

2018/03

Smart specialization and institutions: Towards a process of institutional discovery and change

Maximilian Benner

**Smart specialization and institutional context:
Towards a process of institutional discovery and change**

Maximilian Benner^{a*}

^aCentre for Social Innovation, Vienna, Austria

Phone: +43-1-49 50 442 68

E-mail: benner@zsi.at

Smart specialization and institutions:

Towards a process of institutional discovery and change

Recent years have seen much experimentation with smart specialization strategies (RIS3) and their entrepreneurial process of discovery (EDP) in European regions. From the point of view of relational and evolutionary economic geography, the EDP can be seen as an opportunity to address institutional questions. This is important because institutions can explain why some policies are eventually successful while others are not. This article argues that the EDP is a vehicle for regional stakeholders and policymakers to discover institutional patterns specific to the context of the regional or national economy, and to define policies either consistent with existing institutions or aiming at institutional change. Doing so is important because designing context-specific regional policies such as a RIS3 requires a deep understanding of the institutional context of the economy. The article proposes a framework to understand and analyze the two roles of the EDP in terms of institutions: First as an institutional discovery process, and second as an institutional change process. The article builds on evidence from empirical case studies in two regions (Lower Austria, Austria and Bolzano-Alto Adige/South Tyrol, Italy) and two small countries (Slovenia and Croatia). The case studies focus on how these regions and countries organized the EDP that eventually led to the definition of their RIS3, and on the institutional dynamics of EDPs in discovering and changing institutions. The article concludes by proposing policy implications that contribute to the present debate on post-2020 EU Cohesion Policy.¹

Keywords: smart specialization; institutions; regional development; regional policy; EU Cohesion Policy

JEL codes: B52; D02; L26; R11; R59;

Introduction

The European Union's regional policy, one of the largest areas of EU-level public investment, during the current programming period from 2014 to 2020 is marked by the notion of smart specialization. This attempt to align spending from the EU's structural funds with overarching policy priorities through regional specialization, and to do so in a

participatory public-private prioritization process can qualify as the EU's current approach of industrial policy (Radosevic, 2017a; 2017b), and thus has to respond to long-standing critiques questioning the effectiveness of industrial policies. Given that institutional economic geography has demonstrated the importance of a region's institutional context for socio-economic processes such as innovation and entrepreneurship (Glückler & Bathelt, 2017), the effectiveness of industrial or regional policies hinges on their consistency with a national or regional economy's institutional context and on their ability to generate institutional changes needed as prerequisites to achieve established policy goals such as economic growth and employment creation.

Given that the EDPs of European regions in past years represent a vast field for policy experimentation, it is somewhat surprising that scientific attempts to conceptualize the EDP as an exercise in embedding regional policymaking in the wider socio-economic context are still limited. The debate on how to discover regional specializations used to focus on "techno-economic potentials" (Kroll, 2015: 2080) mainly while ignoring more complex, underlying institutional elements of the regional context (Kroll, 2015: 2080-2018). While there seems to be a growing consensus in the literature that EDPs are constrained "by underdeveloped institutional contexts in less-developed EU regions and countries" (Radosevic, 2017b: 347), what is usually called "institutional context" in this strand of literature is governance involving questions related mainly to organizations. What is understood in this article under the term institutions is something more specific and distinct from formal governance questions (Bathelt & Glückler 2014; Glückler & Bathelt, 2017; Glückler & Lenz, 2016). I argue that looking at the institutional context with its prescriptive rules, organizations, and institutions understood as "stable patterns of social practice" (Bathelt & Glückler, 2014: 346) as well as related processes of institutional change through upward and downward causation (Glückler & Lenz, 2016)

is important for two reasons. First, doing so enables agents to understand regional (or national) economies with their capabilities, assets, and trajectories. Second, considering an economy's institutional context enables policymakers to design institution-sensitive policies (Benner, 2017a), that is, policies either consistent with existing institutions or focusing on effective institutional change. In my view, institution-sensitivity of regional policies is a problematic issue not only for lagging regions or in Southern and Eastern European countries. Rather, institution-sensitivity is a cross-cutting challenge for policymakers and practitioners in all kinds of regions. Achieving institution-sensitivity in regional policy design and implementation requires tools to discover institutional patterns and realities which are often not obvious, and to consider the opportunities and limits of policies for institutional change. I argue that the EDP offers a framework for achieving both tasks, but doing so calls for a better understanding of how the EDP can serve as an institutional discovery and change process.

The article is structured as follows: First, the article briefly summarizes the theoretical foundations of the smart specialization approach, as well as its political relevance in EU cohesion policy. The article goes on by reviewing approaches of institutional economic geography that seek to clarify the role of institutions in regional economic growth and notably in regional innovation processes. Focusing on the EDP inherent to the smart specialization approach, the article proposes a framework to conceptualize the functions of this process in discovering and changing institutions in a national or regional economy. Using this framework, the article presents findings from four case studies from two regions (Lower Austria and Bolzano-Alto Adige/South Tyrol, Italy) and two small countries (Slovenia and Croatia) on the institution-sensitivity of the EDPs that led to these regions' or countries' smart specialization strategies. The article closes by drawing generalized conclusions and presenting policy implications on how to

seize the opportunities for institutional discovery and change afforded by the smart specialization approach.

