,000 primary schools, 3,147 secondary schools and 8 State universities. Regarding human resources, in the same year 2012, the country had 84,867 teachers for primary schools, 79,943 secondary school teachers and 4,051 lecturers in its public universities; giving a ratio of about 53 students for each lecturer, 21 students for each secondary school teacher and 46 pupils for each primary school teacher (NIS, 2013). Table 1 and Table 2 show the GDP growth rate between 2013 and 2016 and GDP by sector between 2009 and 2014 (African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, 2015).

TABLE 1: MACROECONOMIC INDICATORS

Macroeconomic Indicators	2013	2014(e)	2015(f)	2016(f)
GDP Growth	5.5	5.3	5.4	5.5
Real Growth rate of GDP per Capital	3.0	2.8	2.9	3.0
Inflation	2.1	2.2	2.4	2.2
Fiscal Balance (% of GDP)	-4.1	-5.2	-6.4	-5.8
Current Account (% of GDP)	-3.8	-4.2	-4.3	-4.5

Source: National Data Administration; Estimates (e) and Forecast(f)

TABLE 2: GDP BY SECTOR (IN PERCENTAGE OF TOTAL GDP)

Sectors	2009	2014
Agriculture, Forestry, Fisheries and Hunting	23.5	22.7
Fishing	1.3	1.1
Extractive Activity	7.9	9.3
Crude Oil and Natural Gas Extraction	7.7	9.1
Manufacturing Activities	16.2	14.1
Production and Distribution of Electricity, Gas and Water	1.0	1.0
Construction	4.8	6.2
Wholesale and Retail: vehicles, automobile repair, Hotels and Restaurants	20.8	19.6
Hotels and Restaurants	----	------
Transport, Storage and Communication	6.5	6.9
Financial intermediation, Real Estate, Rentals and Activities of Service to Enterprises	10.4	10.9
Public Administration and Defence: Compulsory Social Security	8.3	8.1
Other Services	1.3	1.2
Gross Domestic Product at Basic Price/ Cost of Factors	100.0	100.0

Source: National Data Administration

The Republic of Cameroon fixed itself the objective to be an emerging country by the horizon of 2035. Documented as part of "Cameroon's vision 2035" (Ministry of Economy, Planning and Regional Development, 2014), the long term developmental plan is programmed on three periods; from 2010-2019, with the objective of modernizing the economy and growth acceleration with a projected growth rate of 5%. From 2020-2027, the objective is of attaining the level of countries with intermediate revenue, that is with a double digits' growth rate. The 3rd stage, from 2028-2035, has the objective of becoming an industrialized country with the secondary sector accounting for 40% of its GDP.

To become an emergent nation, the country aims to improve its growth rate to 5.5% and reduce formal unemployment from the current 75.5% to less than 50% by 2020. All these through the creation of thousands of formal employment positions per year for the next ten years and bring down the rate of monetary poverty from 39.9% in 2007 to 28.7% in 2020.

The current weak performance of the country's economy could be seen from 2013-2014 report of the WEF - World Economic Forum (Eteki, 2014), where Cameroon is ranked 115th out of 148 countries on competitiveness rating. Based on the World Economic Forum classification indices, the economy of Cameroon is classified to be at its first stage. A stage at which growth is brought about by the mobilization of factors of production with quality of labour being at the very lowest, revenue and of course low productivity. Looking at the global situation, where development and competition amongst economies is top on the agenda, Cameroon is forced to have a strong and competitive economy capable of gaining profit from international exchange and guarantee long term competition.

3.2. Position in the Global Economy and Competitiveness of Cameroon

The classification approach adopted by WEF is the one that has gained recognition (Eteki, 2014). This approach classifies countries based on the global quality of business environment with the data collected from the national bureau of statistics and from surveys on opinions conducted within countries. Based on the WEF report in 2013, Cameroon was ranked 115th out of 148 countries indicating a drop in three places relative to 2012, ranked in 112th. Other indicators make it possible to measure the level of competitiveness of a country relative to another.

World Bank publication "Doing Business" (Eteki, 2014) makes use of indices such as a quantitative evaluation of regulators geared towards creating business, construction permits, personnel recruitment, transfer of property, obtaining credit, protection of investors, payment of taxes, cross border trade, contract execution and closure of small businesses. Based on these indicators, Cameroon is ranked 161st out 185 countries.

From Eteki (2014), the Enabling Trade Index (ETI), a composite indicator used by the WEF, Cameroon was ranked 118th out of 132 in 2012, losing three places from the 2010 classification. In 2013, the Corruption Perception Index (CPI) of the Transparency International ranks Cameroon 144th out of 175, with Cameroon being one of the most corrupt countries in the world. The report on human development ranks Cameroon 150th out of 186 countries in 2012. On the Bertelsmann Transformation Index (BTI) on the changes in societal development in favour of democracy and the economy, Cameroon occupies the 98th position out of 129 countries in 2014.The Ibrahim index (BI) on good governance in Africa, geared towards promoting better governance in Africa in the areas of health, security, education, economic development, political rights, smooth transition of power. Cameroon occupies 35th position out of 52 countries in competition.

Looking at these rankings, it is significantly clear that the level of competitiveness of Cameroon is very weak and at this level guaranteeing sustainable development and becoming and emerging country by 2035, is a far-fetched dream.

From the point of view of certain economists, a nation being competitive could be seen from the macroeconomic standpoint, this is to say a country's balance of trade, how an economy imports and exports, and what share of the international market the economy holds (Fagerberg, 1988). A country becomes less competitive when its exportation reduces and its importation increases. For the case of Cameroon, the balance of trade has been falling indicating a weak performing economy (Eteki, 2014).

Following a survey carried out on 500 enterprises in Cameroon conducted in 2009, comprising small, medium and large scale indigenous enterprises (Eteki, 2014), it was reported that, power shortages, administrative bottlenecks, and difficult access to finances form the major obstacles leading to the poor competitive nature of enterprises in Cameroon. Insecurity, direct and indirect tax, dysfunctional judicial system, corruption and unhealthy competition are also part of these obstacles. The survey reports major constrains against the smooth functioning of businesses in Cameroon. By order of influence, include amongst others: taxes 58%, corruption 50%, access to credit 37%, administrative bottle necks 35.2%, unhealthy competition 25.8%, infrastructure 18.4% and finally interest rate 18%. One could also cite poor public–private partnerships, power shortage, transportation and dysfunctional justice system.

3.3. Innovation in Cameroon

In the last decades, new technologies, new industries and new economic models have been at the origin of the remarkable growth in productivity and balance of payment of nations (Rosenberg, 2004). Studies have shown that R&D accounted for innovation, in a strict sense. Innovation goes way above R&D and could be defined as bringing out a new product (goods or service) or new processes (improvements in the production), a new commercialization method or a new method of managing enterprises (work organization or external relations). This definition is inspired by Schumpeter (1934), to whom innovation is as a new combination of factors in the production process. This includes amongst others, new production techniques (process innovation), new needs for customers (product innovation), new sources of raw materials, new logistics and new ways of managing an organization. In other words, innovation is everything new which helps in improving a product or something new (OECD, 1997). Not limited to research labs and diverse experiments, the scope of innovation encompasses all, users, distributors and consumers; be it the government, the private sector or non-profit organization. It transcends boundaries, sectors and institutions. In the actual

context of international competition, innovation is placed in the heart of economic activities and it is fast becoming an instrument of economic policy for nations aspiring for prosperity and modernity.

In Cameroon the legislative and regulatory framework for the subsector of innovation is enshrined in the decree number 2012/393 of the 14th of September 2012. The sub-sector of innovation is under the control of the Ministry of Scientific Research and Innovation (MINRESI), a ministry responsible for putting in place and run government policies, when it comes to research and innovation.

Cameroon disposes of exploitable innovation potentials looking at the research results at stands presented in fairs organized at national and at regional levels (personal observation of the author). The database of experts and independent researchers is under construction at the Division for the Promotion and Support for Innovation (DPAI), and contains not less than 300 experts. This initiative could improve the level of value added to products and render the economy more competitiveness. Annual innovation reports from regions indicate potential waiting to be exploited and guided towards solutions on development problems of health and the fight against poverty.

Innovation is scarcely studied in Cameroon. A notable exception is presented in Safoulanitou et al. (2013) where SMEs located in the city Douala in Cameroon are compared with firms in Brazzaville and Kinshasa (Congo and Democratic Republic of the Congo). It relies for this on a survey of 256 SMEs and showed that Cameroon seems in a relative better position than its proximate neighbours. The statistical analysis of the data reveals that the main barriers to innovation are the high cost of innovation financing, the lack of funding, and lack of innovation financing system in the three countries. The dependence of Cameroonian SMEs technical progress made by their partners, the weight of barriers to entrepreneurship in the immediate environment of SMEs in Brazzaville and Kinshasa, also create a disincentive for innovation.

Most of innovation data already collected can help in showing the problems Cameroonians are facing and that these problems are in the agenda of public authorities, problems such a poor health, food, electricity, housing, climate change, and so on. Research in Cameroon has offered solutions but the problems reside in transferring these innovation results (Eteki, 2014). Most of these results are kept in drawers of government offices and are not put to contribution towards development. Generally speaking, only 10% of users of agro-pastoral and medicinal innovations results had access to innovation, though there has been a slight increase with actions from the MINRESI and its constituent departments.

As years are passing by the amount of budgetary allocation for MINRESI has been significantly reduced, so are finances allocated for innovation. The lack of an articulated national policy for innovation and poor financing is only weakening the practice of innovation research activities in Cameroon, hence the country's competitiveness is deteriorating. Budgetary allocation through MINRESI is way below 1% of the GDP of which a 10% budgetary increase will have a significant impact on the economy through innovation and research.

The nonexistence of a national strategic position or a R&I plan for Cameroon corroborates that the role of innovation is still downplayed in Cameroon's economy (Gaillard & Khelfaoui, 2007, Gaillard & Zink, 2003). For budgetary allocation to MINRESI and economic growth do not at all times reflect positively. In 2004, the budget allocation for the MINRESI stood at 6,052 million and growth was at 3.5% but in 2009, the budget was at 12,586 million but the country witnessed its lowest growth in the decade, 2.0%.

The administrative personnel at the DPAI is not yet fully prepared for innovation administration and this constitutes a great handicap for the setting up and carrying out of innovation policies. Some head of services at the DPAI have been dent for training institutions offering studies in innovation administration. This of course is a short term solution to this problem.

From Eteki (2014), a study carried out by the national institute of statistics of Cameroon in 2009 on employment and informal sector, the labour factor contributes 47% in production, innovation 31% and capital 22%. Also the same study on enterprises in Cameroon show that only around 11% of the heads of enterprises make use of results in R&I despite the efforts of the government to publicize these results. Going by the sectors of the economy; agriculture comes first with 76% amongst enterprises making use of research findings. Mining and extraction (30%), animal husbandry (29%), electricity, gas and water (21%), and finally food processing industries (17%) are other relevant sectors. The limited use of innovation results and findings by the enterprises explains the level of low productivity and weak competition in Cameroon and also the national economy as a whole. Worst of it, 89% of enterprises in Cameroon do not make use of innovation nor do even carry out any activity

in R&D within their organization, a situation that helps to explain the poor economic performance of the country in the international competition. It is a question of the country pushing enterprises to make more use of research results to improve their productivity and become competitive. For Cameroon to achieve its goals of becoming an emerging nation by 2035 it is of necessary importance to be competitive with products of higher value added and to do this, innovation is the most used path especially in this rapidly globalizing world.

3.4. Tourism and the Cameroon Regions

For those who visit Cameroon, the country is considered as *"all of Africa in a single country"* (Nzembayie & Kizito, 2009). The highly diverse cultural background with about 200 ethnic groups with over 233 languages coupled with an exceptional geological, ecological, and botanic potential, wild life in its natural form and varied climate conditions; all major characteristics that can be found in other countries in Africa.

The government of Cameroon as at 1974, under formal president Ahidjo set the tourism sector as having a special status, thereby creating the General Commissariat of Tourism and this body was reconstituted in 1975 to the General Delegation for Tourism with the main objective of encouraging private investment by airlines, hotels and travel agencies.

Tourism infrastructure has been improving steadily. In the 1960s the country had 37 hotels and 599 rooms on offer. This number rose to 203 hotels and 3,229 rooms in 1976. In 1980, the country had 7,500 hotel rooms, most of which were located in the then main cities of Douala and Yaoundé. Cameroon recorded 29,500 tourists visit by 1971, this number rose to 100,000 in 1975 and 130,000 in 1980, with visitors mostly from France, the United Kingdom and Canada. By 2013, the country was registering 912,000 visitors from all over the world with 54.1% by road, 43.6% by flight and finally 2.3% by water (NIS, 2013).

According to international reports on economic impact of travel and tourism (WTTC, 2015), Cameroon's Tourism sector total contribution to GDP stands at 6.2%, that is XAF 941.1bn and it is expected to grow by 3.7% to XAF 981.3bn (6.1% of GDP) by 2015. It is also forecasted to rise by 5.7% pa to XAF 1,713.5bn by 2025 (6.5% of GDP). This contribution includes wider effects from investments, the supply chain and induced income impacts.

Travel and tourism is expected to generate 124,000 jobs directly in 2014, that is 12.4% of total employment and it is forecasted to grow by 2.1 % in 2015 to 127,000 (2.4% of total employment). Forecasts also indicate an increase of 3.2% pa over the next ten years by 2025 that is about 174,000 direct jobs. Travel and tourism is expected to have attracted capital of XAF 83.4bn in 2014 with an expected rise by 5.5% in 2015 and a rise by 4.2 % pa over the next ten years to XAF 133.2bn in 2025.

Looking at different components of Travel and Tourism in Cameroon, leisure travel spending (inbound and domestic) generated 56.8% of direct Travel and Tourism contribution to GDP in 2014 (XAF 489.3bn) compared to 43.2% for business travel spending (XAF 350.0bn). Leisure travel spending is expected to grow by 7.9% in 2015 to XAF 495.6bn and rise by 6% pa to XAF 883.4% by 2025. Business travel spending is expected to grow by 5.4% in 2015 to XAF 368.8bn and rise by 5.7% pa to XAF 644.7bn by 2025.

4. METHODOLOGY

This study departs from the collection of data and other related information from secondary data sources such as the Ministry of Tourism and Leisure of Cameroon, Ministry of Economic Planning and Development of Cameroon and Cameroon's National Statistics Institute, other tourism related international organizations, the national statistical institutes, academic articles, papers and written documents, period briefs and policy documents. Based on the data available, the creation of specialisation indices was done taking into consideration the tourism resources; methods suggested by several authors, such as Pérez-Dacal et al. (2014), for measuring tourism specialisation.

A first step in the analysis was the creation of a measure of specialisation. Within the literature, we can find an array of indicators when it comes to capturing the essence of specialisation of a region in a sector or sectors within an economy. The lack of consensus in which type of indicator is best to use leads us as far as this work is concerned to adopt the calculation of simple location quotients, in order to understand the level or degree of specialisation of regions in Cameroon with specific reference to the tourism sector. With this index we intend to have relative measures of specialisation

in tourism resources. To provide a glimpse to smart specialisation we added also information regarding the training and innovation resources in the country and calculated indices following an analogous approach.

A second step regards the adaptation of cluster analysis in order to bring out a picture of how economic dynamics and activities are agglomerated within the constituent regions of Cameroon. A cluster analysis is a statistical method that gives an understanding into the specific relationships that do exist within elements in a cluster and between clusters. Cluster analysis is a technique of partitioning data set without prior information. It aids in the classification of elements into groups, in a way that elements belonging to a particular group are much similar to one another and rather different from objects belonging to the other groups (Pestana & Gageiro, 2014).

By doing this, we are able to ascertain the levels of or the roles each region can play in the tourism sector in Cameroon. We can see which region is a leading region, which regions are followers and which regions actually act as connectors in determining the dynamics occurring in the tourism industry in Cameroon, taking into consideration the types of regions that do exist and by looking at the types of tourism activity or activities they are specialized in. Cluster analysis could be seen as an inductive exploratory technique, as it brings out the possibility of uncovering structures without explaining the reasons for their existence. This will actually enable us to capture the dynamics taking place within the regional economies in Cameroon and then provide some policy implications to move the tourism sector and smart specialisation forward and make it more competitive both at regional and at national levels.

Data Collected at Regional Level

The data analysed refers to tourism resource data collected and assembled for NIS statistical yearbook on tourism resource stock found in all the ten regions of Cameroon (NIS, 2013). For index calculation purposes the available data on the tourism resources was then categorised in: Natural resources (Lakes, Waterfalls, Mountains and Hills, Caves, Rocks, Reserves, Beaches, Parks, Dams, Zoological gardens, Botanical gardens, Plantations); Cultural resources (Monuments, Artistry and Markets, Chiefdoms and Sultanates, Ranches, Bridges, Mine reserves, Camps, Climatic centres, Architectural remains, Others); and Secondary resources (Hotels, Restaurants, Leisure, Travelling agencies). In the absence of the adequate data at regional level for capturing other innovation-related dimensions, we used data on professional training (NIS, 2013) to understand the relative human capital potential for a smart specialisation strategy based in knowledge applied to the economic development. We also used the data from innovation per types in the report "*La competitivite des entreprises*" (Eteki, 2014) and information about the public and private higher education institutions in Cameroon in 2014 (MINESUP, 2014).

5. RESULTS

Geographies of Specialisation in Cameroon

The simple comparison of absolute data does not permit an in-depth understanding of the typologies and degrees of specialisation in the regions of Cameroon. Hence it is of importance to map out the specialisation of the regions of Cameroon so as to give proper and better understanding of how resources are distributed and the way or role each region plays in this sector of activities.

Because the 10 regions of Cameroon vary in dimension, we created the indices taking into consideration land size and population size. After several comparisons, achieving consistent results, we decided to present the results of the study using the land size to create relative measures of the concentration of tourism, training and innovation resources in the analysed regions.

The calculation of the specialisation index is done in this way: the value of the degree of specialisation of a region in particular activity is obtained by subtracting the national minimum value of that activity from the value of the region and then divided by the maximum value after subtracting the minimum value. The scores varies from 0 to 1; being that the closer the calculated score is to the reference number of 1, higher the degree of specialisation of the region in a particular resource. The results are presented in the table 3 below.

Regions	Natural resources	Cultural resources	Secondary resources	Training	Innovation	Higher Education
Adamawa	0.50	0.62	0.55	0.24	0.00	0.34
Centre	0.09	0.16	0.47	0.45	0.21	0.83
East	0.47	0.40	0.30	0.43	0.25	0.06
E. North	0.07	0.18	0.03	0.01	0.16	0.08
Littoral	0.05	0.14	0.77	0.65	0.10	0.45
North	0.10	0.08	0.11	0.38	0.11	0.11
N. West	0.10	0.11	0.19	0.40	0.65	0.33
West	0.18	0.23	0.17	0.41	0.48	0.29
South	0.52	0.37	0.56	0.61	0.26	0.44
S. West	0.48	0.32	0.15	0.64	0.40	0.75

Source: Own elaboration

Using the above specialisation measures, the study performs a hierarchical cluster analysis (method Wards, measure Squared Euclidian distance) with the data that summarizes the index calculation of resources by territorial dimension. Based in the rescaled distance we have decided to retain the option of a structure of four clusters: the Adamawa, East and South regions will be in cluster 1. Centre and Littoral will be in cluster two. East North and North will belong to cluster 3. North West and West will be in cluster four while South West will be in cluster 4. The descriptive statistics by cluster are presented in table 4.

TABLE 4: DESCRIPTIVE STATISTICS OF THE VARIABLES BY CLUSTER

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
Natural resources	1	3	0.4967	0.02517	0.01453	0.4342	0.5592	0.47	0.52
	2	2	0.0700	0.02828	0.02000	-0.1841	0.3241	0.05	0.09
	3	2	0.0850	0.02121	0.01500	-0.1056	0.2756	0.07	0.10
	4	3	0.2533	0.20033	0.11566	-0.2443	0.7510	0.10	0.48
	Total	10	0.2560	0.20662	0.06534	0.1082	0.4038	0.05	0.52
Cultural resources	1	3	0.4633	0.13650	0.07881	0.1242	0.8024	0.37	0.62
	2	2	0.1500	0.01414	0.01000	0.0229	0.2771	0.14	0.16
	3	2	0.1300	0.07071	0.05000	-0.5053	0.7653	0.08	0.18
	4	3	0.2200	0.10536	0.06083	-0.0417	0.4817	0.11	0.32
	Total	10	0.2610	0.16716	0.05286	0.1414	0.3806	0.08	0.62
Secondary resources	1	3	0.4700	0.14731	0.08505	0.1041	0.8359	0.30	0.56
	2	2	0.6200	0.21213	0.15000	-1.2859	2.5259	0.47	0.77
	3	2	0.0700	0.05657	0.04000	-0.4382	0.5782	0.03	0.11
	4	3	0.1700	0.02000	0.01155	0.1203	0.2197	0.15	0.19
	Total	10	0.3300	0.24299	0.07684	0.1562	0.5038	0.03	0.77
Training	1	3	0.4267	0.18502	0.10682	-0.0330	0.8863	0.24	0.61
	2	2	0.5500	0.14142	0.10000	-0.7206	1.8206	0.45	0.65
	3	2	0.1950	0.26163	0.18500	-2.1556	2.5456	0.01	0.38
	4	3	0.4833	0.13577	0.07839	0.1461	0.8206	0.40	0.64

	Total	10	0.4220	0.19464	0.06155	0.2828	0.5612	0.01	0.65
Innovation	1	3	0.1700	0.14731	0.08505	-0.1959	0.5359	0.00	0.26
	2	2	0.1550	0.07778	0.05500	-0.5438	0.8538	0.10	0.21
	3	2	0.1350	0.03536	0.02500	-0.1827	0.4527	0.11	0.16
	4	3	0.5100	0.12767	0.07371	0.1928	0.8272	0.40	0.65
	Total	10	0.2620	0.19674	0.06221	0.1213	0.4027	0.00	0.65
Higher Education	1	3	0.2800	0.19698	0.11372	-0.2093	0.7693	0.06	0.44
	2	2	0.6400	0.26870	0.19000	-1.7742	3.0542	0.45	0.83
	3	2	0.0950	0.02121	0.01500	-0.0956	0.2856	0.08	0.11
	4	3	0.4567	0.25482	0.14712	-0.1763	1.0897	0.29	0.75
	Total	10	0.3680	0.26330	0.08326	0.1796	0.5564	0.06	0.83

Source: Own elaboration.

Cluster 1: Adamawa, East, South
Cluster 2: Centre, Littoral
Cluster 3: E. North, North
Cluster 4: N. West, West, S. West

Based in these results we can name the clusters as the following (Figure 1). The cluster 1, painted in dark grey, regards the "Cameroon tourism wonders". It is constituted by the regions that are very strong in Natural and Cultural resources, includes the regions of Adamawa, East, and South. These are the regions that have very high potentials in Natural and Cultural resources, some strength in training and secondary resources but weak in innovation.

The cluster 2, painted in medium grey, regards the "Dynamic economic centres". These are the regions that are very strong in Training, Secondary, and Higher Education resources. It includes the regions of Centre, and Littoral. These regions are average in terms of Innovation and Cultural resources but weak in Natural resources.

The cluster 3, painted in black, regards the "Subsistence regions". It is a cluster that is weak in overall terms. It includes the most worrying cases in terms of under-development and distance to contemporary socioeconomic standards. It includes the regions of Extreme North, and North. These are the regions that are relatively better in Natural resources to the regions in Cluster 2, which are the weakest when it comes to this type of resources.

The cluster 4, painted in light grey, regards the "Innovative (and English speaking) regions", includes the regions North West, West, South West. These are the regions that have high innovative capacities and are also strong in Higher Education, Training, Cultural, and Natural resources but are in Secondary resources.

