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Advancement of Polish and French regions in the process of smart specialisation

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Advancement of Polish and French regions in the process of smart specialisation

Abstract

Smart specialisation principles provide strategies and roles for all regions: leaders and less developed regions in the field of innovation and R&D. The main objective of the paper is to assess the advancement of selected Polish and French regions in the process of smart specialisation as examples of regions present on the S3 platform. In order to achieve the main objective of the paper, the following detailed objectives are expected to be met: 1. Presentation of the economic fundamentals of smart specialisation; 2. Analysis of the transposition of the smart specialisation concept into strategic national and regional documents in Poland and in France; 3. Assessment of the advancement of the smart specialisation process in Polish and French regions.

There is an accepted rule in Poland that smart specialisations at national and regional level should be identified independently, which means that national specialisations cannot be treated as superior to regional ones. The progress of identifying regional smart specialisations is diversified. Fifteen Polish regions are registered in S3 Platform, of which only five are peer-reviewed and eight have adopted RIS3 priorities. Worth mentioning is the fact that specialisations identified at both national and regional level are convergent which indicates that both approaches selected effective specialisations, focused on whole country's economic growth. In France where smart specialisations are only identified at regional level 20 out of 26 regions are registered in S3 Platform, 24 of them being regions with encoded RIS3 priorities. It is expected that the research results concerning the advancement of the smart specialisation process in selected regions under analysis will give recommendations for regional authorities of Polish and French regions in terms of the smart specialisation elaboration and monitoring.

Keywords: national and regional smart specialisation, innovation policy, France, Poland

JEL codes: R58, L52

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1. Smart specialisation as an economic concept and as a policy framework

The concept of smart specialisation has become a leading idea at the EU level. This notion is a central element of the Europe 2020 Strategy which is based on the principles of ‘smart growth’, ‘green growth’ and ‘inclusive growth’ [European Commission 2010]. As a consequence, setting up national and regional smart specialisations constitutes an ex-ante conditionality for the cohesion policy programmes in the perspective 2014-2020. In this respect the European Commission has decided to build an S3 platform to support regions in their efforts to select and implement smart specialisation strategies [Foray 2013, p. 56].

As part of the new industrial policy, the concept of smart specialisation has been developed in the report “Knowledge for Growth”, elaborated in 2009 by the expert group to the European Commission. The task of the experts was to find an alternative for public policies that were seen to spread public investments in knowledge and innovation – research, education, public support to business R&D, etc – thinly across technology research fields such as biotechnology, ICTs, and nanotechnology. Instead, they suggested that national and, in particular, regional governments should encourage investment in domains that would “complement the country’s other productive assets to create future domestic capability and interregional comparative advantage” [OECD 2013, p. 11].

The theoretical fundamentals of smart specialisation are grounded in the classical theories of economic growth (e.g. the theory of the division of labour by Adam Smith) and in particular in trade specialisation. Recent strands of economic thought from evolutionary economics to the economics of agglomeration are visible as well in the smart specialisation concept, in particular the role of knowledge spillovers and rigidities that prevent shifts in specialisation patterns. The concept is also based on the research on industrial development [e.g. Marshallian externalities, industrial districts, flexible specialisation (Piore and Sabel, Storper), and neoclassical spatial economics (Venables and Krugman)] [OECD 2013, p. 18]. It is emphasized that the smart specialisation concept originates in the academic discussions regarding the productivity gap between the US and Europe and the critical role played by information and communications technologies (ICTs) in explanation of this productivity gap [McCann, Ortega-Argiles 2013; Camagni, Capello, 2013, p. 358].

Within the smart specialisation process new activities (and not sectors *per se*) are to be nominated at the regional level that aim at exploring and discovering new technological and market opportunities and at opening new perspectives for regional competitive advantage [Foray 2013, p. 55-56]. Therefore the smart specialisation should not be understood as a form

of top-down industrial policy in conjunction with a pre-conceived national policy, but should use an entrepreneurial process of discovery, a learning process in order to set up research and innovation domains in which a region can hope to excel. The idea of smart specialisation as a vertical and non-neutral policy is to concentrate resources in a few domains in order to generate size and critical mass effects (scale, scope and spillovers) and that is not possible to achieve if you do a little of everything. It is also obvious that focusing resources on a limited number of activities is probably not enough and will not create competitive advantage if the choices of activities are rather imitative and conservative - in such a situation, regions will only compete for the same resources. The objective of the regions should be to concentrate resources and develop distinctive and original areas of specialisation [Foray 2013, p. 57]³. Smart specialisation policy principles and policy dilemmas accompanied by governance implications are presented in Table 1.