Smart specialization in Europe

Smart specialization has been the salient trend in regional policy in the European Union in recent years and can be seen as the EU's current industrial policy (Radošević, 2017a). The conceptual thoughts behind smart specialization are firmly rooted in newer theories on industrial and innovation policies, while the practical implementation all across the EU and its neighborhood are driven by the political decision to make smart specialization a cornerstone of EU cohesion policy.

The core idea of the smart specialization approach is that because of agglomeration effects and indivisibilities in research and development (R&D), large or dense regional economies with a critical mass of agents, resources and relationships are at an advantage when pursuing innovation-driven structural policies. For other regions, instead of spreading scarce public resources broadly, there is a case for focusing on a limited number of fields in line with their relative strengths or, in economic terms, their comparative advantages (Foray, 2017: 41-42; Foray et al., 2009; 2012).

In terms of process, a so-called entrepreneurial process of discovery (EDP) is at the heart of the smart specialization approach. The EDP is meant to be a participatory process involving public and private agents during which regional capabilities are to be identified, and promising fields of specialization are to be agreed on. The EDP is supposed to generate a regional (or national) research and innovation strategy for smart specialization (RIS3) that embodies a common vision supported by public and private agents alike, and to define actions to be implemented together (Foray et al., 2009; 2012).

The EDP's objective is to discover niches within a national or regional economy that build on existing or emerging comparative advantages, but with a focus on cross-

sectoral activities and capabilities instead of sectors or firms, and with a focus on transforming the economic structure (Foray, 2017: 42-43; Radosevic, 2017a: 20). In an evolutionary perspective, these niches do not necessarily have to be at the technological frontier but may instead build on complementarities in the particular sectoral profile of a national or regional economy (Foray, 2017: 47).

The participatory nature of the EDP means that instead of traditional top-down policymaking, the public and private sector have to align their priorities. At the same time, since smart specialization is a tool of EU Cohesion Policy, prioritization and action planning during the EDP, as embodied in the eventual RIS3, is meant to align regional or national priorities in EU structural fund spending with overarching EU policy priorities such as those defined by the “Europe 2020” strategy and national reform programs. Apart from this vertical alignment between European and national or regional priorities, horizontal alignment between public and private agents nationally or regionally can provide greater leverage of EU structural funds spending and concomitant national co-funding (Austrian Conference on Spatial Planning, 2016: 9; Reid & Maroulis, 2017: 299) because consistency with private-sector priorities might generate additional investments by private-sector businesses. Thus, the EDP is essentially an exercise of building a public-private coalition for regional development (European Commission 2018: 30).

However, the notion of an “entrepreneurial” process is misleading. Indeed, the EDP is more about prioritization and action planning. To be adapted to an economy’s structure, context, and comparative advantage, the starting point of an EDP has to be evidence-based, e.g. by building on quantitative and qualitative data gathered through studies or mappings (Foray, 2017: 45-46; Foray et. al., 2012: 9; Radosevic, 2017a: 20). The subject of the participatory process, then, is not really about entrepreneurially discovering new fields of specialization based on assets or capabilities in a nation’s or

region's knowledge base (Asheim et al., 2017: 76) but about prioritizing which of them to promote through public and private funds, planning interventions to do so, and distributing tasks among stakeholders accordingly – as well as monitoring policy effectiveness permanently and (re)adjusting the strategy over time (Radosevic, 2017b: 347).

Indeed, as Benner (2014; 2017b) and Gonchar et al. (2017: 228-229) argue, entrepreneurial discovery happens at the micro level of the economy, driven by Schumpeterian-type individual entrepreneurs. The challenge at the meso level is, then, how to translate successful path creation (Asheim et al., 2017) through micro-level agency (Benner 2014; 2017b) into sustained meso-level (i.e. regional or sectoral) economic growth (Gonchar et al., 2017: 229). Precisely this is the role of participatory prioritization and action planning during the EDP.

In the EU, smart specialization strategies are an *ex-ante* conditionality for access to innovation-related funding under the EU's cohesion policy (Radosevic, 2017a: 20). More precisely, Art. 4.3 No. 2 of the EU regulation No. 1303/2013 setting the framework for the Union's cohesion policy between 2014 and 2020 states that:

“Member States shall develop national and/or regional 'smart specialisation' strategies in line with the National Reform Programme, where appropriate. Such strategies may take the form of or be included in a national or a regional research and innovation strategic policy framework for 'smart specialisation'. Smart specialisation strategies shall be developed through involving national or regional managing authorities and stakeholders such as universities and other higher education institutions, industry and social partners in an entrepreneurial discovery process” (Regulation No. 1303/2013 of the European Parliament and of the Council, Art. 4.3 No. 2).

This stipulation basically means that smart specialization strategies shall be designed either regionally or nationally (the latter particularly in the case of smaller countries), and

that some form of EDP has to be organized. However, two caveats apply: First, smart specialization strategies do not necessarily have to be explicit but can be part of a “strategic policy framework”, leaving room for continuity by using or updating pre-existing strategic documents. Second, precisely how to design the EDP is not made clear. Thus, ample room was left for experimentation among European countries and regions when designing and implementing their EDPs (e.g. Kroll, 2015).