FIGURE 1: REGIONAL CLUSTERS IN CAMEROON

1 Cameroon tourism wonders
2 Dynamic economic centres
3 Subsistence regions
4 Innovative (and English speaking) regions
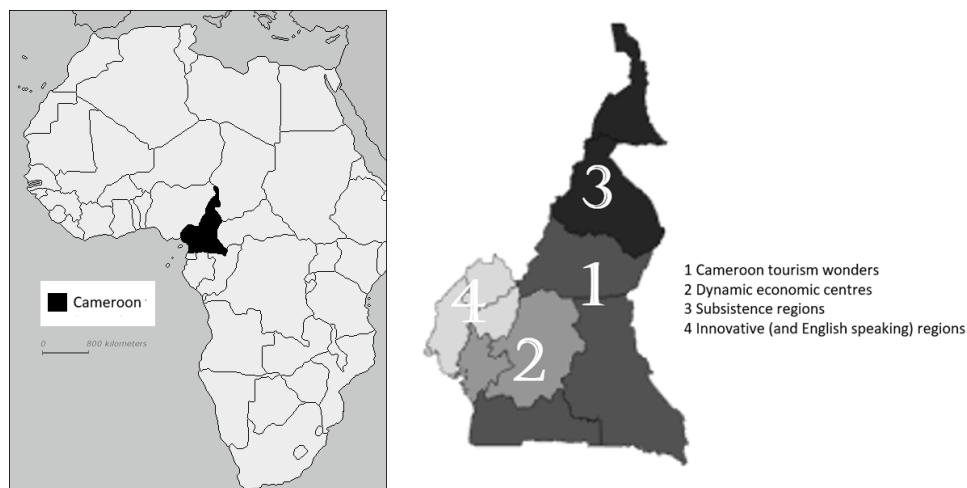
Source: Own elaboration

The Kruskal-Wallis, table 5, can be used as a non-parametric test, similar to ANOVA, to overcome the problems of heterogeneity of variance among groups, presented in this small sample.

TABLE 5: NON-PARAMETRIC TEST (KRUSKAL-WALLIS)

	Natural resources	Cultural resources	Secondary resources	Training	Innovation	Higher Education
Chi-Square	7.248	6.327	7.727	4.727	5.982	4.945
Df	3	3	3	3	3	3
Asymp. Sig.	0.064	0.097	0.052	0.193	0.112	0.176

Source: Own elaboration.

In this test we do not reject null hypotheses of equal medians in Cultural Resources, Training, Innovation and Higher Education. This may indicate that variability of potential is much more substantive in tourism natural and secondary resources than in the other aspects across the territory.

The results highlight that the regions of Cameroon have differences between them. These regional specificities emphasize the importance of implementing regional development strategies that obey the country's guidelines and vision, but taking into account the regional path dependencies and their endogenous resources and anchor sectors. The design of a smart specialisation strategy that understand these specificities could allow the sedimentation of these sectors, maximize the value of these resources and leverage emerging sectors that can represent competitive advantages and added value, in order to maximize the economic and social structure of the regions and from the country.

6. CONCLUSION

This study was focused on looking at 'smart specialisation' as a useful concept for the growth of Cameroon. Smart specialisation is a developmental concept that is geared towards bringing about structural change by advocating the use of existing potential of endogenous resources combined with research and innovation. It requires regions to focus their resources on activities where they are suited or already performing well.

A smart specialisation strategy is a policy that jeers towards building on local strength, competitive advantages and potentials for excellence, as well as being able to support technological practiced-based innovation and stimulate private sector investment.

Through these policy tools regions are encouraged to invest in priorities where they have the resources to develop distinctive and original ideas; not only by imitating other successful regions but focussing on areas which they have unique potential to advance and compete. Regions and countries are expected to carry out a serious assessment of their knowledge, assets, capabilities and competencies and those involved on the process of knowledge transfer.

The tourism sector was brought-in in connection with smart specialisation as a means to get an in-depth understanding of how a possible strategy could be initiated and applied in a context with huge resource limitations. Tourism is an activity, because of its dynamics, that can create demands and instigate development. Tourism may also stimulate the emergence of clusters as groups of interconnected companies and associated institutions anchored in tourism and related domains, linked by commodities and complementarities in a geographical space, to enable knowledge diffusion and help put these entities in advantage when it comes to competition.

The article focussed on looking at possible areas of specialisation for the ten regions of Cameroon. An in-depth look was given into the tourism resources of Cameroon from a regional perspective. Innovation was also part of the discussion, Cameroon's framework for innovation, potentials to innovate, setbacks to innovation and competitiveness.

Smart specialisation in a developing country such as Cameroon can be a major driving force in improving the current infrastructure, aligning interests, and spreading economic activities but needs to be directly associated to economic activities that have expression in regional terms, stimulating related variety, and not being limited to efforts in STI where the country will necessarily fall behind.

As when this nation and their regions specialize in particular tourism products they should combine it with inputs from other institutions, government and universities. These regions are bound to have a competitive edge over others, thanks to information flows within available clusters found.

Results from this analysis were based in specialisation indices. Centre, Littoral, South West, West and Western regions have stronger performances in all dimensions. They are the regions that have more potential to develop tourism in articulation with training competencies looking at their general mean scores from the analysis. We would propose that development of tourism activities in each region should be carried taking into consideration the type of tourism resources and infrastructures available.

These indices were further used to develop tourism clusters taking into consideration the tourism resources each region has and also its territorial dimension relative to the trained population of each region. Based on the output of the cluster analysis, we finally decided to retain the option of selecting four clusters. As a result, and taking into consideration the tourism potential by territorial dimension, training and innovation capacity: The Adamawa, East, and South will fall in cluster 1 "Cameroon tourism wonders"; the Centre and Littoral in cluster 2 "Dynamic economic centres"; the Extreme North and North in cluster 3 "Subsistence regions", and finally the North West, West and South West regions in cluster 4 "Innovative (and English speaking) regions".

Different policies and priorities should be put into practice. While tourism is essential for cluster 1 regions, the advanced industrial fabric is concentrated in cluster 2 and highly innovative potential also in cluster 4. Cluster 3 regions face big problems because of very limited resources in the analysed dimensions. The subsistence character of its economy needs to be properly addressed or these territories will be pushed way from any real possibilities of growth and prosperity.

This work was heavily constrained by the lack of comprehensive data and limited literature on the subject, smart specialisation in tourism and in Cameroon in particular. More and better data and additional research into this topic, especially in the smart specialisation strategies in the tourism sector in developing countries is necessary.

On the part of governmental institutions, the benefit of implementing smart specialisation as a strategic policy tool that takes into consideration the regional potential is huge. It is a policy solution geared towards enhancing the already existing resources particularly suited for already leading regions high competitive advantages. In developing regions it may create new tensions even if in aggregated terms it would probably be very beneficial to Cameroon or other African countries in similar situations. To conclude, a reflexive note. The tourism of most African countries is a resource-based sector. As a resource-based sector, there is the need for governments to promote training of its citizenry and innovation for there to be proper utilization of these tourism resources. Only in this way tourism development will promote a sustainable economic development.

REFERENCES

African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme (2014). African Economic Outlook 2014 Global Value Chains and Africa's Industrialisation. Available at http://www.africaneconomicoutlook.org/en/telechargements. (Accessed 14th July 2016).

African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme (2015). African Economic Outlook 2015 Regional Development and Spatial Inclusion. Available at http://www.africaneconomicoutlook.org/en/telechargements. (Accessed 14th July 2016).

Barca, F. (2009). *An Agenda for a Reformed Cohesion Policy: A Place-Based Approach to Meeting European Union Challenges and Expectations*. Independent report prepared at the request of the European Commissioner for Regional Policy, Danuta Hübner. European Commission, Brussels.

Barroeta, B., Gómez Prieto, J., Paton, J. & Palazuelos, M. (2017) *Innovation and Regional Specialisation in Latin America: Identifying conceptual relations with the EU Smart Specialisation approach*, S3 Working Paper Series, EUR 28511 EN, doi: 10.2760/906206

Bonaccorsi, A., Cappiello, F., & Molinari, F. (2011). *The Challenges of Bringing Innovation through Public Procurement at Regional Level. Early Experiments in Italy*. In UNDERPINN Conference (22-23 March 2012).

Bonaccorsi, A., Cenys, A., Chorafakis, G., Cooke, P., Foray, D., Giannitsis, A., Harrison, M., Kyriakou, M.& Keith Smith (2009). *The Question of R&D Specialisation: Perspectives and Policy Implications*, JRC Working Papers JRC51665, Directorate Growth & Innovation and JRC-Seville, Joint Research Centre. Available at http://ftp.jrc.es/EURdoc/JRC51665.pdf (Accessed on November 10, 2015).

Butler R.W. (2011). *Tourism Area Life Circle. Contemporary Tourism Reviews*. Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ.

CCDR Algarve (2014). *Estratégia de Especialização Inteligente RIS3 Algarve*. Faro: Comissão de Coordenação e Desenvolvimento do Algarve. Available at: http://poalgarve21.ccdr-alg.pt/site/sites/poalgarve21.ccdr-alg.pt/files/2014-2020/ris3_algarve_2014-2020_pt_v10.5_8_2_2015_verfinal.pdf (Accessed on July 12, 2016).

Cooke, P; Pinto H & Cruz AR. (2015). "Implementing doing-using-interacting regional innovation policies: smart specialisation in a tourism-based region" in Pinto, H (Ed.) "*Resilient territories: Innovation and Creativity for new modes for Regional Governance*", Cambridge Scholars Publishing, Newcastle upon Tyne.

Cornwall & Isles of Scilly (2013). *Cornwall & Isles of Scilly Smart Specialisation Framework Summary,* Local Enterprise Partnership. Available at http://www.cioslep.com/assets/file/Annex%204%20Smart%20Specialisation%20Framework%20summary.pdf. (Accessed June 8th 2014).

Eteki, E (2014). *La Competitivite Des Entreprises Camerounaise Par L'Innovation.* Available at: www.francophonieinnovation.org (Accessed June 8th 2016).

Fagerberg, J. (1988). International Competitiveness. *The Economic Journal,* 98, 391, 355-374.

Foray, D., David, P. A., & Hall, B. H. (2009) *Smart specialisation- the concept*. Regional economists' policy briefs, June 2009, No 9. Available at: http://ec.europa.eu/invest-in-research/pdf/download_en/kfg_policy_brief_no9.pdf. (Accessed June 8th 2016).

Foray, D., David, P. A., & Hall, B. H. (2011). Smart specialisation from academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation. *Management of Technology & Entrepreneurship Institute* working paper 2011-001. Available at: https://infoscience.epfl.ch/record/170252/files/MTEI-WP-2011-001-Foray_David_Hall.pdf (Accessed June 8th 2016).

Frenken, K., Frank, V. & Thijs, V. (2007). Related variety, unrelated variety and regional economic growth. *Regional studies*, 41(5,), 685-697.

Gaillard, J. & Khelfaoui, H. (2007). The Republic of Cameroon: Meta Review on Research Systems in sub-Sahara Africa, CREST/IRD/UNESCO Forum for Higher Education, *Research and Knowledge*.

Gaillard, J. & Zink, E. (2003). *Scientific research capacity in Cameroon: an assessment of IFS support.* Stockholm: International Foundation for Science, MESIA Impact Studies. Report N°5, 72 pages, Available at: www.ifs.se. (Accessed June 8th 2016).

Glaeser, E., Kallal, H., Scheinkman, J. & Shleifer, A. (1992). Growth in Cities, Journal of Political Economy, *University of Chicago Press*, 100(6), 1126-52.

IMF (2010). *Cameroon: Poverty reduction strategy paper*, International Monetary Fund. Available at: https://www.imf.org/external/pubs/ft/scr/2010/cr10257.pdf. (Accessed June 8th 2016).

Jackson, J. & Murphy, P. (2002): "Tourism Destinations as Clusters: Analytical Experiences from The New World", *Tourism and Hospitality Research*, Vol.4, Nº 1, 36-52.

Jackson, J., Houghton, M., Russell, R., & Triandos, P. (2005). Innovations in measuring economic impacts of regional festivals: A do-it-yourself kit. Journal of Travel Research, 43(4), 360-367.

Jacobs, J. (1969). *The economy of cities*. Vintage, New York.

Kimbu, Albert N. (2010). *The Challenges of Marketing Tourism Destinations in the Central African Sub region*: The Cameroon Example.

Krugman, P. & Obstfeld, M. (1988). *International Economics: Theory and Policy*. (2008 edition). New York: Prentice Hall.

Marinelli, E., Elena-Perez, S. & Alias, J. (2016). *Universities and RIS3: the case of Catalonia and the RIS3CAT Communities,* Smart Specialisation Policy Brief No. 18/2016; EUR 27893 EN; doi:10.2791/444386.

McCann, P. & Ortega-Argilés, R. (2015). Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy, *Regional, Studies*, 49:8, 1291-1302.

Midtkandal, I & Sörvik, J. (2012). *What is Smart Specialisation?* Available at: http: //www.nordregio.se/en/Metameny/Nordregio-News/2012/Smart Specialisation/Context/. (Accessed June 8th 2014).

MINESUP (2014). L'Enseignement superieur au Cameroun: Cartographie 2014 des institutions.

Ministry of Economy, Planning and Regional Development (2014). *Cameroon's vision 2035, Republic of Cameroon,* Available at: http://www.cameroonembassyusa.org/docs/webdocs/cameroon_vision_2035_english_version.pdf (Accessed July 15, 2016).

MINTOUR (nd). Institutional website of the Ministry of Tourism of the Republic of Cameroon. Available at: http://www.mintour.gov.cm/en/ (Accessed on 16th July 2016).

NIS (2013). *Annuaire Statistique du Cameroun*. Cameroon Department of Statistics and National Accounts. Available at: http://www.stat.cm/downloads/annuaire/2013/Annuaire_statistique_2013.pdf (Accessed July 15, 2016).

Nunes, S. & Raul Lopes (2015) Firm Performance, Innovation Modes and Territorial Embeddedness. *European Planning Studies*, 23(9), 1796-1826.

Nzembayie, M. & Kizito, F. (2009) *Cameroon in Brief*. Available at http://cameroon-tour.com/. (Accessed on November 3, 2015)

OECD (1997). *Oslo manual: proposed guidelines for collecting and interpreting technological innovation data*. Statistical Office of the European Communities and OECD Publishing.

OECD, P. (2013). *Innovation-driven Growth in Regions: The Role of Smart Specialisation*.

Palan, N. (2010). *Measurement of Specialisation – The Choice of Indices*. FWI Working Paper No. 62, Available at: http://www.fiw.ac.at/fileadmin/Documents/Publikationen/Working_Paper/N_062-Palan.pdf (Accessed on November 3, 2015).

Pérez-Dacal, D; Pena-Boquete, Yolanda; & Fernández, M. (2014). A Measuring Tourism Specialization: a Composite Indicator for the Spanish Regions. Almatourism - *Journal of Tourism, Culture and Territorial Development,* v. 5, n. 9, 35-73.

Pessoa, A. (2016) Smart specialization in the EU: RIS3 conditionality, innovation and cohesion. Papers in *Regional Science*, 95: 439. doi: 10.1111/pirs.12201.

Pestana, M.H. & J.N. Gageiro (2014). *Análise de Dados para Ciências Sociais: A complementaridade do SPSS*, 6th edition, Lisboa, Edições Sílabo.

Pinto, Hugo (2016). Science, technology and innovation and public policy in Portugal: Trajectories towards 2020. *Public Policy Portuguese Journal*, v. 1, n.1, 94-106.

Romão, J., Guerreiro, J., & Rodrigues, P. M. (2013). "Territorial Differentiation, Competitiveness and Sustainability of Tourism". In Matias, A., Nijkamp, P. & Manuela Sarmento (Ed.) *Quantitative Methods in Tourism Economics* (pp. 271-285). Physica-Verlag HD.

Rosenberg, N. (2004). *Innovation and Economic Growth*. Available at https://www.oecd.org/cfe/tourism/34267902.pdf (Accessed on November 10, 2015).

Safoulanitou, N., Zamo-Akono, C. & Xavier Bitemo Ndiwulu (2013) *PME et Innovation: une analyse comparative entre le Cameroun,* le Congo et la RDC, Rapport de Recherche du FR-CIEA N° 67/13, Fonds de Recherche sur le Climat d'Investissement et l'Environnement des Affaires (FR-CIEA). available at: www.trustafrica.org/icbe. (Accessed on 10th July 2016).

Santos, C., Almeida, A. & Teixeira, A. (2008). *Searching for clusters in tourism. A quantitative methodological proposal,* FEP Working Papers 293, Universidade do Porto, Faculdade de Economia do Porto.

Schumpeter, J.A., (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, translated from the German by Redvers Opie, 2008 edition, New Brunswick (USA) and London (UK): Transaction Publishers.

Sequeira, T. & Nunes, P. (2008). Does tourism influence economic growth? A dynamic panel data approach. *Applied Economics*, 40(18), 2431-2441.

Van Oort, F. G. (2004). *Urban growth and innovation: Spatially bounded externalities in the Netherlands*. Gower Publishing, Ltd.

WTTC (2015). *Cameroon. Country report - Travel and Tourism: Economic Impact 2015*. Available at: https://www.wttc.org/-/media/files/reports/economic%20impact%20research/countries%202015/cameroon2015.pdf, (Accessed on 10th July 2016).

Smart timing and specialised spaces: Reflections on the implementation of smart specialisation strategies in Milan and Brussels

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ABSTRACT

The EU initiative for "Smart Specialisation Strategies" (S3) is animating the policy debate thanks to an interesting and innovative approach. However, this rapid success has left some mismatches from theory to practice that have emerged after the first round of implementation, and related considerations. To reflect on the S3 notion, we discuss the cases of Milan and Brussels which, in our view, question relevant theoretical elements: two advanced urban areas with entirely different institutional and spatial settings facing structural challenges and significant opportunities to keep a high level of competitiveness. This article aims to compare these two cases around four analytical dimensions: the multi-scale aspect of issues addressed; the relationships between the urban core and the surrounding areas; the possibility to govern the structural changes in the economy leading to jobs creation; and the capacity to locally embed economic development. We conclude arguing that time and space are fundamental variables to understand the dynamics leading to a 'successful' S3 implementation regarding the replicability of experiences associated to the scale of intervention, the long-term effects and risk-taking attitudes.

Keywords: Smart Specialisation, Milan, Brussels, Implementation, City-Region.
JEL classification: O38, R10, R58

1. INTRODUCTION

The EU Policy for "Smart Specialisation Strategies" (S3) is animating the policy debate thanks to an innovative and partly new approach to research and innovation (R&I) policy (Foray et al., 2009; McCann and Ortega-Argilés, 2015). According to the European Commission (EC)'s official guide, S3 is defined as follow: "integrated, place-based economic transformation agendas that: focus policy

support and investments on key national/regional priorities, challenges and needs for knowledge-based development, including ICT-related measures; build on each country/region's competitive advantages and potential for excellence; support technological as well as practice-based innovation; get stakeholders fully involved and encourage innovation and experimentation; are evidence-based and include sound monitoring and evaluation systems"(Foray et al. 2012).

Despite the emphasis put by the EC in defining the new agenda and the operational steps for its implementation, when moving from theory to practice many issues are still open. The key scholars advocating for S3 and the EC itself have worked to address these ambiguities (e.g. Gianelle et al., 2016), but policymakers across European regions and cities were not always able to adequately interpret the S3. The S3 approach requires operationalising a number of new concepts recently established in the literature but with limited applications in policy practices such as cross-sectorial hybridisation, technology platform, related variety, open innovation and user-centred innovation. For this purpose, the EC has invested significant resources in creating an S3 platform sharing experiences and promoting mutual learning across managing authorities and stakeholders. In some cases, however, these new ideas overlapped with old ones, both semantically and content-wise, generating confusion and uncertainty theoretically and, even more, for practical implementation. The S3 toolbox was voluntarily maintained open and flexible by the EC to favour the design of place-based policies acknowledging differences across European regions. However, this made the concrete delineation of its components and modes of delivery problematic (Asheim, 2013; Capello and Kroll, 2016; Foray, 2015; Kroll, 2015; McCann and Ortega-Argilés, 2016; Morgan, 2017). Nevertheless, this 'confusion' is in our view a fertile ground to reflect on the implications of applying this innovative theoretical approach providing feedback for both academics and policymakers.

The first challenge to discuss the S3 experience is to put into its broader context. The goal of transforming European regions into more innovative places and promoting diversification through new path development can hardly rely on S3 alone but requires alignment with other policies and strategies at various spatial scales. Undoubtedly, the dialogue between the EC and the national and regional managing authorities has dominated the S3 experience. In some countries, one may even suggest that S3 proved to be functional to re-legitimise the weakened role of meso-governments, like regions, on a crucial issue for economic development and resilience (for the case of Italy, see Bellini, 2013; Dotti and Bubbico, 2014). Looking back at the original expectations, the S3 was supposed to be a multi-scalar challenge in which a substantial role should be played by the sub-regional level as it is essential to capture evolving and place-specific needs (Morgan, 2017). This local dimension aims to avoid the risks of imposing a centralised vision, yet it may concern a variety of situations: as an example, rural spaces can provide the context for innovations concerning the environment, agri-food industries or tourism. However, cities would need specific attention as the vanguard of today's societal challenges and privileged testing ground and incubators of a wide range of innovation from technological and market-oriented ones to policy practices (Borrás and Jordana, 2016; Camagni, 2002). Cities were the obvious candidates to be the 'engines of S3' for a vast majority of European regions because they can better identify the most suitable areas for specialisation, capitalise on their unique eco-systems, mobilise their assets, resources and individuals to target their efforts. Besides, cities can create their own networks and partnerships for innovation regardless the region in which they are located (Camagni, 1991; Derudder et al., 2010). By reinvigorating the business-led economic development urban agenda, the S3 might produce intra-regional polarisation in favour of the urban core. Even though the overall balance might be positive for the region, the increasing disparities within the region question the relationship between the urban core and the surrounding areas, back to the well-known trade-off between equity and efficiency (e.g. Dall'Erba and Hewings, 2003; Pike et al., 2007). The S3 can help turning cities into innovation drivers and developing dense polycentric networks of demonstrators across the whole Europe around emerging strategic themes/sectors (e.g. smart mobility systems, energy efficiency solutions, 'circular economy' models) that are expected to offer broad business and job opportunities in the years to come. Yet, this questions the relationship between cities and the rest of their regions, and the European principle of territorial cohesion.

Within this framework, we discuss the S3 approach by comparing its deployment in the cases of Milan and Brussels. The discussion will focus on four analytical dimensions that, in our view, were under-considered in the first round of reflections on the implementation of the S3; whereas, these aspects aim to enrich and further the debate reinforcing the S3 policy implementation. First, the multiscale approach of the S3 questions the different institutional settings, which are unique to each country. The second dimension on the city-region relationship is strongly related to the first one

because managing authorities in charge of the S3 have different spatiality. For instance, Brussels is a city-region with vast competences but spatially locked within Flanders, though the metropolitan area goes even beyond including parts of Wallonia; while, Milan is just a municipality with limited competencies embedded in the broader regional context of Lombardy (an Italian region having about the size of the whole Belgium). Third, one of the objectives of the S3 is the creation of tomorrow's jobs that opens the theoretical and forward-looking challenge on which one will be located in the urban cores. Finally, the fourth dimension refers to the embeddedment of economic development in cities: what will come after the S3? The S3 approach is an opportunity for a forward-looking exercise and investment supporting territorial competitiveness. More theoretically, this refers to the challenge of embedding economic development in territories in a more and more globalised world.

The article is structured as follow. Section 2 revises the debate on the first experiences of implementation of the S3 agenda across the EU. In Section 3, four analytical dimensions, which in our view are missing from this debate, are proposed to move forward the theoretical discussion. Sections 4 and 5 present the cases of Milan and Brussels, respectively. Some general reflections comparing the two cities are presented in Section 6. Section 7 concludes.