The EU has translated the principles of smart specialisation into operational elements of regional innovation strategies. Regional innovation strategies for smart specialisation (RIS3) are thus integrated, place-based transformation strategies that have the following characteristics:

1. Concentration of public resources on innovation and development priorities, needs and challenges;
2. Measures to stimulate private RTD investment;
3. Building on regional capabilities, competences, competitive advantages and potential for excellence in a global perspective;
4. Fostering stakeholder involvement and encouraging governance innovation and experimentation;
5. Evidence-based, including sound monitoring and evaluation systems [OECD 2013, p. 19; European Commission 2012, p. 8].

³ As stated by Morgan, the concept of smart specialisation leaves many questions unanswered. Some scholars argue that in the original framework of the concept there is a lack of regional specificity emphasizing that it is not diversification *per se* that is most important for regional growth, but *specialized diversification* across related technologies [McCann and Ortega-Argiles, 2013, quoted by: Morgan 2013, p. 105]. McCann and Ortega-Argiles [2013] enumerate three main challenges while translating smart specialisation principles as fundamentally sectoral approach into regional policy: 1. The need of a careful analysis of the role of the entrepreneurial agents and catalysts, the relationships between them; 2. The application of smart specialisation to a regional context is not simply a matter of redrawing the cartographical boundaries; 3. Very little research has actually been undertaken regarding the relationships between the policy objectives and policy instruments in the smart specialisation process; lack of clear outcome indicators for smart specialisation. Other scholars have highlighted different roles that the state may assume in the process of entrepreneurial discovery, depending on the level of economic development, the tacitness of the knowledge involved and the capacity of the state [Navarro et al., 2011, quoted by: Morgan 2013, p. 105]. Charles et al. [2012, p. 5] highlight that it is difficult to see a real difference between the concept of smart specialisation and regional innovation systems and strategies.

As vertical prioritisation of specialisations is a difficult task which necessitates social involvement of entrepreneurs and other stakeholders, smart specialisation is about defining a method to help policy-makers identify desirable areas for innovation policy intervention [Foray 2013, p. 58]. Policy makers should take into account that their role in selecting areas for specialisation is more modest as compared to traditional support for infant industries or technology start-ups [Foray, David, Hall, 2009, p. 2]. Governments have three main responsibilities:

- Supplying incentives to encourage entrepreneurs and other stakeholders (higher education, research laboratories) to become involved in the discovery of regional smart specialisations;
- Evaluating and assessing effectiveness of the proposed support;
- Identifying complementary investments connected with the emerging specialisations [Foray, David, Hall, 2009, p. 4].

Table 1. Smart specialisation policy principles and dilemmas

		Governance implications
Smart specialisation policy principles	Granularity	Identification of the right level of smart specialisation (between sectors and micro-activities) in order to design activities where innovative projects complement existing productive assets.
	Entrepreneurial discovery	Active involvement in the process of self-discovery of what a region does/will do best in terms of R&D and innovation leading to some structural changes within the economy: transition, modernisation, diversification, foundation of a new domain.
	Evolution of supported priorities	Adjustment of priorities according to new market opportunities and regional strengths.
	Inclusiveness	Giving every sector a chance to be present in the strategy through a good project (implying different paces and tempo of the policy).
	Experimental nature and need for evaluation	Establishment of benchmarks and evidence-based monitoring and evaluation criteria.
Policy dilemmas	Space of smart specialisation	Identification of the boundaries for the deployment of a smart specialisation strategy
	Time of smart specialisation	Identification of the windows of opportunity in which interventions may amplify virtuous developments.
	Evolving priorities	Diversification of the system through the generation of new options and the elimination of old priorities.
	Continuity of policy	Putting some activities after 4-5 years out of the smart specialisation strategy and moving them to the general regional innovation strategy if appropriate.

Source: Authors based on: [Foray 2013].