During this experimentation process, a number of challenges became apparent, such as finding the appropriate spatial level, continuing legacies of top-down planning, or limited capabilities for evidence-based policymaking (Capello & Kroll, 2016). Notably, governance-related problems such as lacking capabilities of public-private coordination including a “culture of hierarchical policymaking” (Kleibrink et al., 2017: 6) as well as intra-governmental complexity have emerged as serious bottlenecks (Kroll, 2015: 2082-2084) and are often but imprecisely subsumed under the header of “institutional” problems. One might add to these factors low trust in government (Kleibrink et al., 2017: 11), presumably a considerable institutional problem in Southern and Eastern European countries. On the positive side, the survey undertaken by Kroll (2015: 2091-2094) suggests that Southern and Eastern European regions have benefitted from their EDPs not mainly because of resulting “discoveries” of specializations but because of the introduction of new, bottom-up policymaking approaches. This insight is important for governance aspects of smart specialization but treats only a small part of the institutional context of a national or regional economy.

More recently, the smart specialization approach has diffused to countries outside the EU such as accession and neighborhood countries. This new wave of smart specialization processes and related EDPs offers an opportunity to learn from EU countries’ and regions’ experiences. While recommendations on how to implement the

smart specialization approach in accession and neighborhood countries exist (e.g. Kleibrink et al., 2017), precisely how to use the EDP as a vehicle for institutional discovery and change is a highly relevant question in accession and neighborhood countries typically marked by a long-term politico-economic transition process. In addition, learning from experience gained in the current programming period of EU cohesion policy from 2014 to 2020 will be highly relevant to inform the design and implementation of post-2020 EU cohesion policy. Thus, elucidating the EDP's role as a possible tool for ensuring institution-sensitivity in regional policymaking is highly important. For this, a clear conceptual understanding of what makes up the institutional context of a regional (or national) economy is needed. Therefore, the next section reviews approaches from institutional economic geography that attempt to clarify the role of institutions in regional development and policy.

The role of institutions in regional development

Institutions matter for regional development. They do so because they shape the institutional context of regional (or national) economies and condition processes related to economic growth such as innovation and entrepreneurship (Glückler & Bathelt, 2017).

There is considerable ambiguity on what the term “institutions” precisely means. Recently, institutional economic geography has come up with attempts to achieve more clarity and precision both in terminology and in our understanding of what makes up the institutional context of a regional economy. Bathelt and Glückler (2014: 346) define institutions as “ongoing and relatively stable patterns of social practice based on mutual expectations that owe their existence to either purposeful constitution or unintentional emergence.” These patterns include, for example, customs, routines, attitudes, mentalities, (dis)trust, reputation, the affinity to cooperate or compete, personal relationships, social capital (Putnam 1993; 1995), or what is often vaguely called

“culture”. Further, there is a distinction between prescriptive rules such as explicitly codified laws and regulations, organizations as collective agents such as government agencies, and institutions (Bathelt & Glückler, 2014: 346; Glückler & Lenz, 2016). There are various kinds of interactions between these three components of an economy’s institutional context. Glückler and Lenz (2016) propose a taxonomy of interactions between prescriptive rules (established by policies and implementing them) and institutions. This taxonomy includes reinforcing, substituting, circumventing, and competing relationships. When considering the presumptive effectiveness of policies, knowing the precise nature of rule-institution interactions is important. In line with Glückler and Lenz (2016: 270), Benner (2017a) argues that the institution-sensitivity of regional policies is important for their effectiveness, and that institution-sensitivity requires that policies focus on the consistency between rulemaking and institutional realities. Following the taxonomy proposed by Glückler and Lenz, the following types of interactions are most relevant for regional policymaking (Benner, 2017a: 5-6):

- Policies setting up institution-reinforcing rules reconfirm the institutional context and are thus likely to be effective but not necessarily relevant.
- Policies shaping institution-circumventing rules can be effective in promoting competitive upgrading through collective action in networking fora such as cluster initiatives.
- Policies trying to establish institution-competing rules, in contrast, face low chances of success.
- In the opposite direction, rule-substituting or rule-circumventing institutions can be shaped by micro-level agents (Benner, 2014; 2017b) and constitute some form of institutional entrepreneurship. They can be effective in coping with a deficient

policy environment and may be necessary when higher-level political reform is not likely.

Apart from these static rule-institution relationships, an economy's institutional context is shaped by dynamic processes of institutional change through both upward and downward causation (Bathelt & Glückler, 2014; Glückler & Lenz, 2016). While upward causation is driven by micro-level agency (Benner, 2014, 2017b), downward causation is driven by institutional policymaking, that is, by policies that either deliberately aim towards institutional change or that change institutions in unintended and unforeseen ways.