2. THE DEBATE ON THE FIRST EXPERIENCES OF SMART SPECIALISATION

The S3 requirements have significantly challenged established R&I policy practices (for a review, see Bonaccorsi, 2009). Since its launch, a first generation of scientific assessments of the S3 experience was carried out in the attempt to investigate the on-going practices across the EU. Even though assessment exercises came late concerning the advancements made by the practice, these have already identified a series of significant strengths and weaknesses of this new policy approach. Most of the works developed during the early implementation phase (approximately between 2012 and 2016) suggest that despite the important efforts put in place by the EC, the S3 agenda still presents some difficulties potentially hampering its successful deployment. These are due to the ambiguous use of concepts (and slogans), such as entrepreneurial discovery, and the very idea of specialisation that were open to diverging interpretations when moving to practice.

Acknowledging that this is a strong simplification to address a sophisticated debate, the primary interest for the S3 method is the notion of 'entrepreneurial discovery process' (EDP). According to the authors who first formulated it, the EDP is an entrepreneurial-driven process emphasising the idea of 'discovery' to identify the specialisations that best fit the innovation potentials of each territory (Asheim, 2013; Foray, 2015; Foray et al., 2009; McCann and Ortega-Argilés, 2015). As pointed out by Kemeny and Storper (2015), the notion of specialisation might be conceived as absolute or relative. Absolute specialisation refers to the case of a city or region 'specialised' in one (or few) industries; whereas, relative specialisation refers to a city or region having many industries, of which some of them are stronger in comparison to other cities and regions (see also Dotti and Spithoven, 2017a). Furthermore, the scientific debate has recently put forward the notion of 'related variety' arguing that the hybridisation across 'related' industries is crucial to promote innovation (Content and Frenken, 2016; Frenken et al., 2007): industries that are too close or too far are unlikely to promote cross-fertilisation leading to innovation (see also Boschma, 2005). In the S3 framework, specialisation is intended as the identification of priorities that are tailored to regional assets, stressing the necessity to bring together different but 'related' activities, specialising and particularising in this sense a region's economy (Asheim et al., 2011; Foray, 2015). Clearly, this refers to the idea of related variety, though a superficial reading of these concepts might find a contradiction between the used labels of specialisation and variety. The goal is to promote competitive positioning in the global value chains that can lead to exploring new market or technology opportunities. However, the implementation has often reduced this to specialisation in given statistical industries (e.g. NACE codes), somehow oversimplifying the original rationale, which is expected to be also related to the size of the region/city.

What emerges from the first assessment exercises is that the EU agenda is neither a radical revolution (see the notion of policy paradigm shift as in Hall, 1993) nor the solution to all the inefficiencies affecting the European regional and urban policy, especially regarding absorption and implementation in past programming periods. Both optimists and sceptics acknowledge the uncertainties regarding the modalities by which the EDP should be implemented and, within it, the difficulties of priority setting and policy mix definition. The result of these difficulties seems evident in the design of strategies that might be affected by, among others, an excessive number of selected

domains, a lack of critical mass and a tendency to replicate priorities that are considered strategic at the national or global level (Capello and Kroll, 2016; McCann and Ortega-Argilés, 2015; OECD, 2013). These problems harm the likelihood of promoting related variety around existing local specialisations. Furthermore, the low vertical dialogue and exchange with the EU level due to difficulties in managing the complexities of the multilevel governance coordination mechanisms and little attention to potential synergies with other EU regions were also identified as common weaknesses (Kroll, 2015). Besides, the main merit of S3 lies in the improvement of consultation and governance practices (Polverari, 2017). The introduction of the new agenda is forcing public authorities to make policy-making processes more explicit and based on concrete evidence, and nurtured by the involvement of a broader array of stakeholders than in previous planning routines. Significant gains are registered regarding communication and coordination suggesting that S3 is potentially a good catalyst able to facilitate knowledge exchanges and contaminations between actors and organisations, as well as generating policy learning benefits in policy fields that are often complex to be managed (Kroll, 2015; Uyarra and Flanagan, 2010).

3. AN ANALYTICAL FRAMEWORK TO MOVE FORWARD THE DEBATE

Within the early debate on the S3, we have identified four relevant dimensions to be discussed: namely, the spatial scale of intervention, the institutional framework for implementation, the challenge of creating tomorrow's job and the capacity to embed these dynamics locally.

First, the scale of implementation for the S3 was left open to be applied to the different European settings with some soft references to multi-scalar coordination. However, transforming EU regions into more innovative places and promoting diversification through new path development can hardly rely on S3 alone. On the contrary, it requires alignment with other policies and strategies at various spatial scales. The need for multi-level governance for territorial development is determined by the complex institutional settings of the European regional and urban policy and, in general, of the EU (Bachtler and McMaster, 2008; Bachtler and Mendez, 2007; Dotti, 2016, 2013; Green and Orton, 2012; Hooghe and Marks, 2003). In fact, the implementation of S3 concerns a variety of situations from rural areas to urban/metropolitan areas, from very small to large regions. Cities are the obvious candidates to be engines of S3 for a large majority of European regions (cf. Florida et al., 2017; Iammarino, 2005; Moulaert and Sekia, 2003), but they are rarely in charge of R&I policy and, in general, have limited competences and resource for economic policy. Under the ongoing programming period, the EU has made available a significant toolbox to activate and support urban policies such as the Urban Innovative Action (UIA), the URBACT cooperation programme, the European Urban Agenda and the European Innovation Partnership on Smart Cities and Communities. Though, as the local dimension of S3 was not the object of clear and compulsory indications from the EC, the cities' role has been significantly absent from many strategies with the only exception of the Digital Agenda. In this case, the contents (and rhetoric) of smart cities programs have influenced the inclusion of the urban dimension. Otherwise, national practices and legal frameworks have been decisive in defining the quality and intensity of participation by the local levels. This gap regarding poor city-region articulation about S3 does not seem coherent with the growing role of cities.

Besides institutional settings, the S3 approach questions the relationship between cities and surrounding areas. In common sense, the city is where managerial activities are mainly located, especially the innovative ones; while, the rest of the region is where large manufacturing plants are located. This stereotypical image is clearly outdated, yet it opens the issue of the spatial division of the economic activities of tomorrow. New technologies like 3-D printing machines are giving the impression that manufacturing activities can be brought back to city centres, though this is doubtful whether produced volumes and supply of raw materials would significantly increase. If the city is the place where innovation is generated, it is also the place with the highest pressure on the use of land. The de-industrialisation that started in the 1970s has left many brownfields that were progressively filled in from the 1990s onwards with a radical shift from manufacturing to service industries. This issue should be addressed when implementing the S3 because investing in R&I activities risks creating potential tensions between the urban cores and the rest of the region as well as tensions on the use of land in saturated urban areas. The concentration of investment in the most innovative areas risks reinforcing tensions between urban and non-urban contexts.

The third dimension directly refers to the jobs of tomorrow, and implicitly to the capacity of policy to support their creation. The forward-looking exercise requested by the EDP aims to promote a risk-

taking approach exploring the potentials for new market niches. This approach seems to be a soft compromise between a purely liberal approach (the 'laissez-faire' where entrepreneurs are left free to take the risk on the market) and a more interventionist one (public authorities deciding about investments on technological, R&D activities). In this respect, the S3 aims to mobilise the business knowledge of entrepreneurs by involving them in a discovery process where public authorities are expected to work facilitating coordination. However, the creation of future jobs is a difficult and challenging task for any R&I and, in general, socio-economic policy. In the case of cities, this challenge is combined with finding the space needed for these jobs (the second analytical dimension), especially in highly saturated urban cores with high pressure on real estate values.

The fourth dimension refers to the embedding of these dynamics in the city and regions implementing S3. Since the first analysis using the 'shift-share' model (Armstrong and Taylor, 2000; Capello, 2007), we know that regional growth might be led by having a local mix of fast-growing industries (the so-called 'mix' effect) and/or because industries located in the region grow more than homologues elsewhere (the regional effect). Although this model is somewhat descriptive, it highlights the importance of supporting regional productivity. Referring to the case of S3, the challenge is the anchoring of R&I dynamics in cities, keeping in mind the distinction between having a portfolio of fast-growing industries versus having regional industries performing better than competitors located elsewhere (for a more advanced approach along similar intuition, see Camagni and Capello, 2013).

These four dimensions (multiscalar approach to S3, city-region relationship, the creation of future jobs and the embeddedment of economic development) will be applied to the two cases of Milan and Brussels. These two cities have been selected because, in our view, question the notion of S3. Both cities are economically advanced, yet have different institutional and spatial settings. Brussels is a city-region with a regional government having a constitutional status, but complicated relationships with the two surrounding regions; while, Milan does not have such a strong status, but it has better relationships with the rest of the Lombardy region. For both cities, the creation of new jobs and embeddedment of regional development represent key challenges because they are competing to keep a leading position in the European economic space.

4. THE CASE OF MILAN

In the last decade, Milan had recovered its international image after a period when it was just a 'good player in a minor league'. In 2015, this 'renaissance' became evident internationally thanks to the Expo fair that took place in Milan and was 'certified', among others, by the New York Times that listed the city as the first place to be in 2015 (New York Times, 2015). This positive sentiment is largely shared by citizens, firms and organisations as well as international investors (see the Milano Scoreboard in Assolombarda and Comune di Milano, 2017). This success is related to a new economic model able to mix an improbable combination of factors supporting the local productive system and leading to innovation, such as the concentration of universities, strong cultural assets (e.g. exhibitions, theatres and museums) and a relatively efficient public transport system (at least in the urban core).

The combination of both traditional economic factors and soft cultural assets leading to a growing number of start-ups is combined with a new frame for industrial policy, which are less about market interactions while focusing more on systems, networks, institutions and capabilities. Referring to the S3 frame, the success of Milan is particularly enlightening because it is a large, international city acting as the gateway of a broader region, Lombardy. In the case of Milan, it is the regional authority of Lombardy responsible for the S3 development, and not the municipality, and within this strategy, the regional government did not include any meaningful differentiation for the different regional territories, from Milan to medium-size cities in the region or peripheral mountain areas.

Starting from the first analytical dimension, the city of Milan had no formal competence on the formulation of the S3 strategy for Lombardy, but this does not mean that city policymakers did not influence regional ones. Specifically, the city has expressed its strength on the design and implementation of the regional S3 thanks to its weight on the regional economy and, even more important, by developing its own metropolitan strategy with many overlapping points to the contents of the regional one. Furthermore, Milan benefits from the chance to use the post-Expo area to create a new 'industrial and scientific park' with the specific aim to foster innovation, clearly in relationship to themes developed by both the metropolitan plan and the regional S3.

The regional S3, as interpreted by Lombardy, aims to escape the conventional top-down approach in which a policy is defined ex-ante, implemented mechanically and controlled ex-post. The new strategy blends the selection of some macro-areas (called 'competence systems') with a bottom-up entrepreneurial process of discovery involving all the relevant stakeholders in the consultation, i.e. firms, higher education institutions and research centres as well as independent inventors and innovative startuppers. In the regional experience, the 'competence systems' are related to nine pre-existing clusters[38], previously recognised also by the national Ministry for Economic Development. More precisely, Lombardy, like other northern Italian regions, has used the S3 to match the rich 'territorial capital' (cf. OECD, 2001) with a strong regional R&I system (see also Camagni and Dotti, 2010; Dotti and Bubbico, 2014). In so doing, Lombardy has adopted an 'open innovation' approach (Chesbrough, 2003; Chesbrough and Appleyard, 2007), i.e. firms are invited to use external and internal ideas and paths to market. For this purpose, the region also launched a new open-innovation platform as an 'experimental lab' to mobilise SMEs and researchers (see Regione Lombardia, 2018), aiming to stimulate entrepreneurial discoveries within clusters that may result in new value-chain strategies (Bramanti, 2015a). The S3 approach is thus well suited in this context as it allows for the concentration of resources in selected industrial domains, some of which have a significant presence in the Milan area.

In this framework, Milan has had the possibility to play an even more relevant role thanks to two main factors. First, the 2014 national reform of local authorities has established, among others, the Metropolitan City of Milan replacing the Province of Milan. Without entering into details, the new Metropolitan City is an inter-municipal administrative tier aiming to coordinate the municipalities of Milan and surrounding areas (i.e. the metropolitan city covers the same territory as the province of Milan); whereas, the 'old' province was an autonomous body with their own elected council and president. Practically speaking, mayors and members of the city councils have now an arena to coordinate directly, instead of an intermediate body as the old province. In this respect, the Metropolitan City of Milan, led by the Mayor of Milan, was the first one in Italy adopting a strategic plan on 12 May 2016 (see Città Metropolitana di Milano, 2016). This plan was conceived as a process of defining and building the goals of development of the metropolitan area by activating networks between public and private actors (inclusiveness) as well as short- and long-term actions and cross-sectoral policies. More precisely, the Plan identifies six key strategies: digitalisation of public services and data accessibility, urban entrepreneurship and networking among productive clusters, investment attraction, smart and sustainable city (green urban planning, energy efficiency and sustainable building), smart mobility and 'integrated' governance. The overlapping between the metropolitan strategic plan and the regional S3 are evident: both documents adopt a similar method focusing on dynamic activities (not sectors) and the existing SMEs operating on these technologies, which are both likely to be located in the urban core.

The second key-asset for Milan is the availability of the site of Expo 2015 (the international exposition that closed its gates at the end of September 2015). This location, which benefits from excellent infrastructure and high accessibility (both locally and internationally), has been chosen for an 'industrial, research and innovation park' devoted to innovative production and tertiary-level vocational training. The availability of these physical spaces – located within the metropolitan city - is an extremely strong precondition to developing a truly innovative district, as presented and discussed further on in this section.

Moving to the second analytical dimension, the Milan-Lombardy dyad represents the ideal-typical case of a city-region with many interacting mechanisms at work between the urban core and its region. Specifically, Lombardy (like other northern Italian regions) has a longstanding system of medium firms interacting with the urban core of Milan, where knowledge-intensive activities are clustered. The interaction between the 'regional' manufacturing sector and the 'urban' advanced services is, probably, the key factor for the competitiveness of Milan in the 'knowledge economy. Both the regional S3 and the metropolitan strategic plan rely on this 'productive backbone' to promote more systemic approaches aiming to facilitate, (re)combine and support exchanges among existing economic actors and lead to innovation.

This systemic approach aims to address our third analytical dimension on creating the tomorrow jobs, probably the hardest one in policy design, and which is often a significant problem in advance

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[38] The nine clusters are aerospace, agro-food, green chemistry, energy and the environment, smart plant, mobility, life sciences, living environments and smart communities.

regions competing to keep the leading positions. For this purpose, Milan and Lombardy have renovated their efforts focusing on their 'vocational education and training' system. This basically implies the development of transversal competencies and soft skills, such as problem-solving, critical thinking, creativity, initiative, learning to learn and to take risks, reflection, and collaboration, and the involvement of firms in the process, thereby enhancing what has been called the 'educational firm' (Bramanti, 2015b).

The fourth and last dimension is related to the embedding of all the previous dynamics to produce territorial economic growth (possibly inclusive and sustainable). The keyword seems here to be 'innovation district'. Innovation districts are, by definition, geographic areas where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators (see Katz and Wagner, 2014). Innovation districts are physically compact, transit-accessible and technically-wired, and offer mixed-use housing, office and retail. Innovation districts are the manifestation of mega-trends altering the location preferences of people and firms that are choosing to converge and co-locate in compact, amenity-rich enclaves in the cores of urban areas. Start-up entrepreneurs are setting up their ventures in collaborative spaces where they can benefit from the presence of their peers and may have efficient access to everything from legal advice to sophisticated lab equipment. These kind of locations are already present in Milan. The city can count on a growing number of co-working facilities and 'FabLab' that will have a major opportunity to grow thanks to the reconversion of the post-Expo area and the induced effects.

To conclude, the case of Milan shows an unusual combination of factors from a renovated institutional framework to an 'open' policy approach explicitly conceived to rely on existing strengths. The funding tools are implemented to address systemic issues and networking existing actors, while the spatial dimension is articulated to exploit the 'unique' opportunity of the post-Expo area. The goal is to consolidate a renovated economic vigour for a longer-term perspective.

5. THE CASE OF BRUSSELS

The Brussels-Capital Region (henceforth, BCR) is one of the three regions of Belgium in charge of implementing the S3. The BCR is a fully urbanised region with about 1.2 million inhabitants encompassing 19 municipalities and is an enclave in Flanders. The BCR is the urban core of a larger metropolitan area which includes parts of Flanders and Wallonia as well, reaching up to 1.5 million inhabitants, though definition and boundaries are still debated (Annoni and Dijkstra, 2013; De Maesschalck et al., 2015; Dijkstra and Poelman, 2017; Dotti et al., 2014; Dotti and Spithoven, 2017b). Brussels is located in the centre of Belgium: despite representing just one-tenth of the Belgian population, about one-fifth of the national GDP is concentrated in the BCR (which goes up to one third if considering the whole metropolitan area). Differently from Milan, Brussels is not living a reinvigorated period of economic growth, but it was able to keep very high levels of economic competitiveness being one of the top-5 European regions regarding per capita GDP (twice higher than the European average). On the other hand, Brussels suffers significant contradictions between this economic 'success' and an unusually high rate of unemployment (more than 16%), which is a long-standing problem.

Since 1999, the BCR has set up a regional R&I policy that has progressively been developed with growing budget and tools. In 2004, 'Innoviris' was set up as the regional R&I agency (formally established in 2003 with another name, then renamed in 2010). For this article, the most important milestone is in 2005 when a new regional coalition led by Socialists in alliance with Christian-Democrats and the Greens identifies, for the first time, three thematic areas for economic specialisation: health, environment/green economy and ICT. The following year (2006), the first regional innovation plan is adopted and the regional budget for R&I policy progressively increased from 22 million Euros in 2004 up to 60 million in 2016. In 2014, a new regional innovation plan was adopted paving the way to the following S3 (adopted in 2016).

When the EC launches the S3 agenda, the BCR could benefit from having already developed a framework for R&I policy that easily fits in the new European framework. The three themes, already selected by the regional political coalition, were slightly reformulated over the years, but without substantial changes: health was redefined as 'life sciences' broadening the scope, the ICT sector has sometimes been articulated in 'digital industries' or limited to IT; while, 'environment' was articulated as 'green technologies', 'eco-construction' and, more recently, as 'circular economy'. The first two themes were chosen because of the strong presence of those sectors/industries in the BCR;

while the 'green economy' was, on the contrary, more challenging to identify, and the definition has shifted over time from 'eco-construction' (i.e. referring to construction as well as architecture) to 'green technologies' and, more recently, to 'circular economy'. Despite some marginal and nominal changes, these three themes can be seen as constant since 2004-2006 (with some mentions already in policy documents back to 1999). To support these three specialisations, the BCR has progressively developed a complete policy mix from R&D subsidies and clusters for SMEs and large companies to incubators and acceleration programmes for startups (Innoviris, 2016).

Within this framework, the BCR has had an easy task to implement the S3 fulfilling European requirements. The key themes for regional specialisation were already identified; while, Innoviris as implementation body could double its staff and benefited from cooperation with the already existing regional Science Policy Council, where stakeholders are represented. Therefore, the S3 can be seen as 'just' a way to support an already going on process, providing some extra budget to boost policy implementation.

Referring to the four dimensions chosen to question the S3 implementation, in the case of Brussels the Belgian institutional framework undermines the multi-scalar approach to S3. The BCR is one of the seven federated entity of Belgium (three Regions, three linguistic Communities and the Federal level). Without entering into details of the (complicated) Belgian federalism (cf. Spithoven, 2013), the BCR is mainly in charge of economic development (among other competencies); while linguistic Communities are in charge (among others) of fundamental research and universities. The BCR is the only region of Belgium where both French and Dutch speaking Communities overlap. Acknowledging this substantial simplification of the Belgian federalism, for the case of the S3, the BCR is solely in charge of the S3 implementation without the formal requirement of cooperation with other governments of Belgium, as the other two regions are. Furthermore, the BCR has limited competencies on economic development, and not on university and fundamental research (which belong to two different linguistic Communities). With both Flanders and Wallonia, the BCR has established some minor cooperations on specific programmes (i.e. the Walloon poles for competitiveness, the Flemish living lab for active ageing and a joint programme across the three regions for SMEs). These tools were conceived to promote synergies and simplify procedures, somehow overcoming the rule that firms can receive funding only from the region where they are located. Nevertheless, these initiatives have a limited budget and were set up even before the S3 as efforts to overcome institutional constraints. Thus, the S3 action was easy to implement in a region like the BCR that already identified fields for specialisation and was already developing her own R&I policy mix R&I; on the other hand, the complicated federalism of Belgium prevented a multi-scalar approach.

Related to these institutional constraints, the BCR suffers from congestions determined by the limited size and full urbanisation of the regional territory. This limitation goes in two directions, within and outside the region. Internally, the BCR has to 'find space' to support selected specialisation; while the limited possibilities for inter-regional cooperation narrow options for the scale-up of new economic activities. In this respect, the BCR has an interesting but under-considered asset represented by eight business centres and four incubators (hosting already 600 startups in total). Even though these infrastructures were conceived mainly for urban regeneration, they might be an opportunity to give space to new companies in selected fields of specialisation. Economically, these infrastructures might reduce pressure on start-ups to find a central location in a saturated area against the overwhelming presence of 'already successful' industries such as finance and public sectors.

This also relates to the third dimension of creating jobs in a region having longstanding problems with unemployment, and having an economic structure dominated by industries that are unlikely to create new jobs like finance and the public sector. One of the most known features of the economy of Brussels is the massive presence of the public sector (14% of the regional GVA, about twice the national average, and 37% of jobs) due to the co-location of both European and Belgian bodies (see Dotti, 2015). However, the most significant industries in the BCR are finance and insurance, and business services; whereas, manufacturing industries and construction are particularly limited in comparison to the rest of the country. This economic profile strongly oriented to service industries is typical of developed urban areas, something similar to Milan, where administrative functions and business services tend to be concentrated in the main urban agglomeration (Carr and Feiock, 1999; Castells, 1989; Iammarino, 2005; Thisse, 2000). On the other hand, new technologies like FinTech are posing pressure on these industries shifting from traditional banks to new (smaller) firms, potentially

leading to major jobs losses. Furthermore, Brussels is recognised as an international, but not global financial centre (e.g. Yeandle, 2017). Similarly, the public sectors, both Belgian and European ones, do not seem promising industries for jobs creation and new technologies are likely to have similar impacts on public administrations.

The fourth dimension is the capacity of the BCR to embed the S3 in its region. In this case, the BCR was already engaged on R&I policy in favour of regional specialisation, and the S3 initiative is somehow just an exogenous help to support an already ongoing process. In fact, the BCR is a rich and developed region, and this might question the need for European intervention. As a policy practice, the S3 initiative seems having had the effect of reinforcing an existing trend; regarding economic impact, the size of means given by the S3 seems unlikely to be able to address the long-standing problem of unemployment.

To conclude, the S3 gave new resources to the BCR to reinforce a growing R&I policy mix, already oriented to support long-term regional specialisation in three selected industries. While the institutional framework undermines inter-regional cooperation; the economic structure of Brussels poses critical challenges being dominated by industries that are unlikely to create new jobs in a region with a particularly high unemployment rate, whereas the relationship with surrounding regions seems weak and institutionally constrained.

6. REFLECTIONS ON SPATIALITY AND TIMING OF SMART SPECIALISATION

From the comparison of the cases of Milan and Brussels, three main lessons to further the debate on S3 can be drawn referring to the fundamental dimensions of space and time. As far as the four analytical dimensions used to investigate the two cases, the goal is to reflect on the replicability of these experiences and, in general, of the S3 approach across Europe (and beyond). We aim to provide lessons that can be generalised to further the S3 notion both theoretically and empirically.