2. Smart specialisation in strategic documents in Poland

Poland is a country with elected regional authorities and some decentralisation of science, technology and innovation (STI) powers and resources to regions [OECD 2011, p.73], however they do not have competences in determining such instruments as scholarships for post-graduate studies, tax credits for private R&D and financing for innovative firms by public development banks. Polish regions can use such instruments as technology foresight exercises, institutional R&D funding in public research centres and higher education institutions, international trips to develop innovation networks and innovation awards, only to limited extent [OECD 2011, p. 303].

In Poland, EU structural funds play an important role in financing of many innovation-related instruments. Regions are managers of Regional Operational Programmes supporting human capital and an innovative economy and based on priorities of regional innovation strategies. RIS3 (*Research and Innovation Strategies for Smart Specialisation*) which should be based on the comparative advantages of a region and ensure a more effective use of public funds constitute an ex-ante condition for regions to use the cohesion policy funds in 2014-2020 [European Commission 2012, p. 24].

General strategic framework for national smart specialisations in Poland is included in one of nine integrated strategies: the Innovation and Efficiency of Economy Strategy “Dynamic Poland” which is consistent with objectives of the “Europe 2020” Strategy and the Medium-term National Development Strategy 2020. Executive document to the Innovation and Efficiency of Economy Strategy is “Enterprises Development Programme until 2020”, which contains comprehensive list of instruments supporting innovation and entrepreneurship in Poland. The National Smart Specialisation Strategy, an integral part of that Programme, shows areas of research, development and innovation that are strategic for implementation of the Innovation and Efficiency of Economy Strategy. Two key documents in the R&D and innovation area are starting points for identification of national smart specialisations in Poland:

1. Technological Foresight of Industry, „InSight2030”, developed at the request of the Ministry of Economy, and
2. National Research Programme, prepared by the Ministry of Science and Higher Education which aims to concentrate public expenditure on strategic research and development directions (for civil society and international competitiveness of Polish economy).

The project „InSight2030” was the first horizontal foresight project in Poland covering the whole country and including all industrial sectors, energy, mining and industry-related services [Ministerstwo Gospodarki 2012, p. 14]. The analysis was carried out in ten horizontal research areas with 127 identified key technologies. After public consultation, the number of technologies has been limited to 99 technologies grouped in the following research areas:

1. industrial biotechnologies,
2. microelectronics,
3. photonics,
4. advanced implementation systems and materials,
5. nanoproceses and nanoproducts,
6. ICT,
7. cogeneration technologies and rationalisation of energy utilization,
8. natural resources,
9. healthy population,
10. green economy.

The selection of smart specialisations was a result of cross-analysis of the project „InSight2030” and the National Research Programme, quantitative and qualitative analysis and public consultations. Eighteen national smart specialisations have been identified in five thematic sections:

1. healthy population:
 - medical engineering technologies, including medical biotechnologies,
 - diagnosis and therapy of civilization diseases and in personalised medicines,
 - manufacture of medicinal products technologies,
2. food processing and environmental bioeconomy:
 - innovative technologies, processes and food processing products,
 - healthy food (high quality and organic production),
 - biotechnology processes, household chemicals and environment engineering products,
3. sustainable energy:
 - highly efficient, low carbon, integrated systems of energy production, transmission and distribution,
 - intelligent and energy-efficient construction,
 - environmentally-friendly transport solutions,
4. natural resources and waste management:

- technologies of modern extraction and use of natural resources and manufacturing of their substitutes,
 - material and energetic use of waste (recycling and other recovery methods),
 - innovative techniques of water processing and recycling.
5. innovative technologies and industrial processes (horizontal approach):
- multifunctional materials and composites with sophisticated properties, including nanoproceses and nanoproducts,
 - biosensors and intelligent sensory networks,
 - intelligent networks and remote-sensing,
 - plastic and organic electronics,
 - automation and robotics of technological processes,
 - optoelectronic systems and materials.

The list of national smart specialisations has been formally approved by the Polish government in April 2014 however it is not closed. They are continuously monitored in response to changes in external conditions. In case of a need for redefining existing or identifying new specialisations, supplementary actions will be taken on an ongoing basis. It is planned to update the specialisations once a year and if it's needed also ad hoc [Ministerstwo Gospodarki 2014, p. 4-5, 9, 30].