The importance of an economy's institutional context in relation to the smart specialization approach is obvious. As the European Commission (2018: 30) acknowledges, insights on "the socio-economic fabric" of a regional economy are critical for identifying fields of specialization. Further, during the EDP, public-private dialogue needs to rest on institutions such as trust and credibility (European Commission 2018: 41). Capello and Kroll (2016: 1395) cite a "lack of connectedness, entrepreneurial spirit, (...) quality of local governance and a critical mass of capabilities to develop collective learning processes" as constraints to the implementation of the smart specialization approach in some cases. These aspects are strongly related to institutional context since the lack of connectedness or collective learning capabilities may suggest the prevalence of institutions biased against collaboration, while entrepreneurial attitudes are usually a conglomerate of several institutions such as risk adversity or employment preferences.

The static and dynamic elements of an economy's institutional context presented here can serve to construct a framework for institution-sensitive policymaking within the EDP. The next section proposes such a model by building on the insights from institutional economy geography introduced above.

The EDP as an institutional discovery and change process: a framework

The idea of self-discovery of national or regional comparative advantages and promising opportunities for new path creation (Asheim et al., 2017) did not start with the smart specialization approach but actually precedes it. Indeed, as Foray (2017: 47) acknowledges, the notion of self-discovery stems from Hausmann and Rodrik (2003).

Radosevic (2017a: 6-9) mentions that approaches of what he calls new industrial policy require “self-organizing mechanisms within business and industry” (Radosevic, 2017a: 7) which involve experimentation and a “policy discovery process” (Radosevic, 2017a: 4). Given conditions marked by high degrees of uncertainty and complexity, Radosevic (2017a: 7) calls for governance arrangements for aligning experiences from various agents.

The common features between various approaches of new industrial policies identified by Radosevic (2017a: 9) include the recognition that government (or any other single agent) is not able to perceive the national or regional economy in its full complexity, and that policy design is basically a matter of discovering instead of picking or decreeing economic trajectories (i.e. an evolutionary view).

These insights do not only refer to “hard” economic realities such as growth and employment patterns which can be analyzed quantitatively, but equally to the institutional context of national or regional economies. For example, Karo et al. (2017: 273-274) present different styles of policymaking traditions in either market-based, neoliberal countries or those following a more corporatist model. In terms of institutional approaches, this distinction is reminiscent of the dichotomy between liberal market economies and coordinated market economies proposed by the Varieties of Capitalism approach (Hall & Soskice 2001). In terms of Central and Eastern European countries, however, due to their system transformation the institutional context might be different

and marked by weaker traditions of public-private cooperation or university-industry collaboration (Karo et al., 2017: 274).

Radosevic (2017a: 20) traces the inherent rationale of the EDP back to the Hayekian-Polanyian idea that tacit knowledge can be identified within the cognitive framework of private agents in markets but extends it to the non-market setting of a participatory, collective prioritization and action planning process. This is the “entrepreneurial” core of the EDP, and this idea extends to the institutional context. If the EDP enables agents to make prioritization decisions on the basis of their pooled tacit knowledge in terms of capabilities and promising techno-economic trajectories, so it does on the basis of tacit knowledge about (parts of) the national or regional economy’s institutional context. Actually, possibilities for collective identification of strengths and weaknesses as well as promising future trajectories in an EDP involving competing entrepreneurs and businesses may be limited because they will be hesitant to openly share sensitive knowledge with competitors (Benner, 2014: 40). Pooling tacit knowledge seems more promising when it comes to shared conditions and resources including the institutional context instead of businesses’ individual competitive advantages. This means that revealing and understanding the institutional context agents act within may be the primary analytical merit of the EDP, much more so than entrepreneurially discovering business opportunities which is probably best left to micro-level entrepreneurial agency (Benner, 2014; 2017b).

Besides its role in making the tacit institutional context (more) explicit, the EDP can serve as a basis for tackling institutional change explicitly or implicitly, through downward causation (i.e. through policymaking during RIS3 implementation) or through downward causation (i.e. through agents’ changed behaviour during or after the EDP). Because “the analysis and subsequent learning that accompany EDP can change

individuals views” (Radosevic, 2017a: 21), the fact that agents participate in an EDP in and by itself can lead to institutional change through upward causation driven by agents. In this sense, the EDP can contribute not only to self-discovery in terms of “learning what one is good at producing” (Hausmann & Rodrik 2003: 605) but equally in terms of learning of which institutional context one is embedded in. During the EDP, tacit knowledge about institutional context can be made explicit. By doing so, agents involved in the EDP may become capable of affecting their institutional context, either deliberately and explicitly by agreeing on policies for downward causation of institutional change, or more subtly through conscious or unconscious behavioral changes leading to upward causation of institutional change.