Starting from the spatiality of the S3 experience, three sub-dimensions emerge as relevant from the cases of Milan and Brussels: the need for physical space, the scale of implementation and the inter-dependencies associated with it. Acknowledging the crucial role played by cities for innovation (e.g. Florida et al., 2017), the S3 rationale is likely to intervene mainly in urban agglomeration where R&I activities tend to cluster. Nevertheless, cities are also the place with highest pressure for land use leading to strong selectivity on the emergence of most innovative (thus, highly risky) entrepreneurial activities. This pressure is critical especially in the phase of scale-up when usually innovative entrepreneurial initiatives tend to create the new jobs, which obviously requires more space. Even though these dynamics are well-known in the literature, the need for space to implement the S3 calls for more involvement of local authorities which are commonly in charge of urban planning. In this respect, for example, the post-Expo area in Milan opens a unique opportunity that Brussels does not seem having. In general, the implementation of S3 needs to take into consideration also the space to be implemented, overcoming the distinction between R&I policy and spatial planning.

The city-region dynamics also question the institutional framework in which the S3 policy is implemented since these are clearly intertwined. In this perspective, the S3 experience, like all the other EU policies, is challenging because of the high heterogeneity of European territories regarding both regional economies and institutional frameworks. The EU is looking to balance between the two extremes of a one-size-fits-all tool for the whole Europe and too vaguely defined tools. Although this is common to all the policy applied to a large scale, the S3 approach seems to have the potential to overcome this limitation, at least theoretically, because of the emphasis put on the EDP. However, on the ground, the perspective seems more blurred. If Milan has been able to promote a multiscale approach, this is not the case for Brussels because of institutional constraints that do not match the spatiality of the metropolitan area. On the other hand, Brussels was already involved in a similar process. Thus, the EU intervention is somehow redundant and limited to boosting the existing one. In the case of Brussels the S3 is just a way to reinforce an existing path; whereas, Milan seems to benefit from a renovated impulse. Here, the spatial scale of implementation ends up being related to the inter-dependencies existing across policy frameworks (the multi-level governance) and economic spaces. The dialogue between cities and surrounding regions is affected by the institutional frameworks looking for economies as well as diseconomies of scale, and the other way round. While an EU-wide initiative would be impossible to manage, even cities like Brussels might lack critical mass, thus requiring cross-institutional cooperation. The spatiality of the S3 refers, thus to internal

dimensions (need for space) as well as multiscale nature of R&I issues and the inter-dependencies with other factors.

The need for space for innovative activities, the multi-scalar nature of R&I activities and related policy, and the interdependencies between territories such as cities and surrounding areas are the sub-dimensions to be considered when analysing the spatial dimension of the S3 implementation. Theoretically, the S3 approach focused on the EDP seems a good way to reconcile top-down and bottom-up approaches (i.e. an exogenous incentive to orient regional dynamics). Nevertheless, the EU intervention needs to address the context-specific scales associated with this spatiality. European policymakers are aware that national, regional and local mean different things in each context, yet this ambiguity is still open without a clear, operational solution. Besides policy terminology, rephrasing this issue regarding space and scale for S3 implementation helps, in our view, to better define the challenge of implementing S3 and, in general, EU policy. Space matters depending on the scale of intervention, and the other way round. Policy-makers need to have a critical mass to intervene on, and this 'mass' is located somewhere in space and affected by this localisation. On the other hand, new economic activities need space as well, and this is more likely to happen in dense, often saturated areas like cities. Yet, taking the risk for most innovative initiatives is critical whether this happens in areas with high pressure from already successful economic activities. In this respect, initiatives like business incubators, coworking spaces, start-up houses, FabLabs, business accelerators seem a good compromise to provide a 'protected space' for new initiatives solving these issues on the space-scale nexus.

Referring to the fundamental dimension of time, the S3 has intervened on two cities living different economic and policy cycles. Milan has benefited from a reinvigorated process of growth led by the 2015 Expo; while, Brussels already had developed an R&I policy mix substantially in line with the S3 approach. Furthermore, an open issue exists about the timing for the return of these investments, and this is clearly critical: policymakers under higher pressure might be forced to speed up the implementation orienting investments towards safer returns, thus undermining the experimental risk-taking attitude promoted by the EU Commission (cf. Dotti, 2016). While Milan and Brussels are both successful metropolitan areas, at least in economic terms, they might 'fail' in implementing their S3 for internal reasons (endogenous failure) or by being outdone by competitors (exogenous failure) that would frustrate the local policy community. In this case, the EC does not seem having provided a 'safe' way-out preventing harmful competition among cities and regions.

Finally, a meta-argument on the S3 implementation refers to policy learning (Bennett and Howlett, 1992; Borrás and Højlund, 2015; Conzelmann, 1998). To promote a longer-term perspective, the S3 should not only work to promote R&I investments and EDP but also on capitalising from this experience through policy learning. The implementation of the S3 entails policy learning within the implementing institutions (at the intra-organisational level, i.e. within the public administration) as well as at the involved territorial level (intra-system learning) and between different territories horizontally and vertically across spatial scales (inter-system learning). Policymakers working on the S3 development and implementation are learning fundamental policy knowledge that might be critical for the future implementation of R&I policy and, in general, to support regional competitiveness.

To conclude, the S3 approach would benefit from considering the whereabouts of its implementation. The spatiality and temporality of the S3, as articulated in this section, should be considered to develop this notion of taking into account the need for space for the implementation of the S3, the spatial inter-dependencies as well as the need to articulate the timing and risk-taking attitude to S3. The challenge is to capitalise from the S3 initiative and, even more, to learn how to capitalising from this experience. Even though the implementation of the S3 might be difficult and, in some cases, did not succeed, policymakers need to keep this policy lesson. This experimental exercise carried out all over Europe provides the ground to develop the policy capacity of European cities and regions, though this needs to be recognised as such to do not waste these experiences.

7. CONCLUSIONS

The implementation of the S3 in Milan and Brussels has provided the opportunity to reflect on this innovative approach. After having put the S3 in the European context, four dimensions were used to assess the two cases and investigate the S3 approach, namely: the multi-scale nature of the S3, the relationship between the urban core and surrounding areas, the challenge of creating tomorrow jobs

and the embedding of the S3 dynamics locally. Despite being developed city-regions, Milan and Brussels have entirely different patterns to apply this new EU agenda. The differences discussed in the paper pointed out two fundamental elements often underestimated in the debate on the S3 implementation: the spatiality and temporality of this policy. In fact, the S3 implementation requires space to support the scaling-up of innovative activities, coordination among tiers of government involving local, regional, national and European policymakers, and taking into account the spatial economic interdependencies between cities and surrounding areas. Furthermore, the timing of the S3 implementation (from design to ex-post evaluation) affects the risk-taking approach highlighting the potential mismatch between short-term returns and longer-term perspectives, even more considering internal and external potential failures. Finally, we want to point out the challenge of capitalising the S3 experience as an opportunity to build regional capacity for R&I policy and, in general, for policymaking. An unsolved question to the S3 approach is the follow-up of this experience for both territories where it did not deliver the expected results, and how to embed the policy learning associated with this EC-led experience.

REFERENCES

Annoni, P., Dijkstra, L., 2013. EU Regional Competitiveness Index RCI 2013. EU Commission, Ispra.

Armstrong, H., Taylor, J., 2000. Regional Economics and Policy. Blackwell, Oxford.

Asheim, B., 2013. Smart specialisation - Old wine in new bottles or new wine in old bottles? (No. ersa13p476), ERSA conference papers. European Regional Science Association.

Asheim, B.T., Boschma, R., Cooke, P., 2011. Constructing Regional Advantage: Platform Policies Based on Related Variety and Differentiated Knowledge Bases. Regional Studies 45, 893–904. https://doi.org/10.1080/00343404.2010.543126

Assolombarda, Comune di Milano, 2017. Milano Scoreboard 2017 (No. 978-88-909565-2–2). Assolombarda and Comune di Milano, Milano.

Bachtler, J., McMaster, I., 2008. EU Cohesion Policy and the Role of the Regions: Investigating the Influence of Structural Funds in the New Member States. Environment and Planning C: Government and Policy 26, 398 – 427.

Bachtler, J., Mendez, C., 2007. Who Governs EU Cohesion Policy? Deconstructing the Reforms of the Structural Funds. Journal of Common Market Studies 45, 535–564.

Bellini, N., 2013. Smart specialisation: le sfide del nuovo ciclo di programmazione comunitaria per il regionalismo italiano, in: La finanza territoriale, Rapporto 2013. Franco Angeli, Milano, Italy, pp. 133–140.

Bennett, C.J., Howlett, M., 1992. The lessons of learning: Reconciling theories of policy learning and policy change. Policy Sci 25, 275–294. https://doi.org/10.1007/BF00138786

Bonaccorsi, A., 2009. Towards better use of conditionality in policies for research and innovation under Structural Funds (Working Paper for the Barca Report).

Borrás, S., Højlund, S., 2015. Evaluation and policy learning: The learners' perspective. Eur J Polit Res 54, 99–120. https://doi.org/10.1111/1475-6765.12076

Borrás, S., Jordana, J., 2016. When regional innovation policies meet policy rationales and evidence: a plea for policy analysis. European Planning Studies 0, 1–21. https://doi.org/10.1080/09654313.2016.1236074

Boschma, R., 2005. Proximity and Innovation: A critical assessment. Regional Studies 39, 61–74.

Bramanti, A., 2015a. Politiche di rilancio e sostegno all'economia lombarda (Policy Paper No. ECO15014). Éupolis Lombardia, Milano, Italy.

Bramanti, A., 2015b. Nuove alleanze nel percorso scuola-lavoro. Scuola Democratica 617–641. https://doi.org/10.12828/82079

Camagni, R., 1991. Innovation networks: spatial perspectives, 1st ed. Belhaven Press, London; New York.

Camagni, R., 2002. On the Concept of Territorial Competitiveness: Sound or Misleading? Urban Studies 39, 2395–2411.

Camagni, R., Dotti, N.F., 2010. Il Sistema Urbano, in: Perulli, P., Pichierri, A. (Eds.), La Crisi Italiana Nel Mondo Globale: Economia e Società Del Nord. Einaudi, Torino, pp. 35–68.

Camagni, R., Capello, R., 2013. Regional Competitiveness and Territorial Capital: A Conceptual Approach and Empirical Evidence from the European Union. Regional Studies 47, 1383–1402. https://doi.org/10.1080/00343404.2012.681640

Capello, R., 2007. Regional Economics. Routledge, Abingdon (UK).

Capello, R., Kroll, H., 2016. From theory to practice in smart specialization strategy: emerging limits and possible future trajectories. European Planning Studies 24, 1393–1406. https://doi.org/10.1080/09654313.2016.1156058

Carr, J.B., Feiock, R.C., 1999. Metropolitan Government and Economic Development. Urban Affairs Review 34, 476–488.

Castells, M., 1989. The Informational City: Information Technology, Economic Restructuring, and the Urban-regional Process. B. Blackwell.

Chesbrough, H.W., 2003. Open Innovation: The New Imperative for Creating and Profiting from Technology. Harvard Business Press.

Chesbrough, H.W., Appleyard, M.M., 2007. Open Innovation and Strategy. California Management Review 50, 57–76. https://doi.org/10.2307/41166416

Città Metropolitana di Milano, 2016. Milano: Metropoli Reale, Metropoli Possibile (Piano Strategico). Città Metropolitana di Milano, Milan, Italy.

Content, J., Frenken, K., 2016. Related variety and economic development: a literature review. European Planning Studies 24, 2097–2112. https://doi.org/10.1080/09654313.2016.1246517

Conzelmann, T., 1998. "Europeanization" of Regional Development Policies? Linking the Multi-Level Governance Approach with Theories of Policy Learning and Policy Change. European Integration online Papers 2, 1–23.

Dall'Erba, S., Hewings, G.J.D., 2003. European Regional Development policies: the trade-off between efficiency-equity revisited.

De Maesschalck, F., De Rijck, T., Heylen, V., 2015. Crossing Borders. Social-spatial Relations between Brussels and Flemish Brabant. Brussels Studies 84.

Derudder, B., Timberlake, M., Witlox, F., Matthiessen, C.W., Schwarz, A.W., Find, S., 2010. World Cities of Scientific Knowledge: Systems, Networks and Potential Dynamics. An Analysis Based on Bibliometric Indicators. Urban Studies 47, 1879–1897. https://doi.org/10.1177/0042098010372683

Dijkstra, L., Poelman, H., 2017. European cities – the EU-OECD functional urban area definition - Statistics Explained (Eurostat Metadata). Eurostat.

Dotti, N.F., 2013. The Unbearable Instability of Structural Funds' Distribution. European Planning Studies 21, 596–614. https://doi.org/10.1080/09654313.2012.722956

Dotti, N.F., Bubbico, R.L., 2014. New Challenges for Structural Funds: The New Territorial Capital Approach in the Perspective of the Evolution of the EU Regional Policy. EStIF 2, 101–115.

Dotti, N.F., Spithoven, A., van Heur, B., 2014. The competitiveness of Brussels in European Research Area. Brussels Studies 81.

Dotti, N.F., 2015. Update of the Economic Impact of the European and International Institutions on the Brussels-Capital Region, Europe in Brussels. Figures 2016. Visit Brussels, Brussels, Belgium.

Dotti, N.F., 2016. Unwritten Factors Affecting Structural Funds: The Influence of Regional Political Behaviours on the Implementation of EU Cohesion Policy. European Planning Studies 24, 530–550. https://doi.org/10.1080/09654313.2015.1047328

Dotti, N.F., Spithoven, A., 2017a. Economic drivers and specialization patterns in the spatial distribution of Framework Programme's participation. Papers in Regional Science Online first version. https://doi.org/10.1111/pirs.12299

Dotti, N.F., Spithoven, A., 2017b. Spatial perspectives on knowledge brokers: Evidence from Brussels. Environ Plan A 49, 2203–2222. https://doi.org/10.1177/0308518X17724442

EU Commission, 2008. Green paper on territorial cohesion. Turning territorial diversity into strength. EU Commission, Brussels, Belgium.

Faludi, A., 2006. From European spatial development to territorial cohesion policy. Regional Studies 40, 667–678.

Florida, R., Adler, P., Mellander, C., 2017. The city as innovation machine. Regional Studies 51, 86–96. https://doi.org/10.1080/00343404.2016.1255324

Foray, D., 2015. Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy. Routledge.

Foray, D., David, P.A., Hall, B., 2009. Smart Specialisation - The Concept. Knowledge Economists Policy Briefs 9, 1–5.

Frenken, K., Oort, F.V., Verburg, T., 2007. Related Variety, Unrelated Variety and Regional Economic Growth. Regional Studies 41, 685–697. https://doi.org/10.1080/00343400601120296

Gianelle, C., Kyriakou, D., Cohen, C., Przeor, M. (Eds.), 2016. Implementing Smart Specialisation: A Handbook. European Commission, Brussels.

Green, A.E., Orton, M., 2012. Policy Innovation in a Fragmented and Complex Multilevel Governance Context: Worklessness and the City Strategy in Great Britain. Regional Studies 46, 153–164.

Hall, P.A., 1993. Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain. Comparative Politics 25, 275–296.

Hooghe, L., Marks, G., 2003. Unraveling the Central State, but How? Types of Multi-level Governance. American Political Science Review 97, 233–243.

Iammarino, S., 2005. An evolutionary Integrated View of Regional Systems of innovation: concepts, measures and historical perspectives. European Planning Studies 13, 497–519.

Innoviris, 2016. Rapport d'Activités 2015 (Activity report). Innoviris, Brussels, Belgium.

Katz, B., Wagner, J., 2014. The Rise of Innovation Districts. Brookings.

Kemeny, T., Storper, M., 2015. Is Specialization Good for Regional Economic Development? Regional Studies 49, 1003–1018. https://doi.org/10.1080/00343404.2014.899691

Kroll, H., 2015. Efforts to Implement Smart Specialization in Practice—Leading Unlike Horses to the Water. European Planning Studies 23, 2079–2098. https://doi.org/10.1080/09654313.2014.1003036

McCann, P., Ortega-Argilés, R., 2015. Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy. Regional Studies 49, 1291–1302. https://doi.org/10.1080/00343404.2013.799769

McCann, P., Ortega-Argilés, R., 2016. The early experience of smart specialization implementation in EU cohesion policy. European Planning Studies 24, 1407–1427. https://doi.org/10.1080/09654313.2016.1166177

Morgan, K., 2017. Nurturing novelty: Regional innovation policy in the age of smart specialisation. Environment and Planning C: Politics and Space 35, 569–583. https://doi.org/10.1177/0263774X16645106

Moulaert, F., Sekia, F., 2003. Territorial Innovation Models: A Critical Survey. Regional Studies 37, 289–302. https://doi.org/10.1080/0034340032000065442

New York Times, 2015. 52 Places to Go in 2015. The New York Times.

OECD, 2001. Territorial Outlook. OECD.

OECD, 2013. Innovation-driven Growth in Regions: The Role of Smart Specialisation (preliminary version). OECD/OCDE, Paris.

Pike, A., Rodriguez-Pose, A., Tomaney, J., 2007. What Kind of Local and Regional Development and for Whom? Regional Studies 41, 1253–1269.

Polverari, L., 2017. Smart Specialisation in 2014-2020 ESI Funds Programmes: Not Just a Narrative. European Structural and Investment Funds Journal 5, 20–31.

Regione Lombardia, 2018. Open Innovation [WWW Document]. Lombardia Open Innovation. URL http://www.openinnovation.regione.lombardia.it/eng (accessed 1.31.18).

Spithoven, A., 2013. A bird's eye view, in: Spithoven, A. (Ed.), Annual Report on Science, Technology and Innovation for Belgium - 2013. Brussels.

Thisse, J., 2000. Agglomeration and regional imbalance. Why? And is it bad? European Investment Bank Papers 5.

Uyarra, E., Flanagan, K., 2010. From Regional Systems of Innovation to Regions as Innovation Policy Spaces. Environ Plann C Gov Policy 28, 681–695. https://doi.org/10.1068/c0961

Yeandle, M., 2017. The Global Financial Centres Index 21 (No. 21), Global Financial Centre Index. China Development Institute, Shenzhen-London.

Empreendendo descoberta inteligente: Uma abordagem aos modelos de implementação da especialização regional em Portugal

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ABSTRACT

The purpose of this article is to make the "state of the art" of the Portuguese smart specialization process, confronting the conceptual architecture of the different multilevel models of governance adopted by the Regions. In this context, the paper presents (as case study) the confrontation of the RIS3 operational models of the Centro and Algarve Regions, seeking to identify the different mechanisms of governance and adjustment of the strategies to their innovation ecosystems and to the reality of the critical mass in the presence. The first part of the article discuss the conceptual context and the focuses on the governance architecture (or multilevel governance) defined at the different Portuguese smart specialisation strategies, in their design phase and at the dynamic pathways for their implementation. The objective is to understand how this process influences the definition of priorities options and demand-tuning mechanisms. The second part is based on a close analysis of the processes and models for the operationalization of the strategies in the regions, with an overview of the Centro and Algarve, which were at different eligibility objectives and with different critical mass in their quadruple helix, streamline their entrepreneurial discoveries and ensure the reinforcement of their related varieties.

Keywords: Governance of RIS3, RIS3 Centro 2020, RIS3 Algarve 2020, Entrepreneurial Discovery Process and articulation mechanisms, Innovation models
JEL classification: : O21, O33, O38, R11, R58

RESUMO

O objetivo deste artigo é fazer o ponto da situação do processo de operacionalização e implementação da especialização inteligente em Portugal, confrontando a arquitetura conceptual dos diferentes modelos multinível de governança adotados pelas Regiões. Neste contexto, o artigo apresenta como casos de estudo, o confronto dos modelos de operacionalização das RIS3 da Região Centro e do Algarve, procurando identificar os diferentes mecanismos de governança e de ajustamento das estratégias aos seus ecossistemas e à realidade da massa crítica relevante em presença. A primeira parte enquadra conceptualmente o processo e centra-se na arquitetura de governança (ou governança multinível) prevista nas diferentes estratégias de especialização inteligente Portuguesas, na sua fase de conceção e nos percursos dinâmicos para a sua implementação. O objetivo é entender como este processo influencia a definição da escolha de prioridades e os mecanismos de ajustamento à procura. A segunda parte baseia-se numa análise mais dos processos e modelos de operacionalização das estratégias nas regiões, em particular do Centro e do Algarve, que encontrando-se em categorias de Regiões diferentes e com massa crítica relevante diferenciada nas suas hélices quadruplas,

adotaram mecanismos próprios para dinamizar a sua descoberta empreendedora e assegurar o reforço das suas variedades relacionadas.

1. INTRODUÇÃO

"My vision is for every euro spent in Cohesion Policy in the next seven years to be strategically targeted and results oriented. This is why Research and Innovation Strategies for Smart Specialization are one of the main pillars of the reformed Cohesion Policy."

Johannes Hahn, European Commissioner for Regional and Urban Policy

(European Commission, 2014)

A Estratégia Europeia para o horizonte 2020, assumiu objetivos ambiciosos para o crescimento (inteligente, sustentável e inclusivo) e para o emprego, que implicaram o redesenho da política de coesão e crescimento, e a definição de instrumentos e modelos de implementação robustos, de forma a assegurar o contributo de cada um dos Estados o Membros para os resultados programados.

Tendo como foco esses desafios, a Comissão Europeia (COM) assumiu o reforço da concentração de verbas em agendas temáticas concretas e criou (entre outras opções), mecanismos regulamentares orientados para garantir a implementação de instrumentos específicos. No contexto do tema da presente artigo, destacamos:

- A alocação de cerca de 34% do seu orçamento de fundos para o período 2014-2020 às questões da inovação e competitividade em sentido lato (isto é, para a investigação e inovação, a competitividade das pequenas e Médias Empresas (PME), as Tecnologias de Informação e Comunicação (TIC), bem como para a eficiência energética e alterações climáticas e descarbonização);

- A imposição da figura da condicionalidade *ex-ante* à aprovação de financiamento, dependente da definição de "*…uma Estratégia de Especialização Inteligente (*EEI*)… de modo a impulsionar as despesas privadas de investigação e inovação...*" (*DG Regio, 2014)* conduzindo deste modo, a que os Fundos Europeus Estruturais e de Investimento (FEEI) possam ser utilizados de forma mais eficiente, reforçando as sinergias entre as diferentes políticas europeias, nacionais e regionais, bem como entre os investimentos públicos e privados.

O presente artigo procura fazer uma análise e balanço de processos. Por um lado os processos de construção das EEI em Portugal (à luz do quadro referencial Europeu), e por outro, fazer um primeiro ponto de situação do processo de implementação, com particular foco na operacionalização dos modelos de governança (enquanto mecanismos participados de descoberta empreendedora). Neste contexto, faz-se um zoom às dinâmicas do Centro e do Algarve, com o objetivo de levantar questões de investigação e recomendações para os processos em curso.

2. O PROCESSO DE CONSTRUÇÃO DA ESPECIALIZAÇÃO INTELIGENTE, BREVES NOTAS DE UM PERCURSO DA SUA CONSTRUÇÃO EM PORTUGAL

2.1. A Especialização Inteligente como referencial da Politica de Coesão

"A Smart Specialization strategy is a major policy process that we must take seriously. (…). We need innovation policies as a crisis exit strategy."

Danuta Hübner, Chair of the Committee on Regional Development
(European Parliament, 2013)

O Guia RIS3 define Estratégias Nacionais e Regionais de Investigação e Inovação para Especialização Inteligente (RIS3) como: "…agendas de transformação econômica integradas e de base local que [...]: focam a política de apoio e os Investimentos, nas prioridades nacionais/regionais, nos desafios e nas necessidades fundamentais de desenvolvimento de conhecimento… visam estimular o investimento

do setor privado, envolver as partes interessadas e encorajar a inovação e a experimentação" (S3 Platform, 2012).