3. Smart specialisation in strategic documents in France

In France, RIS3s are set out at regional level as the continuation of regional innovation strategies from the previous programming period. There is no strategy for smart specialisation elaborated at the national level. French RIS 3 as well as the Partnership Agreement between France and the European Commission that sets out the commitments to concrete actions to deliver Europe 2020 objectives, are in line with the following 13 national strategies/programmes/action plans: les 34 plans de filières d'avenir, la Nouvelle donne pour l'innovation, le programme Innovation 2030, le contrat de filières alimentaires, le plan agro-écologique, la Politique intégrée Priorité Jeunesse, le Plan quinquennal de lutte contre la pauvreté et pour l'inclusion sociale, la Loi de programmation pour la ville et la cohésion urbaine, le Plan Climat National, Le Plan d'action nationale en faveur des énergies renouvelables, la Stratégie nationale pour la biodiversité, la Feuille de route pour la transition écologique, la Feuille de route sur le numérique [Accord de partenariat 2014-2020, p. 111].

4. Assessment of the process of smart specialisation in selected Polish and French regions

The selection of Polish and French regions that have been taken into account in the empirical analysis concerning the advancement of the smart specialisation process is based on 4 S&T related indicators:

1. Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions;
2. Total intramural R&D expenditure (GERD) by NUTS 2 regions as % of GDP;
3. Human resources in science and technology (HRST) by NUTS 2 regions as % of economically active population;
4. Patent applications to the EPO by priority year by NUTS 2 regions (number of applications per million of inhabitants).

Due to the availability of data, these four indicators concern the year 2010. 16 Polish regions as well as 22 French regions at NUTS 2 level (excluding French overseas regions) have been ranked according to every of these four indicators. Then, a composite rank has been built: the scores that have been given to each place in four separate rankings have been averaged and a final rank has been assigned to every region in Poland and in France. In the selection process, 6 best performing regions have been chosen in every country to analyse their process of smart specialisations. For Poland 6 best performing regions in terms of 4 chosen indicators are (in decreasing order): Mazowieckie, Małopolskie, Dolnośląskie, Łódzkie, Pomorskie, Śląskie (Table 2). In France, the selected regions are respectively: Ile-de-France, Rhone-Alpes, Midi-Pyrénées, Alsace, Provence-Alpes- Côtes d'Azur, Bretagne (Table 3).

Table 2. Ranking of French regions (NUTS 2)

Region/ranks	HRST	Patents	GDP	R&D	Average	Rank
Île de France	1	2	1	2	1,5	1
Rhône-Alpes	5	1	2	3	2,75	2
Midi-Pyrénées	2	6	8	1	4,25	3
Alsace	3	3	3	9	4,5	4
Provence-Alpes-Côte d'Azur	6	7	3	7	5,75	5
Bretagne	7	5	13	8	8,25	6

Source: Authors based on the Eurostat data.

Table 3. Ranking of Polish regions (NUTS 2)

Region/ranks	HRST	Patents	GDP	R&D	Average	Rank
Mazowieckie	1	2	1	1	1,25	1
Małopolskie	6	4	8	2	5	2
Dolnośląskie	4	7	2	8	5,25	3
Łódzkie	7	3	6	5	5,25	4

Pomorskie	3	9	5	6	5,75	5
Śląskie	2	12	3	10	6,75	6

Source: Authors based on the Eurostat data.

Table 4 presents smart specialisations in selected six Polish regions with reference to EU RIS3 priorities, methods of identification and assumptions for monitoring system.

Table 4. Smart specialisations in selected Polish regions (NUTS 2)