Figure 1. A framework for institutional discovery and change within the EDP (Source: own work)

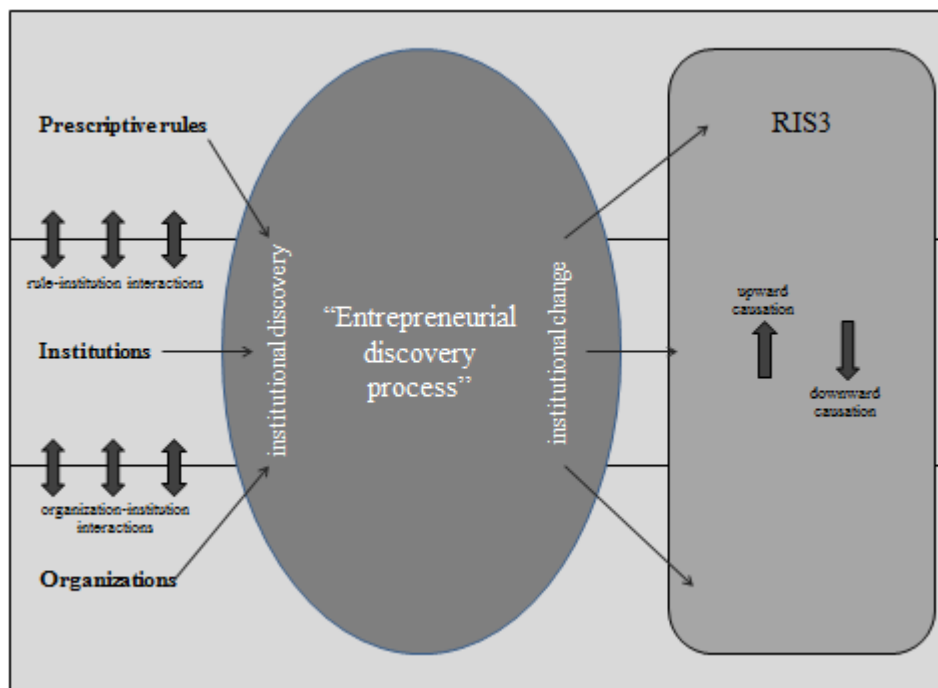


Figure 1 illustrates the stylized framework of the EDP as a process of institutional discovery and change. Building on the elements of institutional context proposed by

Bathelt and Glückler (2014), the framework distinguishes between prescriptive (codified) rules, institutions understood as “stable patterns of social practice” (Bathelt & Glückler, 2014: 346), and organizations. Following Glückler and Lenz (2016), rule-institution interactions such as institution-reinforcing rules, institution-circumventing rules, institution-competing rules, rule-substituting or rule-circumventing institutions are represented as double-sided arrows between prescriptive rules and institutions in Figure 1. Similarly, it is possible to consider analogous relationships between organizations and institutions, termed here “organization-institution interactions”. The three elements of the regional or national institutional context as well as their relationships with each other enter the EDP through institutional discovery. In practice, this means the EDP has to include an evidence base gathered through sound institutional analysis, e.g. through qualitative institutional research. Depending on the normatively set policy goals to be achieved by the eventual RIS3, agents involved in the EDP should design policies, set priorities, and agree on actions in a way that is consistent with the institutional context as analyzed, or that aims at the institutional change desired. Institutional change can happen through upward causation (e.g. through behavioral changes in the EDP or in RIS3 implementation) or downward causation. Downward causation is driven by rules including those shaped by policies defined in the RIS3. In practice, this institutional change process can happen either explicitly and deliberately through policies aiming at downward causation through rules set by the RIS3, or unconsciously through upward causation of institutional change caused by behavioral changes. Provided that the EDP is understood as a permanent process leading to repeated adjustment of the RIS3 through policy learning, upward institutional change can indirectly lead to changes in the RIS3 and thus on the level of rules.

Importantly, institutional analysis as the evidence base of the institutional discovery process may be more effective when looking not only inside the region but outside, too. Inter-regional benchmarking could be part of the institutional discovery process but requires considerable prior knowledge on the institutional contexts of the economies compared. Involving agents such as students, workers, scientists or entrepreneurs who left the regional or national economy analyzed to study, work, or set up a company elsewhere could be a good approach to discover institutionally-founded constraints to path development. Often, diaspora agents will hold highly relevant explicit or tacit knowledge on how their new host regions differ from their regions of origin in terms of “culture” or “mentality”. Through such an outward-looking approach, institutionally-founded lock-in situations (Grabher, 1993) or other institutional conditions limiting path development in a region or driving path creation to other regions (e.g. Storper & Walker, 1989) could be unveiled. How precisely to implement such an approach will need careful consideration, but the approach is likely to provide useful hints even if there is a certain risk of generating only anecdotal evidence.

Table 1. Options in institution-sensitive policymaking during the EDP (Source: own work).

	Institutional discovery process	Institutional change process
Institutional change objective	X	X
Institutional consistency objective	X	

Apart from the mechanisms of institutional discovery and change represented in Figure 1, there is a second important aspect of institution sensitivity in smart specialization. When agreeing on policies to be included in the RIS3 during the EDP, it makes sense for agents to use the institutional evidence base gathered through institutional discovery to consider the likelihood of policy effectiveness in institutional terms. Depending on the nature of rule-institution interactions, some policies (e.g. institution-competing rules) might be less promising than others (e.g. institution-reinforcing rules) and policies should be selected accordingly (Benner, 2017a; Glückler & Lenz, 2016). In this case, the EDP functions as institutional discovery process but not necessarily as an institutional change process. Policies are designed in an institution-sensitive and aim at institutional consistency. During the EDP, agents can discuss and consider in which situations to focus on institutional change and how to achieve it, and in which situations to focus on institutional consistency. Table 1 illustrates these options during the EDP, depending on objectives (institutional consistency or institutional change) and tools (institutional discovery process or institutional change process).