A Especialização Inteligente assume-se assim como "…um instrumento chave para o desenvolvimento de base local, representando a mais compreensiva experiência política na implementação do progresso do vetor de inovação na Europa" (European Commission, 2016).

Com base nesta abordagem "…pela primeira vez, autoridades públicas e atores de uma área com mais de quinhentos milhões habitantes criaram as suas políticas de inovação de acordo com um conjunto comum de princípios e metodologias" (European Commission, 2016).

A bibliografia sobre esta matéria tem sido profícua e rica. Numa primeira fase defendendo as virtudes do modelo conceptual das EEI (com particular relevo para o contributo dos peritos contratados pela Comissão para o desenho do processo), numa segunda fase, difundindo e valorizando boas práticas sobre os mecanismos de participação definidos para o processo de construção das estratégias e, mais recentemente, realçando a importância dos processos de implementação, são disso exemplo (para além dos inúmeros documentos específicos e de guias de suporte da Plataforma de Especialização Inteligente[39]), as publicações de autores como: Philip McCANN, Raquel ORTEGA-ARGILÉS, Dominique FORAY, John GODDARD, Dimitrios KYRIAKOU, Frank Van OORT, Van ARK, etc.

Não cabendo no contexto desta reflexão, uma revisão desta extensa bibliografia, optamos, de forma a fundamentar a abordagem seguida na presente comunicação, por realçar alguns apontamentos da literatura de suporte tendo em conta particularmente dois momentos deste processo, a fase da conceção da política (o que se pretendia…) e os mecanismos de implementação (como estamos a concretizar…).

Um dos principais desafios colocado à Europa para o horizonte 2014-2020 centrava-se em redesenhar a política de coesão, com a consciência de que se tinha que assegurar uma política "…suficientemente flexível para responder a desafios diferentes e ao mesmo tempo suficientemente coerente e disciplinada para garantir a entrega da política em todas as regiões…" (McCANN, 2015). Nesse contexto, quando se discutiram os mecanismos de promoção da inovação e empreendedorismo nas regiões europeias (no âmbito de uma realidade regional muito heterogénea), foi fácil entender que se teria que garantir um quadro de referência suficientemente robusto para assegurar estas condições e o conceito da Especialização Inteligente apresentado pelos grupos de reflexão da COM permitia garantir estas premissas:

> - Por um lado, assegurava uma entrega da política ajustada à realidade de cada região (porque as EEI são "construídas" com base num processo alargado de participação dos *stakeholders* locais);

> - Por outro, garantia de forma coerente a concretização de um exercício estratégico com suporte na mesma metodologia, objetivos e foco no conjunto dos Estados Membros e das Regiões (uma vez que seguiu um quadro referencial de construção, acompanhado de perto pelas estruturas da DG REGIO, que procurou assegurar a capacitação institucional e individual dos atores envolvidos).

Por outro lado, esta abordagem conceptual da Especialização Inteligente, "…especialmente desenhada para o contexto local com base no potencial da economia regional" (McCANN, 2015), tinha a virtude de permitir à Comissão ter um instrumento com uma abordagem "…muito consistente enquanto política de base local na lógica de Barca (2009)…" e que assegurava "…também o espirito dos regulamentos da nova política de coesão orientados para os resultados" (McCANN, 2015). Esta feliz conjugação (coerência formal e o ajustamento a uma politica de base local), mesmo que numa dimensão conceptual, deu a esta metodologia de abordagem da Especialização Inteligente uma relevância significativa, que tinha ainda a capacidade de "…oferecer uma lógica trabalhável para o desenho e entrega de políticas baseada numa abordagem de prioridades que encoraja a constituição de capacitação e aprendizagem institucional, contribuído para a tomada de decisões e escolha politica" (McCANN, 2015).

Tendo a COM garantido a sua adoção generalizada, por via da figura da condicionalidade ex-ante (conforme referimos), importava agora, traduzir e assegurar no território a sua concretização. Esta

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[39] http://s3platform.jrc.ec.europa.eu/

passagem do desenho conceptual para a realidade exige, no entanto, à Comissão, às Regiões e aos Estados Membros um processo de aprendizagem conjunta e a mudança de alguns paradigmas.

De facto, no âmbito da Especialização Inteligente, o processo de escolha das prioridades já não pode ser mais assumido como um mero requisito instrumental do circuito de análise da candidatura (lógica de chek-list), nem sequer uma escolha de domínios vencedores. O processo tem que se assumir como "…uma poderosa base organizativa que ajuda as regiões a desenvolver as suas estratégias de forma consistente com base em pensamento moderno no que diz respeito à natureza da inovação e ao seu papel crucial para o crescimento local" (McCANN, 2015).

Para assegurar esta abordagem, o modelo definido, confere um papel crucial aos mecanismos de implementação e governança, em particular, à capacidade de garantir a participação efetiva dos stakeholders (da chamada hélice quádrupla[40]) e de mecanismos on-going de ajustamento do modelo (Estratégias de Especialização), tendo em conta: as dinâmicas do mercado, as diferentes realidades regionais e o processo de descoberta empreendedora (assegurada pela interação entre ciência, investigação, empresas e sociedade civil, com uma mediação das entidades públicas).

Perante estes pressupostos, as regiões e os Estados Membros, não podem assumir que esta nova abordagem estratégica, terminou com o cumprimento da condicionalidade, mas antes, devem olhar para esta "declaração de princípios estratégicos", como o inico de um percurso, que se deve ancorar em mecanismos de escolha prioritária, num modelo dinâmico de governança, numa monitorização e avaliação capazes de gerar mecanismos de ajustamento e (re)criação até que se atinjam os resultados desejados.

Para o sucesso da implementação das prioridades das EEI, como refere a bibliogafia, não é suficiente que autoridades públicas e os restantes atores envolvidos tenham identificado investimentos privados. Torna-se crucial garantir, que uma vez implementada a estratégia, "…se mantem o envolvimento dos atores através dos diferentes processos de concretização da política…" (European Commission, 2016) "…sendo imperativo assegurar estruturas flexíveis onde governos e atores envolvidos, possam constantemente adaptar atividades e políticas para mudar a realidade" (European Commission, 2016).

Foi tendo em conta estas abordagem, que no presente artigo se tentou fazer uma análise dos mecanismos de implementação definidos no processo de programação e construção das EEI Regionais e Nacional e os mecanismos de "entrega" e governança que se encontram a funcionar atualmente, no âmbito deste processo de inovação e empreendedorismo (em particular nos casos da Região Centro e Algarve). O objetivo é entender e responder essencialmente a duas questões de investigação:

- Como está o processo implementado a permitir a entrega desta política numa base local? (como chegar aos resultados…);

- Estarão a ser garantidos os mecanismos de participação e de incorporação dos contributos dos diferentes atores envolvidos, na implementação das Estratégias? (como estamos a capacitar os atores para robustecer os ecossistemas regionais de inovação…).

2.2. O processo de construção da Especialização Inteligente em Portugal: breves notas de um percurso

As regiões Portuguesas envolveram-se ativamente na dinamização do processo de construção dos seus exercícios de EEI, permitindo que Portugal tenha integrado o primeiro grupo de países com todas as Regiões registadas na plataforma S3. Esta dinâmica das regiões portuguesas permitiu que em Dezembro de 2012, no *workshop* organizado pela Fundação para a Ciência e a Tecnologia[41], tenha sido possível assistir à apresentação do "estado da arte da RIS3 das sete regiões" (Continente e Regiões Autónomas) e a um conjunto de diagnósticos e pontos de situação dos trabalhos indispensáveis à estruturação da Estratégia Nacional (em particular dos sistemas científicos e de investigação).

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[40] No contexto do conceito discutido por Arnkil R., et al. (2010), no estudo - Exploring Quadruple Helix. Outlining user-oriented innovation models

[41] Seminário – O Sistema Nacional de Investigação e Inovação: Desafios, forças e fraquezas rumo a 2020, https://www.fct.pt/esp_inteligente/diagnostico

Entre 2012 e 2014, assistiu-se em cada região, a um desenvolvimento mais ou menos intenso dos processos de estruturação das estratégias tendo o texto final das mesmas[42], sido alvo de um despacho conjunto dos Secretários de Estado do Desenvolvimento Regional, da Inovação, Investimento e Competitividade e da Ciência a 23 de dezembro de 2014, aprovando a Estratégia de Investigação e Inovação de Portugal para uma Especialização Inteligente que contempla "…para além da nacional, as 7 Estratégias regionais, as componentes de alinhamento inter-estratégias aos níveis temáticos e de articulação de politicas (policy-mix) e contém um espaço multinível de governança comum" (Portugal, 2014).

Na sequência desta aprovação, o conjunto das estratégias passaram a constar no sítio do Portugal 2020 e a condicionalidade foi dada como cumprida pela COM, tornando este momento o ponto de partida do processo de implementação das EEI em Portugal[43]. A transposição destas opções para o terreno assumiu um forte dinamismo logo a partir do início de 2015, por via da abertura de concursos no sistema de incentivos às empresas, procurando-se (com este arranque do PT2020 com base no universo das empresas) atenuar uma conjuntura (pós 2008[44]) de queda do investimento permitindo uma injeção de financiamento na economia e a dinamização do tecido empresarial.

O princípio distintivo deste processo de implementação das EEI, não residiu contudo na sua natureza intensiva, nem no caráter inovador ou dedicado[45] dos instrumentos de política que foram selecionados para compor o universo da Especialização Inteligente, mas antes na cristalização empírica e sucessiva de consensos de governança que delinearam a trajetória possível do ambicioso percurso de transformação económica integrada de base regional (traçado na fase de programação).

Nesta tradução prática da Política Regional, a implementação das EEI deparou-se com um duplo ónus de cumprimento de expetativas:

- Do ponto de vista do exercício de governança operacional, forçando (numa lógica de concertação multi-fundo, multi-agência e multinível) a uma tradução do discurso estratégico da inovação para a especialização inteligente, em opções concretas relativas ao âmbito, intensidade e mecanismos da reflexão das EEI no quotidiano concursal dos instrumentos da programação. Subjacente esteve a intenção de valorizar diretamente, em sede de seleção, o alinhamento das candidaturas com as EEI e, concomitantemente, produzir um efeito mais difuso de (re)alinhamento funcional sobre o universo de potenciais candidatos;

- Na ótica da governança estratégica de base regional, implicando a transição do modelo de convergência dos atores regionais (mobilizado na fase de fase de conceção), para o ciclo operacional, no sentido de construir um figurino com a mesma dinâmica de envolvimento, agora orientada para a produção de iniciativas e critérios de financiamento, e de refletir a influência reforçada das Regiões na mobilização dos instrumentos de nível nacional.

2.3. Breve balanço do processo de implementação da especialização inteligente em Portugal

O quadro de financiamento estruturado no Acordo de Parceria e a relativa amplitude e transversalidade das EEI levaram à definição, na fase de programação, de um conjunto de pressupostos potenciais de alinhamento (abarcando uma grande diversidade de Prioridades de Investimento (PI) na generalidade dos Objetivos Temáticos (OT) da Estratégia 2020).

Deste modo, com exceção feita aos investimentos do OT1 – Reforço do I&D&I, sujeitos ao regime de condição de admissibilidade, foi quantificada a proporção (ainda que de forma indicativa) do volume dos investimentos de cada PI que poderiam resultar alinhados com as EEI. Para este efeito, no âmbito da estabilização da policy-mix da ENEI, foram definidas cinco categorias de intensidade de alinhamento em que as PI foram classificadas em função do grau de centralidade para os desígnios da Inovação para a Especialização Inteligente, com proporções diferenciadas de afetação do volume indicativo de financiamento, resultando num universo de referência de múltiplos instrumentos.

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[42] Depois de validado nos respetivos Conselhos Regionais (CR)

[43] Comunicação formal Refª (2015) 2628820 de 23.6.2015

[44] Os dados do INE apontavam para um queda do investimento de 36,8% entre 2008 e 2013, correspondendo a uma redução líquida de 13,5 mil M€.

[45] Como será possível constatar adiante, os instrumentos (tipologia de sistemas de incentivos) mobilizados apresentam na generalidade uma continuidade relativamente aos mecanismos do período de financiamento anterior.

Intensidade do alinhamento com as RIS3	Proporção da dotação estimada	Prioridades de Investimento	Objetivos de Investimento
Absoluta	100%	1.1, 1.2	Reforço da I&D&I
Muito Elevada	75%	3.1, 3.2, 3.3 4.2	Competitividade das PME Eficiência energética das PME
Elevada	50%	2.3 8.5 10.2, 10.4	TIC para a administração em linha Recursos humanos altamente qualificados Formação Técnica, Superior e Avançada
Média	25%	4.1, 4.3 8.3	Sustentabilidade e eficiência energética Empreendedorismo
Baixa	5%	4.5 5.1, 5.2 6.1, 6.2, 6.3, 6.5 8.8, 8.9 9.1, 9.7 11.1, 11.2	Mobilidade urbana sustentável Adaptação às Alterações Climáticas e Riscos Ambiente, património natural e regeneração urbana Infraestruturas de Emprego e Inclusão Social Eficiência da Administração Pública

Fonte: Agência para o Desenvolvimento e Coesão (2014-2020).

Esta matriz de referência voluntarista, utilizada para dar à COM um referencial do potencial de investimento que se estimava poder vir a ser (em fim de linha) afeto às EEI, não foi contudo transferida (com esta abrangência) para a redação definitiva da Programação Operacional Temática ou Regional.

As exigências de reflexão sobre o alinhamento dos investimentos com as EEI foram então genericamente vertidas na regulamentação específica dos diversos domínios temáticos, e subsequentemente detalhados nos anexos dos Avisos de Abertura de Concurso (AAC). Estes elementos formam o objeto central da análise que se segue e a que acresce o inquérito efetuado pela AD&C às AG dos PO temáticos e regionais sobre o processo de implementação das EEI[46].

Nesta análise, o universo dos instrumentos representado é composto pelos instrumentos dos OT 1 e 3 associados ao domínio temático da Competitividade e Internacionalização[47], nomeadamente os:
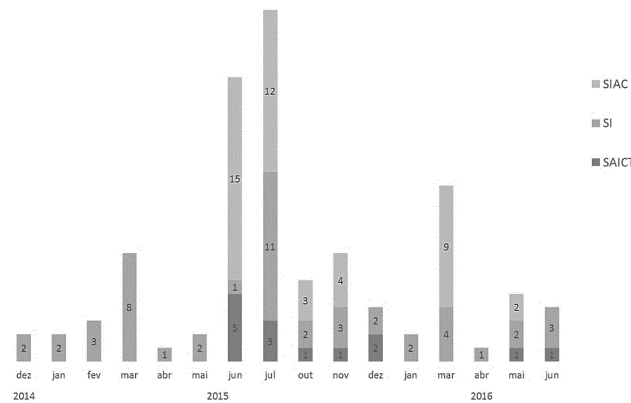
- Instrumentos dirigidos ao tecido empresarial, focados na inovação, empreendedorismo, qualificação, internacionalização, I&D e Recursos Humanos (RH) das empresas, quer diretamente (Sistema de Incentivos – SI) quer por intermediação dos seus agentes coletivos (Sistema de Apoio às Ações Coletivas – SIAC);

- Instrumentos fundamentalmente dirigidos às entidades não empresariais do Sistema de I&I, focados em múltiplas vertentes do estímulo à Investigação Científica e Tecnológica (Sistema de Apoio à Investigação Científica e Tecnológica – SAICT).

Tendo em conta este quadro instrumental, verificou-se terem sido abertos, até 30 de junho de 2016, um total de 108 AAC, o que revela a intensidade do processo de concursos, com uma cadência de abertura de 17 avisos por trimestre. Têm preponderância os AAC relativos a instrumentos do SI, com um total de 49, ombreado pelos AAC do SIAC, com 45, representando, respetivamente, 45 e 42 % dos concursos lançados. Esta quase paridade não se traduz contudo no volume agregado de financiamento colocado a concurso, em que a verba associada aos AAC dos instrumentos do Sistema de Incentivos (SI) ultrapassa 4/5 do total (82,3% – 2.638,5 M€), com um valor médio por concurso que ascende a 53,8 M€.

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[46] O inquérito foi realizado entre Julho e Setembro de 2016, versando o período decorrido entre Dezembro de 2014 e Julho de 2016, e incluiu um questionário escrito e uma recolha de informação dos SI dos PO visados, paras além da análise comparativa da informação do SI de Monitorização do PT2020. Os PO refletidos na informação apresentada correspondem aos 5 PO regionais do Continente e ao PO Competitividade e Internacionalização.

[47] O critério que presidiu à seleção destes instrumentos está relacionado com a sua forte dinâmica logo a partir da aprovação das EEI, que se traduziu na colocação a concurso de um volume financeiro muito significativo, em paralelo com a circunstância de corresponderem a mobilizações ao abrigo dos OT com maior intensidade prevista de alinhamento.

Fonte: Sistema de Monitorização do Portugal 2020, Agência para o Desenvolvimnto e Coesão (2014-2016).

Centrando-nos agora na influência das EEI sobre o processo de seleção das operações a beneficiar de apoio, importava responder a três questões fundamentais que se desenharam no decurso da implementação:

- Como foi efetuada a triagem entre a ENEI e as EREI aplicáveis?

- Quais as ponderações associadas à avaliação do alinhamento com as EEI nos instrumentos da Competitividade e Internacionalização?

- Quais os racionais empregues para avaliar a qualidade do alinhamento com a EEI em sede do Mérito Regional (SI)?

Como foi efetuada a triagem entre a ENEI e as EREI aplicáveis?

O modelo das EEI (vulgo RIS3) foi desenvolvido (em Portugal) a dois níveis – Nacional e Regional – pressupondo a coordenação e a complementaridade entre a dimensão nacional traduzida na ENEI (naturalmente mais abrangente e diversificada), e a dimensão regional (EREI), focada nas abordagens de base local, que articulam o aproveitamento dos recursos, as vantagens competitivas e o modelo de especialização funcional inerente a cada Região. Por sua vez, os PO Temáticos e os PO Regionais das regiões menos desenvolvidas do Continente também partilham o financiamento de alguns instrumentos, nomeadamente quando os beneficiários destas regiões participam em projetos Multiregião, circunstâncias que implicam uma sobreposição ou dispersão das referências à ENEI e às EREI em cada candidatura.

No quadro da admissibilidade o princípio geral remete para as fronteiras traçadas entre os PO Temáticos e os PO Regionais, ou seja, a ENEI é aplicada nesta sede caso o PO Temático assuma a responsabilidade pelo financiamento, sendo utilizada a referência à EREI nas demais situações. Este princípio geral tem que ser complementado com outras lógicas sobretudo porque existem 4 regiões do país onde apenas atuam os PO Regionais (Lisboa, Algarve e as duas Regiões Autónomas), ou porque as fronteiras entre instrumentos prosseguidos nos PO Temáticos e nos PO Regionais que atuam nos mesmos territórios (Norte, Centro e Alentejo) incluem outros fatores de triagem (e.g. dimensão de empresas ou do investimento)[48].

No quadro da avaliação mérito, são mobilizadas no SI cumulativamente as duas dimensões da RIS3: a ENEI, refletida no Critério C - Impacto na Economia; a EREI, no Critério D - Convergência e Competitividade Regional, o denominado "Mérito Regional", enquanto no SIAC e SAICT a aplicação da ENEI e da EREI é mutuamente exclusiva.

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[48] Ainda neste âmbito, de ajustamento ao princípio geral, nos textos dos POR Lisboa, Centro, Norte e Alentejo prevê-se uma afetação proporcional de verba na PI 1.2 (que inclui as tipologias SI – ID&T e Inovação não PME e SIAC Transferência de Conhecimento C&T) de três para um entre a referência a RIS3 Regional e a RIS3 Nacional.

Sistema	Tipologia de Projeto	Alinhamento com a RIS3 na Admissibilidade	Peso Específico RIS3								
			Critério B			Critério C			Critério D		
			Mín.	Max.	RIS3 de Referência	Mín.	Max.	RIS3 de Referência	Mín.	Max.	RIS3 de Referência
Incentivos	Inovação Produtiva PME e não PME	S / N					2%	ENEI		15%	EREI
	Empreendedorismo Qualificado e Criativo	N					4%	ENEI		15%	EREI
	Qualificação PME	N				12%	14%	ENEI		21%	EREI
	Internacionalização PME	N				8%	12%	ENEI		21%	EREI
	ID&T	S								30%	EREI
Ações Coletivas	Promoção do Espírito Empresarial	N	3,2%	10,8%	ENEI/EREI						
	Qualificação	N	3,2%	8,8%	ENEI/EREI						
	Internacionalização	N	3,2%	10,8%	ENEI/EREI						
	Transferência do Conhecimento C&T	S	4,1%	6,0%	ENEI/EREI						
Investigação Científica e Tecnológica	Projetos de IC&DT	S	5,0%	6,0%	EREI/ENEI						
	Programas de Atividades Conjuntas	S		7,5%	EREI						
	Programas Integrados de IC&DT	S	5,0%	6,8%	EREI/ENEI						
	Proteção de Direitos de Propriedade Intelectual	S		n.a.							
	Projetos de Internacionalização de I&D	S		n.a.							

Fonte: Cálculos Agência para o Desenvolvimnto e Coesão (2016).

Quais as ponderações associadas à avaliação do alinhamento com as EEI nos instrumentos da Competitividade e Internacionalização?

Embora os critérios e subcritérios de seleção tenham sido determinados no âmbito dos Comités de Acompanhamento (no contexto de regulamento específico), os PO dispuseram de alguma margem de autonomia, patente na possibilidade de, por um lado, fixarem o seu peso relativo e, por outro, desenvolverem as metodologias de classificação associadas.

Na ótica das ponderações relativas dos subcritérios onde o alinhamento EEI é integrado, o Quadro 2 permite perceber que as tipologias do SI são aquelas em que as EEI saem mais valorizadas (pelo peso específico das ponderações da sua avaliação), sendo particularmente evidente no âmbito da Qualificação e Internacionalização das PME e da ID&T, onde o peso específico das EEI na análise de mérito assume aproximadamente o dobro do peso percentual face às análises da Inovação Empresarial e Empreendedorismo.

O contraste com o SIAC (Ações Coletivas) e o SAICT (Investigação Científica e Tecnológica) é também evidente, com os pesos relativos máximos no critério B a situarem-se em valores genericamente abaixo dos 10% e os mínimos a assumirem pesos quase residuais (abaixo dos 5%).

Quais os racionais empregues para avaliar da qualidade do alinhamento com a EEI em sede do Mérito Regional (SI)?

Na perspetiva estrita das tipologias do SI, a avaliação do alinhamento com a EEI (para efeitos de seleção no âmbito do Mérito Regional) assume um cariz eminentemente qualitativo[49], que se manifestou no desenvolvimento de metodologias para medir e classificar a intensidade e tipo de alinhamento com a EEI Regional e em simultâneo, refletir os fatores regionalmente intrínsecos a cada um dos processos estratégicos de especialização inteligente. Assim, as matrizes de classificação do Critério D (ou subcritério D1) demonstram, para cada um dos PO Regionais, a apropriação individualizada e o grau compromisso implícito com o racional da "sua" EEI enquanto modelo de suporte à canalização do investimento, estabilizados ao longo do seu contínuo de descoberta empreendedora.