Region	Smart specialisations with reference to EU RIS3 priorities	Methods of identification and monitoring
Dolnośląskie	biotechnology, pharmaceuticals; nanotechnology; chemistry; mathematical and physical sciences; biological and medical sciences; energetics, green energy; informatics, ICT; extraction of natural resources.	Smart specialisations initially identified, the list is not closed. Specialisations chosen on the basis of specialisation of existing technology parks, clusters and implemented projects. In addition, public consultations were launched. Updating procedure has been set out in RIS. Implementing plans should be updated every two years.
Łódzkie	areas of smart specialisation: <i>-key technologies:</i> biotechnology; nanotechnology and functional materials; mechatronics; IT; <i>-regional smart specialisations:</i> modern textile industry and fashion industry; advanced building materials; medicine, pharmacy, cosmetics; energy, renewable energy sources; innovative agriculture and food processing; informatics and telecommunication.	Smart specialisations defined as combination of key technologies and regional smart specialisations (branches). Provisional specialisations appointed on the basis of expert panels, analysis of firms potential (with reference to development potential and R&D) and public consultation. Lack of detailed information on monitoring and evaluation system.
Małopolskie	life science; sustainable energy; ICT; chemistry; manufacturing of metal and metal products; manufacturing of non-metallic mineral products; electrical engineering and mechanical industry; creative industries.	Specialisation areas defined on the basis of foresight (closed selection). Public consultation was led simultaneously with call for strategic projects for Strategic Projects Bank. Updating procedure was defined in Regional Development Strategy. Revisions are expected every year, evaluation and eventual changes every three years.
Mazowieckie	safe food; intelligent management systems; professional services for business; quality of life; EU RIS3 priorities: public health and security; food security and safety; service innovation; sustainable innovation; specific local policy priorities.	Identified specialisation areas are related to mutual dependency chains. Specialisations appointed on the basis of: -diagnosis of scientific, economic and social potential, including industrial areas, leading technologies, service processes and high opportunity sectors; -opinions and recommendations of cluster representatives, business and industrial sector organisations, associations and enterprises, particularly big/leading enterprises (local business

		<p>leaders);</p> <p>-infoseminars and public consultation.</p> <p>Updating procedure is initially defined and planned every 2-3 years.</p>
Pomorskie	<p>eco-energy;</p> <p>business process outsourcing;</p> <p>food industries;</p> <p>creative sector;</p> <p>automotive;</p> <p>logistics;</p> <p>ICT;</p> <p>marine industries;</p> <p>wood and furniture;</p> <p>tourism;</p> <p>light chemistry</p> <p>biotechnology;</p> <p>construction;</p> <p>textile industry.</p> <p>EU RIS3 priorities:</p> <p>sustainable innovation; sustainable energy and renewables; service innovation; new or improved service processes; digital agenda; cultural and creative industries; specific local policy priorities; public health, security and well-being; KETs; industrial biotechnology.</p>	<p>Smart specialisations initially identified with reference to branches which attract investment (foreign and external).</p> <p>Methods of identification:</p> <p>-analysis of infrastructure, including R&D infrastructure; existing investment and cluster connections;</p> <p>-regional foresight;</p> <p>-monitoring of clusters and cluster policy;</p> <p>-public consultation.</p> <p>Procedure and mechanism of actualisation defined in Regional Strategic Program Economic Development.</p>
Śląskie	<p>energetics;</p> <p>medicine;</p> <p>ICT;</p>	<p>Smart specialisations defined thematically (not specific branches but value chains), focused on processes and services using different technologies.</p> <p>The selection was based on technological and sectorial foresight, Technology Development Programme 2010-2020, expert and public consultation (INNOBSEVATOR SILESIA).</p> <p>Monitoring system includes:</p> <p>- <i>ex-ante</i> monitoring in 2013;</p> <p>- <i>on-going</i> monitoring in 2018-2020;</p> <p>- <i>ex-post</i> monitoring in 2021 and , additionally</p> <p>-three thematic ongoing evaluations of smart specialisations.</p>

Source: Authors based on: S3 Platform data, the websites of Marshall Offices, SIS and RDS of selected regions, Sojka, Nowacka Robczyńska 2012, Pag Uniconsult 2012, Ministerstwo Rozwoju Regionalnego 2013, Maćkowiak, Woźniak, Grzela, Lubiejewska, Zalewa-Brola 2014.

There is a list of recommendations on how to improve the RIS3s in Poland to help to enhance their impact on national and regional development [Piątkowski et al. 2014, p.4]. Accordingly, smart specialisations should be selected on the basis of robust evidence and a new business planning model. Unfortunately, there is no single best method of assessing the competitive advantage of a region, which would in turn assist in selecting smart specialisations for its RIS3 (Piątkowski et al., p. 50). Regions may use different methods in selection process of smart specialisations such as: looking for “clusters”, foresight, market