Based on this framework, the following section looks at the institution-sensitivity of EDPs in four case studies, two on the regional scale and two on the national scale.

Case studies

The thoughts presented in the previous section can serve to look at the institution-sensitivity of EDPs and RIS3. In the present section, this is done in the case of two regions and two small countries in the EU who implemented the smart specialization approach in recent years. The two regional case studies refer to two regions from Western European countries, Lower Austria in Austria and Bolzano-Alto Adige (South Tyrol) in Italy. The two national case studies refer to two Eastern European countries that developed their RIS3 nationally, Slovenia and Croatia. The case studies are based on a document analysis

of the relevant RIS3 and a number of semi-standardized interviews, either personally or on the phone, with practitioners and stakeholders who were involved in the EDPs. Altogether, 10 interviews were conducted in August and September 2018. The purpose of the interviews was to analyze how EDPs and RIS3 considered institutional context, following the conceptual thoughts proposed in the previous section. In particular, the interviews were conducted to provide insights on the following questions:

1. Was the EDP used as an institutional discovery process and if so, how?
2. Were policies agreed or designed in a way consistent with existing institutions (institutional consistency)?
3. Do policies agreed on focus on achieving institutional change (downward causation)?
4. Did the EDP lead to institutional change through new patterns of behavior by agents (upward causation)?

The general insights gained from the document analysis and the interviews are presented in the following sub-sections, while a brief summary at the end of this section draws comparative conclusions and relates to the four questions guiding the case studies.

Lower Austria

Austria's smart specialization approach is defined by the national-level policy framework for smart specialization (Austrian Conference on Spatial Planning, 2016), in line with the flexibility afforded by what Art. 4.3 No. 2 of Regulation No. 1303/2013 defines as meeting the requirements of the smart specialization *ex-ante* conditionality. Thus, the document Austria submitted to the European Commission to meet the conditionality was the national research, development and innovation strategy (Austrian Conference on

Spatial Planning, 2016: 11; Federal Chancellery et al., 2011). Still, on the regional level, provinces (*Bundesländer*) have their own economic or innovation strategies that qualify as regional RIS3. Lower Austria published its current regional economic strategy in 2014 (Office of the Provincial Government of Lower Austria, 2014).

The region's RIS3 has to be seen within the main lines of Lower Austria's region policy which have evolved over time. The first major policy pillar is the setup of four science and technology parks ("technopoles") for fields such as medical biotechnology, agrifood and environmental technologies, or medical and materials technologies. The second pillar of Lower Austria's regional economic policy focuses on network promotion in cluster initiatives for industries such as construction, food, plastics, and mechatronics (Austrian Conference on Spatial Planning, 2016: 43).

The strategy includes an analysis of strengths, weaknesses, opportunities and threats (SWOT) of Lower Austria's regional economy but this analysis does not refer to any aspects of institutional context. The RIS3 follows the vision of offering good framework conditions for entrepreneurs in the sense of territorial competitiveness but tends to define framework conditions in terms of support schemes and services instead of more fundamental institutional conditions (Office of the Provincial Government of Lower Austria, 2014: 6-8).

Under its objective of fostering start-up dynamics, the RIS3 calls for "awareness raising concerning business start-up (as early as school and college)" with the intention of "improving the business start-up environment in order to encourage schoolchildren and students as well to consider the idea of founding a business as an option" (Office of the Provincial Government of Lower Austria, 2014: 17). This policy objective implicitly aims at institutional change by strengthening entrepreneurial attitudes.

Interviews confirmed the RIS3's character as an overarching umbrella to the region's pre-existing programs such as the technopoles and clusters programs started in 2004 and 2007, respectively. By not defining areas of specialization directly, the RIS3 is designed to leave agents with a considerable degree of flexibility to react to trends and evolutions in the regional economy by having cluster networks or technopoles cover new themes. Instead of a top-down definition in the RIS3, the priorities currently pursued are the result of a long-term, incremental process of finding niches of specialization in the regional economy. Due to the long-term nature of the technopoles and clusters programs and the stable funding framework provided by the provincial government, policymakers have apparently managed to create stable expectations on behalf of companies and thus a certain degree of stability in the institutional context.

Since Lower Austria's regional government started participatory strategy design with the elaboration of its first regional innovation strategies in the late 1990s, the EDP leading up to the current RIS3 was not a fundamentally new experience. While companies were invited to dialogue workshops, company input was mostly indirect since a small circle of the region's economic development agencies managing cluster networks, technopoles, and other networking schemes were asked for input. In addition, agencies conducted needs assessments and interviews among their client companies. Interim results were repeatedly coordinated with membership organizations such as the chamber of economy and the regional business association, thus creating a feedback loop with companies. Agencies could build on their long-standing experience in liaising with companies through cluster and technopole managers and on the degree of trust built over time. Companies were motivated to participate in the EDP because they were convinced that their input would be taken seriously.