O processo de transposição do alinhamento estratégico com as EEI para a dimensão operacional não é contudo linear. Ele surge em função do racional próprio subjacente à construção das EEI em cada região, pelo que a sua análise, exige a decomposição das distintas características e elementos que integram o conjunto das matrizes de Mérito Regional do SI nas Regiões do Continente. A síntese desta análise permite-nos destacar quatro dimensões:

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[49] Comparativamente à natureza linear (Sim/Não) da apreciação do alinhamento com as EEI na fase de aferição da admissibilidade das candidaturas.

i) Diversidade – considerando a multiplicidade de tipologias de projeto (e respetivos avisos de abertura) que integram o SI, a generalidade das matrizes analisadas não demonstram um critério de aplicação ajustado tipologicamente. Excetuam-se deste padrão o PO Algarve, que adotou matrizes por Tipologia com majorações e classificações diferenciadas, e o PO Alentejo, que adotou categorias e classificações diferenciadas para a Inovação Produtiva, ID&T e as demais tipologias de projeto do SI;

ii) Enquadramento em Domínios RIS3 – Este é o elemento central das matrizes do Mérito Regional. Nos PO Alentejo, Centro e Lisboa a classificação é baseada no número total de Domínios em que a candidatura se integra (ou não, aplicando-se assim a classificação do não alinhamento). A ordenação assenta em duas ou três categorias classificadas e nomeadas proporcionalmente (Fraco-Forte; Alto-Médio-Baixo; Alinhado-Fortemente Alinhado, etc.). Nos PO Algarve e Norte a matriz hierarquiza os Domínios, ou seja, cada um obtém uma classificação específica consoante a sua natureza estratégica (PO Norte - Nucleares, Emergentes, Wildcards) ou individualmente;

iii) Alinhamento nas Linhas de Ação RIS3 – Este elemento de classificação surge em complemento da classificação do alinhamento por Domínios RIS3, originalmente nos PO Centro e Algarve e depois também no PO Lisboa. Na prática pressupõe a introdução de um eixo perpendicular (Linhas de Ação) na matriz, que produz uma combinação Domínio-Linha de Ação classificada proporcionalmente;

iv) Majorações – Apenas o PO Centro e o PO Algarve recorrem a majorações. No primeiro caso, é valorizada a integração em Estratégias de Eficiência Coletiva, na grande maioria dos avisos de abertura dos SI. No caso do PO Algarve são sempre utilizadas majorações, embora de forma diferenciada entre as tipologias de investimento: na ID&T valorizam-se o potencial de *clusterização* de alguns Concelhos nos Domínios Mar e Agroindústria; na Inovação Empresarial e Empreendedorismo descriminam-se positivamente os Municípios com menor dinâmica empresarial e valoriza-se a capacidade de alavancar setores emergentes e alargar as cadeias de valor regionais; e, na Qualificação e Internacionalização de PME valoriza-se a articulação de 2 ou mais Domínios da RIS3 Regional.

3 . A IMPLEMENTAÇÃO E A GOVERNANÇA DA DAS ESTRATÉGIAS DE ESPECIALIZAÇÃO

Como referimos anteriormente, a figura da EEI, tal como preconizada pela COM, pressupõe a sua construção e condução com base num exercício constante de reflexão que se sustenta num modelo de governança progressivo, ou seja, um mecanismo que durante o período de implementação promove adaptação e consolidação do figurino e metodologias cristalizados durante o período de conceção. Neste contexto, dos princípios da governança da inovação para a Especialização Inteligente sintetizados pela COM nos seus documentos de orientação (S3 Platform, 2012), ressaltam algumas mensagens fundamentais que serviram, em Portugal, de mote para a construção do referencial de governança estratégica da implementação das EEI (conforme consta das Estratégias aprovadas):

- A natureza contínua e incremental do processo de envolvimento e interação organizacional, participado por um extenso elenco de atores chave do ecossistema de inovação e relevado como condição *sine qua non* para a sua compreensão, interiorização, apropriação do processo e para o seu vínculo durante a implementação;

- A importância do alinhamento entre a dimensão regional, que lidera e dinamiza a inovação de base territorial e a dimensão nacional de algumas políticas cruciais para as EEI como a de I&DT;

- O papel renovado para os agentes do setor público, para além da decisão e do controlo, enquanto facilitadores, animadores, mediadores e gestores das redes de inovação;

- Uma orgânica típica de referência – uma comissão orientadora e múltiplos grupos de trabalho temáticos, apoiados e articulados por uma equipa de gestão.

O documento de síntese da ENEI (IAMPE, 2014) aprofunda a estrutura genérica de governança proposta pela COM com um esquema orientado para a fase de implementação em que consta já a referência à articulação entre a estratégia Nacional e as EREI e um breve guião de um modelo de governança regional indicativo. Destacam-se, pela especificidade de surgirem em exclusivo na "fase operacional" das EEI, a proposta de criação de um Conselho Regional de Inovação (CRI) (à procura de

"legitimidade institucional"), a afetação das responsabilidades da equipa de gestão às Estruturas de Missão dos Órgãos de Acompanhamento das Dinâmicas Regionais[50], que também deveriam assumir o acompanhamento e monitorização da estratégia, e a proposta de um órgão para a "representação cruzada dos organismos nacionais com a Equipa Executiva Regional".

Esta estrutura funcional de governança operacional foi efetivamente adotada – e adaptada – pelas regiões nas suas EEI. De facto, a análise comparada das redações finais dos documentos das EEI Regionais[51] permite reconhecer a influência desta matriz como base dos modelos de governança das regiões. No entanto, importa dar nota de algumas variantes específicas que resultam quer da *praxis* governativa vigente nas CCDR/POR, quer do lastro experimental acumulado durante governança da fase de conceção das EEI regionais, nomeadamente:

- A generalidade das regiões canaliza as responsabilidades de orientação estratégica e articulação externa para os CRI, mas apenas a regiões Norte, Alentejo e Algarve constituem este órgão *de novo*, por oposição às Regiões Centro e Lisboa, que optam por alargar as composições e/ou introduzir as agendas EEI nos seus Conselhos Regionais (já existentes no contexto da regulamentação orgânica das CCDR). Apenas na região Centro surge a figura autónoma de um Conselho Coordenador com a responsabilidade de dirigir os trabalhos de desenvolvimento da EEI, enquanto em Lisboa é criada a personalidade do coordenador da EEI, integrado numa Comissão Executiva, que acumula as competências de equipa de gestão;

- Nos casos (regiões Norte, Alentejo e Algarve) em que os CRI são efetivamente constituídos, a articulação com Conselhos Regionais é sempre exigida como componente do modelo. Em contraste com o facto de, embora mencionada, a articulação com a governança da ENEI nunca ser formalizada;

- As regiões de Lisboa e Centro introduzem uma figura consultiva adicional (o Conselho Consultivo em Lisboa e o Grupo de Aconselhamento Estratégico no Centro), integrados por personalidades e especialistas com conhecimento da região e do processo de inovação para uma especialização inteligente;

- As Equipas de Gestão surgem autónomas, exceto no caso da região de Lisboa em que esta integra a Comissão Executiva. Estas equipas assumem um papel diversificado de articulação entre órgãos, de apoio logístico e secretariado, de dinamização, nomeadamente dos grupos de trabalho, e de comunicação. As responsabilidades de produção de informação de acompanhamento, de monitorização e de apoio à avaliação são segregadas num Observatório dedicado nas EEI do Norte e Algarve. Na região Alentejo as equipas emitem parecer sobre as propostas das plataformas, enquanto na região Algarve os membros das equipas são destacados como peritos nas Unidades Técnicas de Dinamização. A absorção das suas responsabilidades pelos Órgãos de Acompanhamento das Dinâmicas Regionais fica por referir.

Na base da pirâmide de governança operacional das EEI surgem invariavelmente os Grupos de Trabalho (ou Plataformas de Inovação). Esta sua posição na estrutura de governança demonstra a sua contribuição para o processo preconizado, uma vez que são propostas como fóruns de descoberta empreendedora por excelência e o garante da renovação em fase de implementação. Por outro lado, resulta claro que correspondem às componentes do modelo em que se reproduz mais diretamente o diagnóstico das lacunas regionais em matéria de inovação e as expetativas subsequentemente canalizadas para a implementação das EEI. O seu desenho específico diferencia-se de diversas formas:

- Embora todas as regiões tenham definido Grupos de Trabalho (GT) de índole temática, nas regiões Norte, Lisboa e Algarve foi ambicionado constituir um GT por cada domínio diferenciador, enquanto nas regiões do Alentejo e do Centro os GT criados correspondem já a uma interligação potencial entre domínios diferenciadores;

- Relativamente à natureza das atividades propostas, é transversal a intenção de promover a coordenação e federação de atores relevantes, a identificação de projetos e investimentos estruturantes, e o aprofundamento e detalhe de linhas de ação potenciais; No entanto, na região Norte abre-se a possibilidade de desenvolver intervenções diretamente (ao nível da

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[50] Tal como previstos em Setembro de 2014 pelo modelo de Governança dos Fundos (DL 137/ 2014 de 12 e art.º 59.º e 60.º).
[51] Na análise efetuada apenas se consideraram os modelos de governança das EEI Regionais do Continente, para salvaguardar a comparabilidade, considerando a especificidade do enquadramento governativo da autonomia regional.

brokerage ou da *market intelligence*) e em particular no Algarve esta lógica é segregada numa figura autónoma, a Unidade Técnica de Dinamização, que é assumida como um balcão único de consultoria e apoio à inovação. Outras atividades menos frequentes são a dinamização da internacionalização (Centro, Algarve) e a disseminação do conhecimento e observatório de tendência (Algarve). Finalmente, é também transversal a responsabilidade de elaboração de propostas relativas ao conteúdo de AAC dedicados, ao seu calendário e também a critérios de seleção, tal como a ENEI já referia explicitamente;

- Relativamente à liderança a Região Norte aponta para um representante da CCDR, a região do Alentejo para a indicação de uma entidade reconhecida, a região de Lisboa é aponta uma personalidade relevante da área, a região Centro nomeia um perito externo;

- Relativamente à composição são ubíquas as referências à hélice quádrupla, e ao ajustamento dos atores representados à temática. Evidenciam-se o relevo dado ao setor empresarial na região Norte, sugerindo alguns critérios para a seleção dos atores a envolver, a menção específica da participação de agências públicas na região de Lisboa;

- Uma última característica que é possível comparar nos enunciados dos modelos de governança das EEI regionais prende-se com o envolvimento dos peritos, constatando-se que na fase de implementação deixam de estar presentes os peritos e os consultores que apoiaram a elaboração da estratégia. Em comum, o conjunto das propostas partilha a ideia de recuperar, no âmbito da avaliação da EEI, a colaboração com o perito internacional que efetuou a avaliação independente na fase de conceção. Contudo, surgem mais referências explícitas à contratação de especialistas, em papéis e contextos distintos: A região Norte refere a presença, em cada plataforma de inovação, de um perito internacional e de um perito relator (em representação da CCDR); a região Alentejo sugere a oportunidade de contar com peritos na Unidade Técnica de Gestão; a região de Lisboa considera importante contar com peritos em questões de inovação no seu Conselho Consultivo; a região Centro apresenta os seus Grupos de Trabalho coordenados por peritos externos à CCDR; e, o Algarve faz convergir nas suas Unidades Técnicas de Dinamização peritos da Equipa de Gestão e consultores externos.

QUADRO 3. SÍNTESE DA ESPECIFICIDADE DAS FORMULAÇÕES DOS GRUPOS DE TRABALHO NAS VERSÕES FINAIS DAS ERE

Grupos de Trabalho Temáticos - Formulação prévia EREI					
Regiões	Tipologia	Coordenação	Composição	Caderno de encargos	Articulação interna
Lisboa	Um Grupo de Trabalho (GT) 0por cada um dos Domínios, criados na fase de conceção da EREI. Podem surgir novos GT em fase de implementação	Personalidade relevante na área respetiva. Possibilidade de liderança rotativa	Comunidade empresarial Instituições de ensino superior Entidades de interface e de suporte Entidades públicas relevantes Poderão ocorrer configurações e dimensões variáveis ao longo da sua existência. O líder do grupo mobiliza em cada momento os agentes mais relevantes.	Identificação das plataformas tecnológicas mais relevantes Identificação das tipologias de intervenções prioritárias Construção de iniciativas estruturantes Definição dos critérios de seleção de intervenções Comunicação da estratégia Monitorização e avaliação do desempenho Realização de de exercícios de *benchmarking* e *peer review*	O líder do grupo será o elemento de ligação com a Comissão Executiva
Algarve	Um Binómio Unidade Técnica de Dinamização (UTD) + Grupo Temático de Acompanhamento (GTA), por prioridade temática	UTD - Peritos da Equipa de Gestão GTA - Estrutura de Missão para a RIS3?	UTD - Apoio de peritos/consultores externos GTA - Representantes dos centros de competências, das empresas e das associações empresariais de âmbito setorial e de organismos da administração regional desconcentrada. Sempre que possível, deverão incluir parceiros externos à região, nas áreas empresariais e da I&D	UTD - Apoio e promoção da investigação aplicada, apoio ao empreendedorismo, à inovação, à internacionalização, integração em redes internacionais e atração de investimentos GTA - Difusão do conhecimento e da inovação. Encontro e de partilha entre as diferentes partes interessadas	Sem referências
Centro	Grupos de Trabalho (GT) orientados para as Plataformas de inovação que interligam os domínios e as prioridades transversais da EREI	Peritos externos de reconhecido mérito convidados pela CCDR	Empresas e associações empresariais Pólos e Clusters Universidades e Centros de Investigação Instituições da AP Central Agências de Desenvolvimento Local e Regional Municípios	Definição de linhas de ação Promoção de parcerias para a apresentação de projetos Dinamização da inovação e a internacionalização Cooperação e trabalho em rede	Os líderes dos GT realizam reuniões de harmonização entre si e integram o Conselho Coordenador. As propostas dos GT são validadas pelo Conselho Coordenador.
Alentejo	Plataformas de Inovação (PI) que exploram a complementaridade entre os domínios EREI. Poderão constituir até 2 seções, em temáticas específicas	Entidade com notoriedade reconhecida no âmbito da respectiva temática, selecionada pelo Presidente da CCDR	Empresas (produtores de tecnologia e utilizadores avançados) Universidades e Institutos Politécnicos, Entidades do Sistema Científico e Tecnológico Associações Empresariais Pólos e Clusters, Parque de Ciência e Tecnologia do Alentejo	Dinamização e federação de atores regionais Concertação de iniciativas Identificação de projetos e investimentos estruturantes Elaboração oportuna de propostas de avisos de concurso	Os contributos das PI deverão ser apresentados ao Conselho Regional de Inovação após parecer da Equipa de Gestão O CRI poderá efetuar propostas às AG dos PO financiadores
Norte	Secções do Conselho Regional de Inovação orientadas para os domínios prioritários EREI, que se constituírem como Plataformas Regionais de Especialização Inteligente	Perito relator regional (representante da CCDR-N)	Empresas, convidadas pelo CRI, mediante determinados critérios (eg exportadoras, investimento em I&D, capital estrangeiro, etc.) Entidades do SCT (centros de I&D e centros tecnológicos) Associações empresariais setoriais Atuais pólos e clusters	Definição de linhas de intervenção ou atuação direta nos domínios: "brokerage", gestão da inovação, aumento da capacidade de absorção tecnológica das PMEs, federação de iniciativas, definição de linhas estratégicas, "market intelligence" e internacionalização Proposta de linhas de ação ou critérios de seleção para avisos de concurso específicos	As recomendações e propostas resultantes dos fóruns são sintetizadas e redigidas pelo representante da CCDR

Fonte: Agência para o Desenvolvimento e Coesão (2014-2020).

Com base na informação sobre o estado da arte da governança regional das EEI,[1] coligida pela AD&C junto das CCDR's e das Estruturas de Missão dos Órgãos para o Acompanhamento das Dinâmicas Regionais (OADR), foi possível constatar que:

- A generalidade das regiões já tinham aprovado a composição dos seus Conselhos Regionais de Inovação/Fórum de Acompanhamento Estratégico (só o POR Norte mantinha uma proposta de composição ainda não aprovada em CR). O funcionamento formal e regular destas estruturas[2] participativas, não se encontrava ainda totalmente operacional (as regiões Centro, Algarve e Lisboa apresentavam as estruturas mais funcionais). As dificuldades de operacionalização formal eram explicadas por limitações de recursos humanos e mudanças nas estruturas diretivas das CCDR;

- Neste contexto de operacionalização das suas estruturas de governança das EEI, as Regiões Centro, Algarve e Lisboa, já tinham iniciado a implementação e operacionalização das Plataformas de Inovação. A dinâmica junto dos atores envolvidos também já tinha induzido alguns mecanismos de ajustamento e melhoria dos critérios de avaliação do mérito dos AAC (Centro e Lisboa). No entanto, ainda não tinham sido implementadas abordagens mais proactivas, como por exemplo a abertura de avisos temáticos.

A nível nacional e dando corpo ao definido no modelo de governança da RIS3, o Conselho Coordenador da ENEI, coordenado pela ANI já reuniu formalmente e prepara o primeiro relatório de monitorização.

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[1] Pouco mais de 18 meses depois da sua formalização - Reportada a Julho de 2016.
[2] Designadas por Conselho Regional de Inovação (no modelo de governança dos PO Norte, Lisboa, Alentejo e Algarve) e como Fórum de Aconselhamento Estratégico do Ecossistema Regional de Investigação e Inovação (assegurado pelo Conselho Regional Alargado no PO Centro).

3.1. Os processos de operacionalização e governança das EREI do Centro e do Algarve

Para fechar a nossa análise sobre os diversos aspetos da implementação das EEI nas regiões Portuguesas selecionámos os casos das regiões do Centro e do Algarve, adiantando algumas notas breves de relevo sobre o percurso e sobre o estado presente do processo de implementação dos seus modelos de governança das suas EEI.

3.1.1. A dinâmica da governança da RIS3 Centro

A primeira nota a salientar no âmbito da concretização do modelo de governança do Centro, tem a ver com o facto de a EEI não ter sido desenvolvida como exercício autónomo (como aconteceu noutras regiões). A EEI, logo no final de 2012, foi integrada no exercício mais amplo de preparação da estratégia de desenvolvimento da região e da definição do Plano de Ação Regional (PAR) que sustentariam a proposta de PO Regional. Uma opção que viria a facilitar a complementaridade e a sinergia entre as abordagens estratégicas (da EEI e do PAR) ao longo de todo o processo. Esta convergência de princípio assumida pela CCDR apenas foi possível pela forma célere como foi operada a modelização e operacionalização dos órgãos de governança, que resulta da opção pelo alargamento do Conselho Regional para acolher a dimensão da EEI, agilizando a interiorização do racional no processo consultivo regional, como no imediato envolvimento dos stakeholders[1] que permitiu a consolidação precoce da matriz do relacional estratégico e a continuidade operativa dos órgãos da governança e dos parceiros do processo de conceção na fase de implementação.

A segunda questão que se apresenta como fator distintivo da operacionalização do modelo de governança da região Centro refere-se à interpretação dada, em forma e essência, à figura dos Grupos de Trabalho (GT), em diferentes estádios:

- Em sede da construção estratégica da EEI, porque em detrimento de tomar os domínios diferenciadores temáticos como ponto de chegada, se organizaram em torno de uma abordagem horizontal para a descoberta empreendedora, assentando a sua estrutura em quatro plataformas de inovação, segundo o pressuposto da variedade relacionada (tendo sido dinamizadas quatro plataformas: Soluções industriais sustentáveis; Valorização dos recursos naturais endógenos; Tecnologias para a qualidade de vida e Inovação territorial);

- No âmbito do processo de planeamento, porque a constituição dos GT foi relevada como primeiro passo essencial do processo de implementação, envolvendo a sua constituição, reunião, coordenação e harmonização horizontal (entre GT) e culminando com a apresentação das linhas de ação ainda em Abril de 2015;

- No contexto da lógica de operacionalização das EEI, porque as linhas de ação prioritárias deram substância concreta ao mecanismo de tradução da descoberta empreendedora em termos da avaliação do mérito regional, com contributos, em diferentes momentos, para o aprofundamento e subsequente ajustamento dos critérios de seleção de operações;

- Como figurinos estabilizados e resilientes. Após a sua constituição, estes GT atravessaram um período de relativa inatividade, mas uma vez desencadeado o processo de revisitação e aprofundamento das linhas de ação, a sua estrutura reagiu de forma ativa e renovada no âmbito da consulta pública entretanto decorrida.

A terceira característica que sobressai no modelo de governança da implementação da EEI da região Centro reside na condução voluntária de um trabalho interno de monitorização da aplicação dos 'critérios de alinhamento com a EEI regional', um processo sistemático de observação e aprendizagem sobre a prática de aplicação das matrizes de avaliação do mérito regional, que não só conduziu à adoção de um referencial mais exigente e seletivo para a avaliação do alinhamento com a EEI nos AAC, como permitiu a maturação de uma reflexão sobre a razoabilidade do critério de alinhamento com as EEI em alguns instrumentos, o conceito e o objeto do alinhamento, os estrangulamentos inerentes à classificação de tipologias específicas de projetos, ou as lacunas e excessos das matriz de linhas de ação aplicada.

Uma última referência de governança a sinalizar é o facto de na 5.ª reunião do Conselho Coordenador da EEI, se ter aprovado o programa de trabalhos que estrutura o que denota

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[1] Durante o primeiro semestre de 2013 foram realizados 5 seminários, 5 workshops, 70 reuniões e 2 questionários, que envolveram um agregado de 1250 participações.

maturidade do sistema e pode ser descrito como lançamento do segundo ciclo de governança estratégica, formalizando os seguintes eixos de atuação:

- A Capacitação e Comunicação, que assentam no contributo dos *clusters* sediados ou com atividade na região, organizados num consórcio que irá prestar apoio técnico à CCDR na articulação inter-regional e na ligação das empresas ao SCT, e no enraizamento do processo EEI na Região;

- A Monitorização, em articulação com a ANI, e na dimensão interna já referida;

- O Desenvolvimento, explorando as outras facetas da descoberta empreendedora, como o estímulo à procura qualificada de projetos estruturantes ou piloto, criando as bases para uma rede regional de *brokers* de inovação, promovendo a internacionalização do processo da EEI do Centro, sinalizando e dinamizando áreas prioritárias e reforço das sinergias com outros fundos Europeus e atentando aos instrumentos de qualificação e inserção profissional de recursos humanos.

3.1.2. A dinâmica da governança da RIS3 Algarve

Ao contrário do modelo do Centro, o Algarve optou por efetuar um exercício autónomo de definição da sua EEI. Este exercício teve duas particularidades:

- Tinha uma base referencial assente no Plano Regional de Inovação desenvolvido para o período 2007-2014 e a avaliação feita sobre a sua fraca concretização;

- O processo de construção foi reforçado com base em duas candidaturas SIAC (no fecho do QREN), dois exercícios de descoberta empreendedora em torno dos domínios identificados no disgnóstico da RIS3, que permitiram gerar 17 comunidades de inovação, que validaram desafios regionais e projetos capazes de reforçar a dimensão relacionada dos domínios identificados.

A coincidência destas duas abordagens (encadeadas no tempo de construção e consolidação da RIS3 Algarve) permitiram:

- Robustecer o modelo de operacionalização tendo por base as lições do passado. A mudança de paradigma, não se centrou só na alteração dos domínios prioritários, mas claramente no foco de abordagem, passou-se uma estratégia de potencial (a região tem capacidade de…), para uma estratégia de realização (a região já faz e pode ser excelente em…). Como refere a estratégia "Fazer novo com o velho…";

- Rever a abordagem da governança, como vetor para a concretização de resultados. O modelo de Agência de Inovação, definido no passado, concretiza-se agora num modelo mais operacional (que se pretende que esteja na esfera de dependência da região);

- Sensibilizar os atores regionais. A capacitação permitida pelas comunidades de inovação, fomentou novas ideias e o reforço de cruzamento de domínios e atores para encontrar repostas aos desafios identificados na região. Esta dinâmica permitiu o aparecimento logo na fase de arranque do PT2020 de um conjunto relevante de candidaturas alinhadas com o novo paradigma de escolhas prioritárias (em particular no ID&T).