selection, case studies etc., however there is no clear timeline or sequencing how they should be applied. Foresight is recognized as a tool developing a shared vision of the future among all stakeholders. However, only three out of six analysed regions, Pomorskie, Śląskie and Małopolskie used this method identifying smart specialisations. The EC's stresses the importance of consultation in the specialisation selection process, which takes a considerable amount of time. In two regions, Dolnośląskie and Pomorskie, smart specialisations are still not definitely identified. In Pomorskie, the selection process should be completed until August 2014. When we analyse the identified smart specialisations in six best performing Polish regions we can see that the majority of them have chosen specific industries/sectors, however the number of them varies significantly. Only in Łódzkie, areas of smart specialisation have been divided into two groups: key technologies and regional smart specialisations (branches). In Mazowieckie, selected specialisation areas are related to mutual dependency chains, in Śląskie – to value chains. In all the selected Polish regions, there is still much to be done as regards RIS3s. They should be made more operational and easier understandable to the public, which means they need clear action plans for implementation. There should be ensured internal coherence in individual regions between their RIS3, Regional Development Strategy and Regional Operational Programme, so that they are complementary. It is necessary to build more internal capacity among key stakeholders. Monitoring and evaluation systems still need further specification [Piątkowski et al. 2014, p.4].

All French regions selected for empirical analysis have selected their smart specialisations in order to accomplish an ex-ante conditionality for the cohesion policy programmes in the perspective 2014-2020 (Table 5). In general, the number of selected smart specialisations is rather limited which is line with the European Commission's suggestions. Alsace is the French region with the highest number of selected smart specialisations (12), Bretagne and Rhone-Alpes take the second rank with 7 identified smart specialisations. The average number of smart specialisations in French regions is 6 and the best performing French regions in terms of research and innovation potential (Ile-de-France, Rhone-Alpes, Midi-Pyrénées) do not exceed this number. Identification methods of smart specialisations are similar in all French regions. They have been selected on the basis of the diagnosis of the regional innovation strategy from the previous programming period. Entrepreneurial discovery has been implemented as a process involving all regional innovation stakeholders. Many regions have also used working groups, exchanges, online questionnaires as tools aiming at involving different socio-economic actors.

Table 5. Smart specialisations in selected French regions (NUTS 2)

Region	Smart specialisations	Methods of identification and monitoring
Alsace	<ol style="list-style-type: none"> 1. sustainable buildings, 2. renewable energy, 3. sustainable transport – mobility, 4. water measurement, 5. agricultural production and environment, 6. e-health, 7. machine tools, 8. new medicines, 9. medical robotics, 10. medical imagery, 11. nutritionist prevention, 12. medical implantable devices. 	<p>Smart specialisations at the regional level identified by the Innovation steering committee composed of innovation stakeholders in the region. Innovation stakeholders (universities, innovation support structures, companies, regional authorities) closely involved in working groups during the elaboration of smart specialisations in the region. Diagnosis of the implementation of the Regional Innovation Strategy from 2009 as a basis of the S3 strategy. Peer review of the smart specialisations by the S3 Platform (December 2012).</p> <p>An update of selected S3 specialisations is foreseen at the middle of the programming period 2014-2020. Lack of monitoring indicators in the strategy.</p>
Bretagne	<ol style="list-style-type: none"> 1. Social and community innovation for an open and creative society, 2. Maritime activities for blue growth, 3. Technologies for the digital age 4. Health and well-being for a better quality of life, 6. Sustainable alimentary chain for food quality 6. Advanced production technologies 7. Observation, surveillance and management of the environment 	<p>Smart specialisations elaborated in partnership of innovation stakeholders in the region (entrepreneurial discovery process), exchanges, working groups, consultations (a road from 25 smart specialisations initially selected to 7).</p> <p>Monitoring: Reinforcement of the result indicators provided for the Regional Innovation Strategy in 2008 (more accent put on impact evaluation). List of proposed impact indicators and result indicators.</p>
Ile-de-France	<ol style="list-style-type: none"> 1. Engineering of complex systems and software 2. Digital creation 3. Eco-construction and districts of high environmental performance 4. Smart and decarbonated vehicles 5. Medical devices 	<p>Quantitative analysis of the research and innovation potential in the region. Identification of smart specialisations in the process of entrepreneurial discovery: working groups, individual meetings, online questionnaire sent to beneficiaries of the regional operational programme 2007-2013.</p>
Midi-Pyrénées	<ol style="list-style-type: none"> 1. Embedded systems 2. Innovation of territorialized food chain 3. Industrial biotechnology for the development of renewable carbon 4. Advanced materials and procedures for aeronautics 5. Translational research in oncology and gerontology 6. Cellular engineering and regenerative medicine 	<p>Identification of smart specialisations in the process of entrepreneurial discovery involving innovation stakeholders (working groups, consultations).</p> <p>Lack of monitoring details in the strategy but innovation governance at the regional level.</p>
Provence-Alpes-Côte d'Azur	<ol style="list-style-type: none"> 1. Risks, security and safety 2. Health – food. 3. Tourism, culture industries, digital contents 4. Energy transition and energy efficiency 5. Smart and sustainable mobility 	<p>Identification of smart specialisations in the process of entrepreneurial discovery involving innovation stakeholders (working groups, consultations).</p>
Rhône-Alpes	<ol style="list-style-type: none"> 1. Personalized healthcare for infectious & chronic diseases 	<p>Methods of identification in line with the European Commission suggestions:</p>