For instance, the current RIS3's focus on entrepreneurship is a result of dialogue workshops. While entrepreneurship support was part of previous strategies, the discussions in the dialogue workshops led to the theme being upgraded. The focus on building entrepreneurial attitudes among students, however, was not the result of an explicit institutional analysis but rather the result of evolutionary policymaking by the provincial government and economic development agencies during previous strategies.

Interviewees emphasized that the region's RIS3 and its implementation do not follow a "copy-and-paste" logic. While agents do learn from good practices from other regions, they are adapted to the region's (institutional) context through a process of discussion between agents including companies. Intermediary organizations such as the chamber of economy play an important translator role here. Since the chamber maintains a network of local offices throughout the region staffed with advisors, the chamber's employees are in close contact with companies and can be expected to know the local economic context well. As one interviewee said, "the local office director is known to entrepreneurs. If they meet him on the street on a Sunday, they greet him and tell him their needs" (Interview NOL2). Similarly, cluster managers or technopole managers are in close touch with their member or client companies and are embedded in same local institutional context.

RIS3 implementation is steered through a permanent coordination process between the provincial government and intermediary organizations such as economic development agencies. If major deviations from pre-defined objectives become apparent, economic development agencies are requested to conduct surveys among their client companies, again building on the trust built in long-standing cooperation in clusters, technopoles, and similar schemes. Company involvement in RIS3 implementation is thus indirect. This coordination process underscores the corporatist nature of economic

policymaking in Lower Austria. The coordination process between the provincial government and intermediate organizations is understood as a bottom-up mechanism to align policy with company needs, and as a top-down process of enhancing the outreach of policy priorities among companies such as currently raising awareness for digitalization. In both directions, coordination between regional government and companies runs through intermediary organizations such as regional development agencies and the chamber of economy. This is possible because of the long-standing cooperation between these intermediaries and companies and the trust built there, e.g. in cluster and technopole schemes or, in the case of the chamber, local branch offices and sectoral associations. For instance, joint initiatives between the provincial government and the chamber to support innovative upgrading of companies started in 1979 and include local counselling for individual companies.

Finally, an interesting insight about institutional context in Lower Austria is that agents deliberately use instruments to affect institutions linked to inter-company competition and prestige. For instance, to motivate companies to participate in innovation support schemes, an intermediate organization published success stories of participating companies to increase peer pressure.

Bolzano-Alto Adige (South Tyrol)

The Italian province of Bolzano-Alto Adige (South Tyrol) published its RIS3 in 2014, a process that was preceded by various other policy initiatives, strategies and studies such as a 2012 study on the setup of a technology park elaborated by the Free University of Bolzano. With its German-speaking majority and its location at a major European north-south transportation axis, the province defines as the RIS3's mission to position the regional economy as a hub between Italian, Austrian and German markets. As a continuation or previous studies and strategies, the province's RIS3 defines the following

areas of specialization: energy and environment, alpine technologies, food technologies, information and communication technologies and automation, creative industries, and natural spa treatments and medical technologies (Autonomous Province of Bolzano-Alto Adige, 2014).

Referring to aspects of institutional context, the RIS3 mentions the difficult relationship between business and academia but does not provide details. While the RIS3 addresses the province's bi-cultural heritage, it notes a certain degree of hesitation by regional agents to seize related opportunities and again does not provide more a detailed institutional analysis. Further, the strategy sets out to increase firms' absorptive capacity, another aspect of institutional context not explained more thoroughly. As an overarching institutional objective, the RIS3 calls for an improvement of the regional innovation "culture" (Autonomous Province of Bolzano-Alto Adige, 2014: 8, 16-18).

The RIS3 includes a SWOT analysis of the province's regional economy. The analysis refers mainly to "hard" economic data such as income, employment or R&D expenditure and does not include aspects of institutional context. The only aspect somewhat related to institutions is the bilingual capacity of the province's population classified as an opportunity (Autonomous Province of Bolzano-Alto Adige, 2014: 18-20).

The EDP undertaken during the preparation of the RIS3 included focus group discussions among associations, enterprises and R&D entities as well as a survey among enterprises and workshops (Autonomous Province of Bolzano-Alto Adige, 2014: 20-24, 67-68). The process included a capability analysis in view of RIS3 implementation which does refer to some aspects of institutional context such as a positive attitude towards identifying synergies among R&D entities, a propensity towards imitating innovation among SMEs, and capabilities for defining areas of cooperation (Autonomous Province of Bolzano-Alto Adige, 2014: 23-24). Remarkably, the RIS3 mentions that the EDP

precedes the smart specialization approach since, for instance, a participatory prioritization process in the energy and environmental sector dates from 2002 while in other sectors, participatory strategy design processes are younger but still precede the smart specialization era (Autonomous Province of Bolzano-Alto Adige, 2014: 24-28).

In terms of actions proposed, the RIS3 does not explicitly aim at institutional change but it does in some respects address aspects of institutional context. In particular, the strategy defines actions to promote cooperation between agents and notably between firms (Autonomous Province of Bolzano-Alto Adige, 2014: 56-58).