Também ao contrário do que se verificou no Centro, o Algarve decide criar de raiz as suas estruturas de Governança, a começar pelo CRI. Este processo no entanto mostrou-se relativamente lento. Apesar de validada a sua constituição em Conselho Regional desde Fevereiro de 2015, só no final de 2016, se constitui o CRI e só em 2017 se iniciam as primeiras reuniões dos GT. Também neste particular, o Algarve segue uma linha diferente do Centro. Os GT previstos, não se centravam em desafios, mas nos domínios específicos. O modelo pretendiam retomar parte da dinâmica de construção, residente nas comunidades de inovação (da fase de conceção) e funcionar como verdadeiras plataformas de descoberta empreendedora.

A coordenação da operacionalização desta Estratégia entendeu dinamizar estes GT numa lógica híbrida, não sendo claro nesta fase, se vão ser todos os GT operacionalizados, por domínio, ou se a dinâmica associada à interação com os atores, levará esta operacionalização para uma lógica de desafios. Até à data foram dinamizados quatro GT:

- Dois, poderemos entender que em linha direta com o programado (Energia Renováveis – designada Regional Smart Grid Approach e do Mar, Pescas e Aquacultura, agora designada por Economia do Mar);

- E dois de forma híbrida, que não seguem a lógica de domínio definida (aproximando-se mais do conceito de desafios, com alguma aproximação ao modelo do Centro), mas mantendo ligação mais ou menos próxima com um ou mais dos domínios definidos. Um com ligações transversais ao que se previa no domínio do TIC, Indústrias Culturais e Criativas, designado agora por Região Inteligente Algarve e que está mais focado na dimensão Regiões Inteligentes com apelo às TIC (assumindo transversalidade a domínios como o Mar, Turismo ou Saúde e Bem Estar). Outro, com ligações ao domínio Turismo e Lazer, designado por Centro para a Inovação e Conhecimento em Turismo.

Ao contrario do modelo do Centro, até ao momento, o trabalho destes GT tem-se centrado mais na organização institucional e capacitação de atores e das redes, que em questões de processo ligada à dinâmica da procura.

Finalmente, o modelo de monitorização previsto, ainda não está em velocidade cruzeiro, pelo que a incorporação dos resultados da dinâmica de ajustamento da Estratégia é ainda um processo pontual.

Da análise comparativa dos dois processos, podemos tirar algumas elações para explorar em trabalho de campo mais fino:

- Ambos os processos, com maior ou menor integração na fase de planeamento estratégico, têm mecanismos de maturidade de implementação, demasiado longos e pouco compatíveis com a dinâmica da execução. Mas a diferença de contexto (massa critica relevante, estruturação do ecossistema de inovação, perfil de inovação das instituições), parece fazer a diferença em termos da "qualidade" da operacionalização e eventualmente de obtenção de resultados;

- Parece ficar claro, que este não é um processo "absorvido" pelas estruturas de dinâmica do processo (seja as CCDR, OADR, ou plataformas mais ou menos formais). Nuns casos por incapacitação, noutros por falta de estruturas profissionais com dedicação exclusiva, ou ainda por incapacidade de todos os atores entenderem o alcance do processo (não ficou claro do levantamento, que mandato é proposto a cada um destes GT, como fazem chegar as suas propostas formalmente ao CRI, e com que consequências ao nível de decisão). A mobilização de peritos (a sua referência sem concretização) mostra a necessidade de trazer para este nível de governança, capacidades que não estão adquiridas. Parece-nos que este mecanismo de dinamização da descoberta empreendedora tem que ser revisitado;

- Os mecanismos de monitorização e avaliação são muito relevantes, se encontrarem espaço para modelar a decisão. Temos que clarificar como estão assegurados estes processos na estrutura de implementação. Nomeadamente como podem estes GT ou o próprio CRI, em função da dinâmica, propor abertura de concursos mais focados nos objetivos as EEI.

4. CONCLUSÕES, REFLEXÕES E RECOMENDAÇÕES

"As estratégias de especialização inteligente consistem em permitir às regiões transformar as suas necessidades, pontos fortes e vantagens competitivas em bens e serviços comercializáveis. Têm por objetivo dar prioridade aos investimentos públicos em investigação e inovação mediante uma abordagem para a transformação económica das regiões, com base nas vantagens competitivas a nível regional e tendo em vista facilitar as oportunidades de mercado em novas cadeias de valor inter-regionais e europeias. Ajudam as regiões a antecipar, planear e acompanhar o seu processo de modernização."

European Commission, 2017

Os dois ângulos complementares de abordagem à implementação das EEI que apresentámos no decurso deste artigo - a experiência inicial da operacionalização dos seus principais instrumentos de apoio e a arquitetura dos seus modelos de governança regional – não esgotam o amplo panorama analítico do desafio da inovação para a especialização inteligente em Portugal, mas permitem já adiantar algumas leituras críticas sobre alguns dos seus aspetos fundamentais.

Num considerando prévio, importa sublinhar que qualquer análise retrospetiva dos primeiros passos da concretização das estratégias de investigação e inovação para uma especialização inteligente em Portugal tem forçosamente que ter em conta o contexto de forte pressão sobre os recursos institucionais em que aquela decorreu, em resultado da sobreposição e concorrência dos processos de encerramento do QREN, de lançamento da operacionalização do PT2020 e de transição do

modelo governança estratégica da fase de conceção para a fase de implementação das EEI. Do ponto de vista do posicionamento institucional perante as EEI em sede de implementação identificam-se duas tensões que persistem latentes:

- Entre os centros nacionais de competência das políticas públicas do domínio da competitividade e internacionalização, responsáveis pela conceção dos instrumentos mobilizados ao abrigo dos OT 1 e OT 3, que mantiveram uma lógica de continuidade com o período do QREN (menos sensíveis aos processos das EEI), e os centros regionais de racionalidade estratégica das EEI, investidos no processo de descoberta empreendedora regional e potenciais beneficiários líquidos da redistribuição do poder de influência sobre aquelas escolhas prioritárias do financiamento;

- Entre a função de operacionalização da programação regional, preocupada com a rapidez de injeção de financiamento na economia e nas regiões, com as incontornáveis guilhotinas temporais da execução do financiamento comunitário e com as questões eminentemente operativas do processo de seleção (em linha com os trâmites da governança do PT2020), e a função de coordenação e dinamização das EEI regionais, focada no aprofundamento da descoberta empreendedora e na qualificação subsequente da oferta e da procura de financiamento, segundo um modelo de governança proprietário, mas sem autonomia para conceber ou operacionalizar o seu próprio instrumental de financiamento.

Estas oposições explicam a matiz comportamental dos agentes envolvidos, algures entre a visão da EEI enquanto um condicionamento a gerir (induzindo alguma rigidez à seleção), o que eventualmente pode levar à sua "desvalorização"[1] no processo de escolha, e o seu oposto, que reforça a importância da máxima articulação dos investimentos com a EEI (como garante da sua contribuição para uma trajetória virtuosa das economias regionais) e a indução da diversificação (variedade relacionada) da sua base económica.

O balanço efetuado nesta ilustra, no entanto, que a implementação das EEI foi em si mesmo, à imagem da estratégia, um desafio de inovação regional e um processo de experimentação coletiva, com consequências na sua operacionalização:

- Enquanto processo de governança, as regiões são confrontadas com a complexidade da implementação da EEI sem efetivo apoio técnico especializado, na sequência do (natural?) afastamento dos consultores nacionais e do perito internacional pós aprovação, circunstância reforçada pela (ainda) discreta intervenção da ANI nos termos previstos no quadro da coordenação nacional;

- A tradução do alinhamento com a EEI regional enquanto critério de seleção de candidaturas traduziu-se no primeiro (e em alguns casos no único) passo de operacionalização das EEI regionais;

- A reflexão interna sobre o conceito e as metodologias de avaliação quantitativa e qualitativa do alinhamento, vertidas nas matrizes de mérito regional, teve como virtude o teste da inteligibilidade discursiva dos documentos da EEI e o desenvolvimento de uma destreza interpretativa das equipas de avaliação, tendo ainda representado o primeiro passo de aprofundamento estratégico efetuado pelos GT;

- A constituição dos GT e dos CRI ainda não se encontra concluída em todas as regiões, o que em parte demonstra a variabilidade do compromisso regional com a continuação do processo de descoberta empreendedora (PDE);

- Independentemente do maior ou menor vínculo das regiões às EEI, estas parecem não demonstrar (ainda) autonomia para traduzir a procura qualificada resultante do PDE dos seus GT em avisos temáticos, o que condiciona a credibilidade do próprio processo perante os seus agentes e compromete a sua sustentabilidade;

- A ausência de um apoio especializado (consultoria de inovação) pode ajudar a compreender a aparente menor sensibilidade para a importância e visibilidade dos mecanismos de monitorização da procura e a fraca dinamização dos GT em algumas regiões (questão mais

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[1] Esta "desvalorização" assume diversas formas, entre as quais se pode incluir o descompromisso dos PO relativamente à fixação de metas ou quotas para o volume de investimentos alinhados com as EEI fora do OT1, a reduzida ponderação associada aos critérios de alinhamento com as EEI no processo de seleção ou a remissão para a ENEI em detrimento da EREI enquanto referencial para o alinhamento, etc..

complexa, se tivermos em consideração que a exigência técnica do apoio à inovação é um problema que se coloca ao próprio processo de seleção);

Relativamente às duas questões de investigação, assumindo que o processo ainda obriga a um trabalho de terreno mais fino, podemos inferir que, no que respeita ao processo de implementação[1]:

- Os mecanismos programados, ainda que nem todos com o mesmo nível de concretização nas diferentes regiões, têm induzido uma concentração de recursos e de procura no contexto dos domínios prioritários;

- Os critérios de seleção, e os mecanismos de participação, têm sensibilizado e capacitado os *stakeholders* para uma abordagem mais eficaz à entrega de resultados;

- Os objetivos da política estão a encontrar dinâmicas na procura local das regiões, pelo que, embora sendo ainda cedo para avaliar resultados, podemos concluir que as EEI Regionais e a articulação com a Estratégia Nacional (ainda que necessitem de alguma simplificação de mecanismos e melhoria de comunicação), asseguram a entrega dos objetivos da política com um foco nas prioridades e linhas e ação das regiões.

No que respeita aos mecanismos de participação[2], podemos concluir que para a concretização plena das condições necessárias à efetiva participação, faltará concretizar a constituição dos mecanismos previstos de governança em todas as regiões, e encontrar forma e mecanismos para garantir PDE eficiente e com verdadeiro impacto no economia e nas cadeias de valor de cada região. Em função da investigação realizada, podemos desde já inferir, que (ainda que de forma assimétrica no país), os mecanismos previstos e já implementados garantem uma participação dos atores no contexto da hélice quádrupla. No entanto, e com base no trabalho já realizado, esta participação não tem sido qualitativamente apreendida por todos os atores, o que levanta algumas questões para trabalho futuro:

- Existem lacunas de comunicação do processo. Não fica claro para os atores envolvidos, nos PDE de que modo se deve desencadear os processos de ajustamento contínuo das estratégias. Este mecanismo, embora enfatizado, não é claro nos guias de referência como se operacionaliza formalmente, e está omisso das estratégias nacionais;

- Também não fica claro, como os participantes influenciam o processo de ajustamento e de foco da procura (embora nalguns casos se refira a formulação de recomendações às AG);

- A não divulgação qualificada de informação de monitorização da procura (no contexto de trabalho regular dos GT), inibe a percepção do alcance real das propostas e a sua necessidade de ajustamento ou o seu potencial de proatividade (considerando o ritmo de compromisso das dotações, começam a escassear recursos de financiamento (nalgumas regiões) para se conseguir uma intervenção consequente). Que consequências este facto pode ter na mobilização da participação?

- Não foi possível (ainda), gerar a partir da dinâmica de participação, iniciativas autónomas de dinamização da procura (nomeadamente capacidade de abertura de AAC temáticos), ou de alargamento ou abandono de domínios prioritários;

- O foco tem assentado nos projetos e pouco no ecossistema de inovação, apesar de na fase de construção se terem identificado ecossistemas incompletos e com lacunas;

- Estes processos, de alteração "estrutural", são processos longos, que não têm capacidade de concretizar a mudança, num ciclo de programação. Pelo que se deveria estar a trabalhar no contexto de preparação das EEI do pós-2020;

- Estes constrangimentos obrigam no mínimo a revisitar os mecanismos definidos para a operacionalização do PDE, não podemos correr o risco das EEI "…*virem ser implementadas de forma a que se tornem num procedimento de planeamento top-down, porque não se entendeu a importância do processo de descoberta empreendedor…*" (*Kyriako,2017*).

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[1] Questão de Investigação: Como está o processo implementado a permitir a entrega desta política numa base local? (como chegar aos resultados…).

[2] Questão de Investigação: Estarão a ser garantidos os mecanismos de participação e de incorporação dos contributos dos diferentes atores envolvido, na implementação das Estratégias? (como estamos a capacitar os atores para robustecer os ecossistemas regionais de inovação…)

Em termos de trabalho futuro de investigação:

- Torna-se necessário um trabalho mais fino, em que sejam acompanhados os processos de participação e propostas metodologias para incorporar nos modelos de governança em consolidação (difundindo boas práticas e metodologias de envolvimento dos atores);

- Dinamizar os mecanismos de monitorização e avaliação dos processos e dos primeiros resultados, processo indispensável ao arranque dos mecanismos de ajustamento das estratégias;

- Acompanhar as medidas de reforço dos ecossistemas de inovação e de articulação com a política de *clusters*, por forma a amplificar os resultados e o impacto dos instrumentos e das escolhas definidas;

- Acompanhar projetos piloto de PDE em diferentes geografias (e.g. rural/urbano), mais ou menos intensivas em tecnologia, por forma a garantir escalabilidade às práticas e metodologiasbem-sucedidas.

BIBLIOGRAFIA

Arnkil R., et al. (2010), *Exploring Quadruple Helix. Outlining user-oriented innovation models*. University of Tampere, Work Research Center, Working Paper No. 85 (Final Report on Quadruple Helix Research for the CLIQ project, INTERREG IVC Programme).

DG REGIO, (2014). *Condicionalidades Ex-Ante ,* s.l.: s.n.

European Commission, (2017). Reforçãr a inovação nas regiões da Europa: Esatrégias para um crescimento resiliente, inclusivo e sustentável. Comunicação da Comissão ao Parlamento Europeu, ao Conselho, ao Comité Económico e Saocial Europeu e ao Comité das Regiões (COM(2017)376 Final).

European Commission, (2016). *Implementing Smart Specialisation: A Handbook.* Brussels: Publications Office of the European Union.

European Commission, (2014). Smart Specialisation and Europe's Growth Agenda. Luxembourg: Publications Office of the European Union.

IAMPEI, FCT, ANI, COMPETE, (2014). Estratégia de Investigação e Inovação para uma Especialização Inteligente (ENEI), s.l.: s.n, pp.115.

Kyriakou, Dimitrios, (2017). Governing smart specialisation. NY: Routledge, pp.234.

McCANN, P., (2015). The Regional and Urban Policy of the European Union - Cohesion, Results-orientation and Smart Specialisation. UK: Edward Elgar, pp.286.

Portugal, Governo de (2014). Despacho conjunto do Conselho Interministerial de Coordenação (CIC) , s.l.: s.n.

Reek, Willem (2013). RIS3 Governance Guide. Seville: S3 Platform, pp.30.

S3Platform, (2012). Guide to Research and Innovation Strategies for Smart Specialisation (RIS3), Sevilha: pp. 122.

Enhancement of innovations through the public programmes: Does it work?

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ABSTRACT

The current policy orientation towards competitiveness requires application of innovative approaches. The public programmes intended to support innovations in companies and thus increase competitiveness and employment. From this perspective, our research aims at answering a research question whether the assistance of the European Regional and Development Fund in firms has impact on employment, sales and profit of supported firms. The study is based on conducting a counterfactual impact evaluation of the Operational programme Enterprises and Innovations (OPEI) in the Czech Republic which took place during the period of 2007-2013. We have analysed a data sample of 31,604 firms, of which 1,173 were applicants for the ERDF assistance. The data sample enabled us to test the impact of the ERDF assistance among the successful applicants (n= 583) and compare them to i) non-applicants (n=30,431); and ii) to the rejected applicants (n= 590). The method we used was a propensity score matching (PSM). We have investigated the whole sample and also on samples divided into three groups according to the size of applicants (firms up to 50 employees, 50 – 250 employees and larger firms). We have found statistically significant estimates of the positive impact of the ERDF on employment, sales and profit.

Key words: Counterfactual Analysis, Impact Evaluation, Structural Funds, the Czech Republic

JEL Code: C31, C33, D61

1. INTRODUCTION

The political objectives usually concern creation of GDP and employment. It relates also to the EU Cohesion Policy (EC, 2014). Economic crisis at the end of the last decade, or current political development in the EU integration process belong among factors cutting back available budget to this policy. Moreover, it stresses importance of knowing whether the policy works or not. Therefore, evaluators and researchers focus on these public policy programs to rigorously evaluate whether it works or not.

The EU Cohesion policy belongs among evaluation capacity-creating policies. It is one of the most evaluated policies in Europe (Ferry, 2009, p. 14). Thus, its evaluation requirements create positive pressure on both the evaluation demand and supply. Rigorous evaluation methods were rare in the EU Cohesion Policy (Frondel and Schmidt, 2005). First systematic attempts appeared during ex-post evaluation of the investment in companies in the programming period 2000-2006 (AVAPP, 2012; Czarnitzki, Bento, and Doherr, 2011; GEFRA and IAB, 2010). Thus, the approach to evaluations moved more towards rigorous and theory-driven approach, though it is a long process and qualitative methods still prevail (Hoerner and Stephenson, 2012).

There had not been many studies on impacts of the EU Cohesion Policy using rigorous evaluation methods (for example see Bondonio and Greenbaum, 2014; Čadil, Mirošník, and Rehák, 2017; Pokorski, 2011; Czarnitzki, Ebersberger and Fier, 2007). Our study presents results of similar evaluation conducted in the Czech Republic. The research question is whether the assistance of the European Regional and Development Fund (ERDF) in firms had impact on employment, sales and profit when the supported firms attempt to improve their performance by innovations supported by public funding.

The paper is organised as follows. First, a programme Innovation is described. The section that follows describes the data collection and methodology. Then, the fourth section presents results and discussion. Final part concludes.

2. PUBLIC INTERVENTIONS TO INCREASE COMPETITIVENESS

Not only policy-makers try to influence business environment by changing legal framework, they also actively support companies from public budgets to enhance competitiveness and employment (Dvouletý, 2017b; Minniti, 2008). They apply these measures in all stages of companies´ existence – at the prestart, start-ups and post-start-up phases (Stevenson and Lundström, 2001, p. 23). Means differ from direct subsidies loans, soft-loans on investments, guarantees, equity, to tax deductions (Dvouletý and Lukeš, 2016; Pergelova and Angulo-Ruiz, 2014) and needs in local entrepreneurial ecosystems (Terjesen, Bosma, and Stam, 2016).

2.1. Relation of support granted to companies and GDP

The discussion relating to effects of public subsidies is inconclusive. For example in their review, Pergelova and Angulo-Ruiz (2014) consider government support to companies as a policy with positive effects on companies´ performance. On the other side, Abramovsky, Battistin, Fitzsimons, Goodman and Simpson (2011) did not prove the influence on training of low-skilled workers´ employability. Hamersma (2008) demonstrated short-term positive effects on employment in the case of companies, but in the long run, however, these positive effects disappear. These results correspond with the Heckman´s statement that "Zero is not a bad number" (Economist, April 6, 1996, page 23, cited according to Wunsch and Lechner, 2008). Positive effects of entrepreneurship on the regional development may change over time and across the regions and therefore needs to be investigated continuously (Koellinger and Thurik, 2012).

The discussions on whether the policies work or not concentrate also on type of a policy and its objectives. A study of Terjesen, Bosma and Stam (2016) indicate that type of an entrepreneurship policy and clear objectives need to be implemented with respect to local entrepreneurial ecosystems. The recent discussion relates especially to support of high-growth enterprises (Shane, 2009; Stam and Bosma, 2015). It can be done by support of availability of funding, venture capital, and business angel's networks (Terjesen, Bosma and Stam, 2016).

The difference in economic performance relates also to different types of companies (Shane, 2009). The difference in GDP creation concerns newly set up companies and self-employed. For the Czech regions, the rate of new set-ups correlate with higher level GDP per capita. Moreover, the entrepreneurship policies aiming at GDP growth focuses on support to high growth enterprises delivering new job opportunities. From the perspective of the Czech regional context, Dvouletý (2017a) has recently found positive influence of entrepreneurship on economic development of the Czech regions.

2.2. Support to companies and labour market

The ultimate goal of industrial policies on labour market is to support employment. The effects of these policies differ according to type of the assistance and the target group. For example, Dvouletý and Lukeš (2016) found that the regional policies aiming to decrease unemployment rates through self-employment programmes are successful, when we choose survival rates of the subsidized businesses as an indicator of success. Dvouletý, (2017c) evaluated the regional perspective self-employment programme for unemployed in the Czech Republic, and from his economic analysis, he concludes that the programme has potential of wider usage. On the other hand, Potluka, Brůha, Špaček, and Vrbová (2016) and Potluka, Brůha, Vozár, Špaček, and Loun (2013) do not confirm clear picture about the support in companies. Employment has increased during implementation of

projects (Potluka, Brůha, Vozár, Špaček, and Loun, 2013), but the created jobs were not sustainable (Potluka, Brůha, Špaček, and Vrbová, 2016).

These inconclusive results support recommendations of Mason and Brown (2013) to aim policies towards companies with high potential to create jobs and add to economic growth. Support shifts to companies with global ambitions in entrepreneurship (Autio and Rannikko, 2016; Council of the European Union, 2010; Henrekson and Johansson, 2010).

2.3. Evaluation of public policies to support companies

The demanding process of counterfactual impact evaluations causes low application of this type of analysis of public policies. Counterfactual impact evaluations need substantial, structured, unbiased and detailed data about supported by a programme and a control group. Moreover, the evaluation teams are required to dispose strong econometric skills, scientific background and information about the labour market conditions. Empirical investigation proves that public officers are not very often equipped with those needed skills (Hoerner and Stephenson, 2012). Therefore, public authorities should support creation and development of evaluation culture and evaluation capacities to conduct counterfactual evaluations.

In the review Pergelova and Angulo-Ruiz (2014), empirical investigation on the impact of entrepreneurship policies, longitudinal data were collected to evaluate long-term impacts of the investigated programmes. It is also necessary to note that policies have to be evaluated with respect to local conditions (Preuss, 2011) and to be evaluated from perspective of the efficiency (Bia and Mattei, 2012).

To sum up, Dvouletý and Mareš (2016a, 2016b) recommend to support higher level of entrepreneurial activity that could be achieved by a combination of several factors. These are (i) infrastructure for entrepreneurships, (ii) technology centres and business incubators with appropriate activities, (iii) trainings for entrepreneurs, (iv) reduction of bureaucracy, and (v) coordination among public sector, research centres and entrepreneurs. Our analysis concentrates on innovations in companies which is the latter mentioned factor.

3. INNOVATION: A PROGRAMME FOR PRIVATE FIRMS FINANCED BY THE EU

The programme Innovation – innovative projects are a part of the Operational Programme Enterprise and Innovations (OPEI). This programme aims at increasing the innovation potential of firms in the Czech Republic. It is done through implementation of innovative projects, especially in Small and Medium Enterprises (SMEs) and research institutions.