	2. Eco-efficient factory 3. Smart grids & energy storage 4. Smart & energy-efficient buildings 5. Digital technologies & user-friendly systems 6. Mobility systems of the future 7. Sports, safety & infrastructure in the Alps	diagnosis of the regional innovation system, entrepreneurial discovery and prioritisation of smart specialisations at regional level on the basis of several regional seminars and working groups. Evaluation system includes: -on-going monitoring in 2017; - <i>ex-post</i> monitoring in 2020. Results indicators and impact indicators to be used in these evaluations, they are not listed in the strategy.
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Source : Authors based on : La Stratégie de Spécialisation Intelligente en Alsace, 2012 ; Bretagne, Stratégie de soutien à l'innovation « S3 » 2013, Technopolis [2013], Stratégie régionale de l'innovation pour une spécialisation intelligente en Midi-Pyrénées - 2014/2020 ; S3 Platform, Stratégie d'innovation de la Région Rhône-Alpes au regard de la "Spécialisation Intelligente".

Smart policies build the knowledge-based development potential of any region, strong or weak, high-tech or low-tech. Smart specialisation approach suggests those regions which are not leaders in any of the major science and technology areas, to invest in R&D and innovation, acting in accordance with the following logic: not to do everything in science, technology and innovation and to promote actions making their knowledge base unique and superior to others. The initiators of designing a specialisation strategy are usually lead actors or institutions (companies, research institutions, national or regional authorities) capable of mobilising other stakeholders and resources and setting the strategic framework for further activities. The key challenge is to identify those areas where new R&D and innovation projects are expected to create future domestic capability and interregional comparative advantage [OECD 2013, p. 28]. An important question that arises here concerns data and tools which are needed and available to support the assessment of potential and detection of bottlenecks for future specialisation and development.

Conclusions and questions for further research

Smart specialisation strategies can be viewed as a mix of modern industrial policy with innovation policies that emphasise a bottom-up approach (the entrepreneurial discovery), transparency (e.g. monitoring and evaluation) and flexibility. As stated in the paper, a smart specialisation strategy as the concentration of public resources in knowledge investments on particular activities in order to strengthen comparative advantage in existing or new areas is a complex concept which requires the involvement of multiple innovation stakeholders at the regional level. This is at the same time the concept that has become very popular in different European member states and regions due to its value as the ex-ante conditionality of the attribution of the EU structural funds.

The empirical analysis of the advancement of the smart specialization process in selected French and Polish regions has shown that there is no great difference in the selection methods of smart specialisations implemented by Polish and French regions even if they represent the best performing developed regions (in France) and the best performing catching-up regions (in Poland). In the two cases the process of entrepreneurial discovery has been implemented in order to identify smart specialisations. When it comes to monitoring of the smart specialisations, proposed methods and timelines are similar as well. However, it is crucial to emphasize the fact that the process of smart specialization is still ongoing, so it will be possible to draw more conclusions in some months when all regions will elaborate their regional operating programmes. In this respect it will be possible as well to compare the selected smart specialisations with the proposed operational programmes in terms of goals, proposed action plans and expected results. It is also crucial to highlight that RIS3 strategies require a sound system of monitoring and impact indicators to measure the expected effects of this regional innovation policy tool. The monitoring and evaluation system will be possible to be assessed in a few years after its full implementation.

One of the main goals of the RIS3 strategies is to focus on promoting structural change in the economy through investments in knowledge-based assets and better governance in STI policy making. It is expected that these strategies are going to lead to socio-economic changes in the analysed countries and regions in order to boost innovation and create competitive advantage. Once again these effects will be measurable in a few years, once the RIS3 strategies fully implemented.

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