The OPEI is implemented by the Ministry of Industry and Trade in cooperation with the CzechInvest which is an intermediary body. The EU Structural Fund ERDF and the state budget of the Czech Republic finance activities in the OPEI.

The projects in the programme Innovations are aimed at commercialisation of the results of research to accelerate innovation processes to increase competitiveness of the Czech firms. The ERDF assistance relates also to protection of intellectual property rights.

Thus, this objective should enhance long-term competitiveness, sustainable growth and balanced regional development of the Czech economy. The OPEI pays attention to the promotion of eco-efficient innovations (MIT, 2007).

The program supports activities that aim to implement an innovative project or the project for the protection of industrial property rights. Grants may be used to finance the following activities:

a) increasing the technical and practical value of products, technologies and services (product innovation);
b) increasing the efficiency of production processes and services (process innovation);
c) the introduction of new methods of organizing business processes and cooperation with research institutions (organizational innovation);
d) the introduction of new sales channels (marketing innovation).

Support to activities c) and d) is intended solely for entrepreneurs whose projects are focused on the activities of a) or b), or related to them. Grant can be used to cover the following eligible costs:

- tangible fixed assets;

- intangible assets from II. Call for proposals, large enterprises use the grant to cover up to 50% of eligible expenditure for intangible assets;
- operating costs only for SMEs;
- costs of publicity.

Support is provided as a grant in the amount of 1 to 75 million CZK. In the case of regions with concentrated support, it can be up to CZK 150 million for activities a) and b). In the case of c) and d) support is provided up to CZK 2 million. In both cases, the maximum amount of the percentage of eligible expenditure is limited by the Regional Map of the intensity of State Aid. The level of eligible expenditure is between 40% - 60% according to the call, size of the applicant and region NUTS II (MIT 2007).

The beneficiaries may be small and medium-sized enterprises. Since the call for proposals number II, also large firms may apply. The beneficiary must possess the tangible and intangible assets acquired from the aid granted for at least a period of 5 years since the date of completion of the project. It is a period of three years in the case of SMEs.

TABLE 3: SPENDING IN THE OPEI – PRIORITY INNOVATIONS DURING THE PROGRAMMING PERIOD

Year	Nr. of projects	Paid (CZK)	Mean (CZK)
2007	0	0	0
2008	2	8,139,028	4,069,514
2009	36	412,478,007	11,457,722
2010	65	604,252,476	9,296,192
2011	159	1,931,624,197	12,148,580
2012	164	2,235,187,973	13,629,195

Source: e-account (The monitoring system of OPEI) (Data valid for 16th October 2012), own calculations

The Programme Innovation – Innovation project was implemented in four calls for proposals which we have merged together into one sample. The table 3 express that there have been supported 583 firms of 1173. Some of them have got support more than once. There have been supported 332 small firms, 178 medium sized firms and 73 large firms.

TABLE 4: PUBLIC SPENDING IN THE OPEI – PRIORITY INNOVATIONS

Call	Paid (CZK)	Nr. of projects	Mean (CZK)
I.	1,006,527,609	78	12,904,200
II.	1,949,160,501	159	12,258,871
III.	1,301,765,573	141	9,232,380
IV.	934,227,998	461	2,026,525
Total	5,191,681,681	839	6,187,940

Source: e-account (Data valid to 16th October 2012), own calculations

4. DATA AND METHODOLOGY

4.1. Data

Available data sample is an important factor that affects the quality of the analysis. For analysis data from two sources is used. The first source is the CSO data for 2006 - 2010. The second source of data is the monitoring system OPEI, from which we obtained information on the amount paid to projects and amounts requested in applications (both supported and rejected applications).

In our analysis, we do not adjust the data on inflation as Battistin, Gavosto, and Rettore (2001). We use nominal values as we expect that project managers know the market situation and requirements of the OPEI. Thus, we expect that they adjusted their requirements according to the market prices. Another reason is a short period of project implementation and a stable price level in the Czech Republic. Analysis of the assistance is based on the following numbers of applicants.

TABLE 5: PROGRAMME INNOVATION - NUMBER OF FIRMS ACCORDING TO THEIR SIZE

	Size of a firm			
	Small	Medium	Large	Total
Rejected applicants	368	173	49	590
1 application supported	263	135	47	445
2 application supported	46	30	15	91
3 application supported	17	10	6	33
4 application supported	6	3	4	13
5 application supported	0	0	1	1
Total	**700**	**351**	**122**	**1,173**

Source: CSO, MIT, own calculations

Betcherman, Daysal, and Pagés (2010) pointed out that when reporting results, the supported companies tend to overestimate the number of jobs created compared to the actual result. Being aware of this potential pitfall, we use employment indicators measured independently of the OPEI. It is the CSO data (variable Number of employees (extent) = Average number of employees; variable Number of employees (persons) = average number of employees + full-time equivalent persons employed under contracts + number of owners working in the company). Thus, we should be able to resolve this methodological pitfall.

In Ireland, Girma, Görg, Strobl, and Walsh (2008) pointed out that the supported jobs usually persist four years after the end of the grant. Then, the supported jobs are cancelled. Such a finding is of great importance for the long-term strategy for job creation. Similar approach represents also a study of Biagi, Bondonio and Martini (2015) which refers to systematic lags in the economy (for example time differences in payments from authorities, orders of new equipment, etc.). This study recommends to take firms as treated two years after receiving subsidy. Our data limitation does not allow such an approach. Thus, we estimate impact of the subsidies during implementation of the assistance.

The second source of data is a questionnaire survey conducted in August and September 2010 among Czech firms. The questionnaire survey was conducted as to get detailed insight into the mechanisms being behind the intervention and get information about how the intervention works.

TABLE 6: DATA SAMPLE FROM THE QUESTIONNAIRE SURVEY

Have you applied for the assistance of OPEI – Innovations?		Frequency	Percent
Valid	Supported	237	22.4
	Rejected	29	2.7
	No	792	74.9
	Total	1,058	100.0
Missing	Do not know	74	
Total		1,132	

Source: Questionnaire survey

4.2. Methodology

To estimate the effect on sales, and employment, we use two groups to compare: supported and not- supported companies (both non-applicants and rejected applicants together). The reason staying behind this step is that we want to have larger sample of companies. Some authors compare

supported group with rejected applicants (Söderblom, Samuelsson, Wiklundand and Sandberg, 2015) which would enable take their intention to treat as the same. To have statistically similar groups to compare, we apply propensity score matching method (PSM).

The PSM is based on the estimation of discrete choice to which group the firm belongs (i.e., whether it is a successful applicant; a non-applicant or a rejected applicant respectively). Then there is done a comparison of indicators for successful applicants and non-applicants who have similar values of the propensity score, i.e. the probability that the firm is one of the successful applicants.[1] Selection of observations with similar propensity score value can be done in several ways, for the purposes of this research, there have been chosen the two most commonly used methods:

- The nearest neighbour method: It is based on the fact that each successful applicant is compared with a non-applicant (or control group member) that has the closest propensity score. The estimated result is then an average of comparisons of all the averages of all successful applicants;

- Kernel method: It is based on comparison of each successful applicant with all non-applicants (or control group members). However different non-applicants have different weights, depending on the difference propensity score (the smaller the difference, the more important is the case in the sample).

There have been selected those variables for PSM which potentially affect the monitored indicators which could be important for the appraisal experts (during the application and appraisal process). These variables are all dummy variables. It is possible that the appraisal experts have different approach to companies in the same industry but of different size. For example, they may have different approach to small firms in the manufacturing industry in comparison to other small businesses in retail sector. Thus, interaction terms of variables should be considered in the model. It is not possible to use saturated model in which all possible interactions are present as there are too many parameters and too few observations. For this reason, it is considered only interaction of two variables.

There has been used the probit model in which the explanatory variables are the following:

- Company size measured as a number of employees - full-time equivalents);

- Legal form (dummy variables for all types);

- NACE (in the form of dummy variables for each NACE);

- Regions (in the form of dummy variables for each region);

- The interaction of firm size with the above characteristics;

- Change of the fixed assets of the company (calculated as the percentage difference between 2010 and 2008);

- Support from other public sources (state aid according to CSO data).

Results from this model are used to estimate the propensity score. The results are for the nearest neighbour method (kernel methods are used as quality control matching).

5. RESULTS AND DISCUSSION

The following text presents results for each category of companies supported by the Innovation Programme - Innovative project. The results present PSM applied to supported and not-supported firms (both non-applicants and rejected applicants together). The estimates for all tests are presented in the table 5. The estimates for the whole sample are not statistically significant.

Sales and profit were higher for small businesses supported by 7,301.5 CZK and 6,917.5 CZK respectively. By a simple multiplying those averages by the number of supported small firms we find that due to the ERDF support, the small firms generated 2,424,098 CZK of sales and 2,296,610 CZK of profit because of the support.

Estimates of the impact of ERDF on medium-sized companies are also positive and significant. According to the point estimate, supported businesses created / maintained 10.69 (persons) and 9.8

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[1] It is when there are met other technical requirements, such as the same common support (ie. there are enough cases in particular propensity score groups). The cases with extreme values of propensity score are usually not used.

(extent) more jobs in comparison with not supported firms. Similarly, those firms reached even higher sales (74,351.92 CZK) and profits (11,597.15 CZK).

Again, multiplying the number of supported medium-sized companies by the estimates, we obtained the total economic impacts. Due to the program assistance was created / sustained 1,902.82 (persons), or 1,744.4 (extent) jobs respectively. Supported firms had a total of 13,234,641.76 CZK higher sales and 2,064,292.7 CZK higher profits in comparison with the comparison group.

For large companies, significant estimates are only in the area of employment. According to the point estimate, supported businesses created / sustained an average of 351.23 jobs more than not-supported firms. The employment (measured as extent) was the average job creation / sustainability 356.17 more than in control group. Large firms created / sustained 25,639.79 jobs (persons) or 26,000.41 (extent) jobs, respectively.

These estimations provide us with results supporting the critique of administrative burden of the assistance (Navreme Boheme, 2010, 2011). Smaller companies do not have sufficient capacities to manage the supported projects. Their managers take this role at costs of their primary role – doing business. Thus, only profit is significantly higher in supported small companies than in not-supported companies. The substitution effect explains this result – the EU funding is used partially for investment witch would be done anyway. It enables companies to make some part of their assets free to use or increase profit.

TABLE 7: ESTIMATES OF THE IMPACT OF THE ERDF ASSISTANCE ON FIRMS

	The whole sample		Small firms		Medium sized firms		Large firms	
	Point estimation (Nearest Neighbour)	P-value	Point estimation (Nearest Neighbour)	P-value	Point estimation (Nearest Neighbour)	P-value	Point estimation (Nearest Neighbour)	P-value
Employees (Nr. of persons)	-3.78	0.39	2.5	0.21	10.69	0.08	351.23	0.00
Employees (extent)	-4.2	0.38	1.15	0.33	9.8	0.1	356.17	0.00
Sales *(as sales in CZK)*	-52,550.05	0.17	7,301.50	0.07	74,351.92	0.00	140,171.62	0.24
Profit *(as profit in CZK)*	-15,324.58	0.11	6,917.50	0.00	11,597.15	0.00	-28,603.46	0.22

Source: CSO, MIT, calculations of the author

Medium-sized companies form a group which is the main target group of the OPEI. The estimates of the effects are positive in all variables observed. We explain this effect by larger capacities of these companies and high potential for growth which is boosted by the support. In the large companies, the estimates are significant only for employment. Our explanation concerns the size of these companies. They usually invest in large amounts and EU funds are only a part of a larger investment.

According to the questionnaire survey, the firms supported by the Innovation Programme are more oriented to foreign markets than rejected firms or non-applicants (for detailed see table 6)

			Have you applied for the assistance of OPEI – Innovations?			
			Supported	Rejected	No	Total
Share of export on total sales in companies	0%	Count	18	5	238	261
		%	7.8%	17.9%	31.0%	25.4%
	1 - 10%	Count	42	8	185	235
		%	18.1%	28.6%	24.1%	22.9%
	11 – 30%	Count	33	4	97	134
		%	14.2%	14.3%	12.6%	13.0%
	31 – 50%	Count	30	6	79	115
		%	12.9%	21.4%	10.3%	11.2%
	51 – 70%	Count	42	3	57	102
		%	18.1%	10.7%	7.4%	9.9%
	71 – 90%	Count	41	1	59	101
		%	17.7%	3.6%	7.7%	9.8%
	91% and more	Count	26	1	50	77
		%	11.2%	3.6%	6.5%	7.5%
	Not known	Count	0	0	2	2
		%	0.0%	0.0%	0.3%	0.2%
Total		Count	232	28	767	1 027
		%	100.0%	100.0%	100.0%	100.0%

Source: Questionnaire survey

Note: Pearson Chi-Square (Asymp. Sig. 2-sided = 0,000); N of Valid Cases = 1027

Within the questionnaire survey, the interviewees responded whether sales in their firm increase in between years 2008 and 2012. It enabled us to test whether the data of CSO and data from the questionnaire survey confirm the same results.

TABLE 9: SALES CHANGE IN 2012 IN COMPARISON WITH 2008 IN FIRMS IN THE SAMPLE

Change of sales (comparison 2008 and 2012)		Application for the assistance in OPEI - Innovations			
		Supported	Rejected	No	Total
Significantly increased	Count	29	7	61	97
	%	12.7%	25.0%	8.1%	9.6%
Increased	Count	97	7	279	383
	%	42.5%	25.0%	37.2%	38.0%
The same	Count	45	6	141	192
	%	19.7%	21.4%	18.8%	19.1%
Decreased	Count	44	4	209	257
	%	19.3%	14.3%	27.8%	25.5%
Significantly decreased	Count	13	4	61	78
	%	5.7%	14.3%	8.1%	7.7%
Total	Count	228	28	751	1 007
	%	100.0%	100.0%	100.0%	100.0%

Source: Questionnaire survey

Note: Pearson Chi-Square (Asymp. Sig. 2-sided = 0.003); N of Valid Cases = 1007

Our results do not confirm general expectation of positive effects on the sample. We found it on different size groups and variables. Thus, we confirm positive effect of the support as discussed by Pergelova and Angulo-Ruiz (2014) and also importance of the influence of local conditions (Preuss, 2011).

The characteristics of companies supported by the OPEI differentiate them from the other companies as they look for challenges and opportunities on foreign markets.

6. CONCLUSIONS

The research proved that the ERDF assistance in innovative projects has an impact on firms. Positive impacts have been found on profit in the case of supported small and medium-sized firms. There has been also found a positive effect on employment in medium and large firms assisted by the ERDF.

These conclusions have to be taken cautiously as it is a direct assistance in companies. Our study does not go beyond the implementation of projects. Thus, we do not make final conclusions on the outcomes of the programme on sustainability of profit, sales, and employment. On the other hand, we may claim that the assistance could be used as a short-term policy tool for improvement of employment and financial cash-flow in companies during time of financial austerity, for example during economic crises.

Our study also calls for a more rigorous approach towards evaluation of public entrepreneurship policies in the Central and Eastern European region, in order to adjust policies in the forthcoming EU programming periods, based on the collected empirical evidence.

REFERENCES

Abramovsky, L.; Battistin, E.; Fitzsimons, E.; Goodman, A.; Simpson, H. (2011). Providing employers with incentives to train low-skilled workers: Evidence from the UK Employer training pilots. Journal of Labour Economics, 29(1), 153 – 193.

Autio, E., and Rannikko, H. (2016). Retaining winners: Can policy boost high-growth entrepreneurship? Research Policy, 45(1), 42-55. doi: http://dx.doi.org/10.1016/j.respol.2015.06.002

AVAPP (2012). Counterfactual impact of cohesion policy: impact and cost-effectiveness of investment subsidies in Italy. Final Report to DG Regional Policy.

Battistin, E., Gavosto, A., and Rettore, E. (2001). Why do subsidised firms survive longer? An evaluation of a program promoting youth entrepreneurship in Italy. In M. Lechner and F. Pfeiffer (Eds.), Econometric evaluation of labour market policies (pp. 153-181). Heidelberg: Physica-Verlag HD.

Betcherman, G., Daysal, N. M., and Pagés, C. (2010). Do employment subsidies work? Evidence from regionally targeted subsidies in Turkey. Labour Economics, 17(4), 710-722. doi: 10.1016/j.labeco.2009.12.002

Bia, M., & Mattei, A. (2012). Assessing the effect of the amount of financial aids to Piedmont firms using the generalized propensity score. Statistical Methods & Applications, 1-32.

Biagi, F., Bondonio, D., & Martini, A. (2015). Counterfactual impact evaluation of enterprise support programmes. Evidence from a decade of subsidies to Italian firm. ERSA conference papers, 1-16. European Regional Science Association.

Bondonio, D., and Greenbaum, R. T. (2014). Revitalizing regional economies through enterprise support policies: an impact evaluation of multiple instruments. European Urban and Regional Studies, 21(1), 79-103. doi: doi:10.1177/0969776411432986

Čadil, J., Mirošník, K., and Rehák, J. (2017). The lack of short-term impact of cohesion policy on the competitiveness of SMEs. International Small Business Journal. 35(8), 991-1009, doi: doi:10.1177/0266242617695382

Conclusions on Innovation Union for Europe (2010).

Czarnitzki, D., Bento, C., Lopes , and Doherr, T. (2011). Counterfactual impact evaluation of cohesion policy: Work package 2: Examples from support to innovation and research. Retrieved from http://ec.europa.eu/regional_policy/sources/information/evaluations/pdf/impact/ciewp2_final.pdf.

Czarnitzki, D., Ebersberger, B., Fier, A. (2007). The relationship between R&D collaboration, subsidies and R&D performance: Empirical evidence from Finland and Germany. Journal of Applied Econometrics, 22, 1347–1366.

Dvouletý, O. (2017a). Can policy makers count with positive impact of entrepreneurship on economic development of the Czech regions?. Journal of Entrepreneurship in Emerging Economies, 9(3), 286-299. DOI: 10.1108/JEEE-11-2016-0052

Dvouletý, O. (2017b). Determinants of Nordic entrepreneurship. Journal of Small Business and Enterprise Development, 24(1), 12-33. DOI: 10.1108/JSBED-07-2016-0104

Dvouletý, O. (2017c). Does the self-employment policy reduce unemployment and increase employment? Empirical evidence from the Czech regions. Central European Journal of Public Policy.11(2), 11-22. DOI: 10.1515/cejpp-2016-0032

Dvouletý, O., and Lukeš, M. (2016). Review of empirical studies on self-employment out of unemployment: Do self-employment policies make a positive impact? International Review of Entrepreneurship, 14(3), 361-376.

Dvouletý, O., and Mareš, J. (2016a). Determinants of regional entrepreneurial activity in the Czech Republic. ACTA VŠFS, 10(1), 31-46.

Dvouletý, O., & Mareš, J. (2016b). Relationship between unemployment and entrepreneurial activity: Evidence found among Visegrad countries. Innovation Management, Entrepreneurship and Corporate Sustainability (IMECS 2016), 146-156.

EC (2014). Description of the EU Cohesion Policy. Retrieved 27/06/2016, from http://ec.europa.eu/regional_policy/en/policy/what/investment-policy/

Ferry, M. (2009). Cohesion Policy evaluation systems in the Visegrad states: An overview. In S. Bienias and I. Lewandowska (Eds.), Evaluation systems in the Visegrad member states. Warsaw: Ministry of Regional Development.

Frondel, M., and Schmidt, C. M. (2005). Evaluating environmental programs: The perspective of modern evaluation research. Ecological Economics, 55(4), 515-526. doi: 10.1016/j.ecolecon.2004.12.013

GEFRA and IAB. (2010). Ex post evaluation of Cohesion Policy programmes 2000-2006 financed by the European Regional Development Fund Work Package 6c: Enterprise support - an exploratory study using counterfactual methods on available data from Germany.

Girma, S., Görg, H., Strobl, E., and Walsh, F. (2008). Creating jobs through public subsidies: An empirical analysis. Labour Economics, 15(6), 1179-1199. doi: 10.1016/j.labeco.2007.11.002

Hamersma, S. (2008). The effects of an employer subsidy on employment outcomes: A study of the work opportunity and welfare-to work tax credits. Journal of Policy Analysis and Management, 27(3), 498 – 520.

Henrekson, M., and Johansson, D. (2010). Gazelles as job creators: a survey and interpretation of the evidence. Small Business Economics, 35(2), 227-244. doi: 10.1007/s11187-009-9172-z

Hoerner, J., and Stephenson, P. (2012). Theoretical perspectives on approaches to policy evaluation in the EU: The case of Cohesion Policy. Public Administration, 90(3), 699-715. doi: 10.1111/j.1467-9299.2011.02013.x

Koellinger, P. D., and Thurik, A. R. (2012). Entrepreneurship and the business cycle. The Review of Economics and Statistics, 94(4), 1143-1156. doi: 10.1162/REST_a_00224

Mason, C., and Brown, R. (2013). Creating good public policy to support high-growth firms. Small Business Economics, 40(2), 211-225. doi: 10.1007/s11187-011-9369-9

Minniti, M. (2008). The role of government policy on entrepreneurial activity: Productive, unproductive, or destructive? Entrepreneurship Theory and Practice, 32(5), 779-790. doi: 10.1111/j.1540-6520.2008.00255.x

Ministry of Industry and Trade of the Czech Republic (MIT). (2007). Program inovace OPPI [online]. Accessible at [cit. 2012-10-15]. http://download.mpo.cz/get/34227/ 45772/553257/priloha041.pdf

Navreme Boheme. (2010). Evaluační studie 1: Evaluace projektu „Vzdělávejte se!".

Navreme Boheme. (2011).; Evaluační studie 2: Evaluace projektu „Vzdělávejte se!"

Pokorski J. (ed.) (2011). Towards innovative economy effects of grants to enterprises in Poland, accessible at [cit. 2013-05-10] http://www.parp.gov.pl/files/74/81/469/12635.pdf

Pergelova, A., and Angulo-Ruiz, F. (2014). The impact of government financial support on the performance of new firms: the role of competitive advantage as an intermediate outcome. Entrepreneurship and Regional Development, 26(9-10), 663-705. doi: 10.1080/08985626.2014.980757

Potluka, O., Brůha, J., Špaček, M., and Vrbová, L. (2016). Counterfactual impact evaluation on EU Cohesion Policy interventions in training in companies. Ekonomický časopis, 64(6), 575-595.

Potluka, O., Brůha, J., Vozár, O., Špaček, M., and Loun, J. (2013). The impact of subsidies on Czech firms. Statistika : Statistics and Economy Journal, 93(4), 56-62.

Preuss, L. (2011). On the contribution of public procurement to entrepreneurship and small business policy. Entrepreneurship and Regional Development, 23(9-10), 787-814. doi: 10.1080/08985626.2010.546433

Shane, S. (2009). Why encouraging more people to become entrepreneurs is bad public policy. Small Business Economics, 33(2), 141-149. doi: 10.1007/s11187-009-9215-5

Söderblom, A., Samuelsson, M., Wiklund, J., & Sandberg, R. (2015). Inside the black box of outcome additionality: Effects of early-stage government subsidies on resource accumulation and new venture performance. Research Policy, 44(8), 1501–1512.

Stam, E., & Bosma, N. (2015). Local policies for high-growth firms. In The Oxford handbook of local competitiveness (p. 286). Oxford University Press.

Stevenson, L., and Lundström, A. (2001). Patterns and Trends in Entrepreneurship / SME Policy and Practice in Ten Economies. Stockholm: Swedish Foundation for Small Business Research.

Terjesen, S., Bosma, N., and Stam, E. (2016). Advancing public policy for high-growth, female, and social entrepreneurs. Public Administration Review, 76(2), 230-239. doi: 10.1111/puar.12472

Wunsch, C.; Lechner, M. (2008). What did all the money do? On the general ineffectiveness of recent West German labour market programmes. Kyklos, 61(1), 134 – 174.