RIS3 implementation was foreseen as a participatory process, suggesting an understanding of the EDP as a permanent endeavor (Autonomous Province of Bolzano-Alto Adige, 2014: 68-69). Even so, given the previous efforts of participatory strategy design and policymaking in South Tyrol that preceded the smart specialization approach, involving stakeholders in RIS3 implementation may not be something radically new for the province but rather reflect an established characteristic of institutional context.

During the interviews, some nuances emerged. Despite prior experience with participatory strategy design, the EDP was considered a new approach that came at a formative time when the present innovation system of the province was still new. In-depth face-to-face interviews with companies were carried out during the EDP and arguably established a trustful atmosphere for companies to share information. Private-sector involvement in RIS3 implementation is limited to annual meetings of the innovation board and thus less extensive than foreseen in the RIS3. However, this was apparently not due to a lack of behavioral change since the EDP is seen to have changed the dynamics of cooperation in the regional economy. Collaboration between the university and firms is perceived to have considerably improved, with firms now actively approaching the university for collaborative R&D and joint ERDF-funded projects.

However, due to the province being a rather small regional economy, cooperation among agents was not scarce even before the EDP. Many agents knew each other, suggesting a considerable stock of social capital. The EDP benefited from cluster and networking support schemes of economic development agencies because agencies' staff knew major companies and enjoyed trust and a good reputation. The EDP made explicit an established consensus on the trajectory of regional development to be pursued: a trajectory focused on supporting export-oriented SMEs in existing areas of specialization, thus making implicit, tacit institutional knowledge on agents' shared vision of economic development explicit. Entrepreneurship was not a major pillar of this consensus because a lack of entrepreneurial "culture" was perceived to be a characteristic of the regional economy. Still, the need to strengthen the regional innovation system was a shared goal that included eventually improving the framework conditions for entrepreneurship. The major vehicle to do so was the setup of the "NOI" technology park, an idea that precedes the EDP. Thus, South Tyrol's EDP exhibited a strong degree of path dependency and followed the trajectories established by previous collaborative schemes without radical institutional change. Even so, the shared vision embodied in the RIS3 is seen to have reinforced agents' and companies' awareness on the need to cooperate, including in university-industry collaboration.

Slovenia

Among Central and Eastern European economies, Karo et al. (2017) consider Slovenia a rather corporatist and consensus-based economy with a comparatively strong innovative performance. In terms of the EDP that led to the adoption of Slovenia's RIS3, Karo et al. (2017: 283-284) state a fairly extensive consultation of business representatives such as the Chamber of Commerce and Industry (compared to Baltic countries). The result is Slovenia's smart specialisation strategy called S4. This RIS3 defines three priority areas:

“healthy working and living environment” including subjects such as smart cities and smart buildings, “natural and traditional resources for the future” including sustainable tourism and food production, and “(S)industry 4.0” including health/medicine, mobility, or materials (Government Office for Development and European Cohesion Policy, 2015).

While the analytical part of the Slovenian RIS3 includes a SWOT analysis of the Slovenian innovation system, aspects of institutional context are virtually absent. The only point mentioned that somewhat relates to institutional context is weak cooperation between agents in the innovation system (Government Office for Development and European Cohesion Policy, 2015: 6-7).

The EDP undertaken in between 2012 and 2015 included a multi-stage process of collaborative project design and concretization that culminated in a conference in June 2015. The subsequent elaboration of action plans by “strategic partnerships” including public and private agents and co-funded by them is seen as a continuation of the EDP. In sum, 1,500 participants were involved in the EDP (Government Office for Development and European Cohesion Policy, 2015: 10-12, 44-46).

The Slovenian RIS3 does not explicitly focus on aspects of institutional change but lists cooperation between agents, including notably joint R&D projects, as well as entrepreneurship as themes to be supported. However, institutionally founded preconditions for cooperation such as trust or risk tolerance are not explicitly addressed (Government Office for Development and European Cohesion Policy, 2015).

The interviews highlighted several important aspects of the Slovenian EDP. Due to the small size of the national economy, agents often knew each other before and cooperation did occur to some degree. However, the EDP introduced a new approach in two ways: First, it represented a new approach to policymaking because it gave firms a real say in strategy design. Second, it was a forum for building trust among firms. The

EDP was primarily focused on SMEs which were reluctant initially because they feared marginalization by larger firms. After the economic crisis Slovenia previously had suffered from, private-sector companies were looking for the government to provide policy guidance and were willing to cooperate with the government and amongst each other to develop a new growth model. Additionally, since Slovenia's first draft RIS3 was rejected by the European Commission, agents feared that EU cohesion policy funds might be lost because of conditionality. These perceptions arguably facilitated the EDP.

The government's smart specialization coordination team learned about aspects of institutional context during the process. For example, they were surprised by the high willingness of companies to cooperate with government. The evidence base gathered for the EDP referred to quantitative data such as the incidence of university-industry collaboration. Based on this data, the coordination team visited agents to find out more about the nature and problems of cooperation. It is likely that these qualitative interviews gave coordinators a deeper implicit understanding of parts of the economy's institutional context.

Key people organizing the EDP managed to convince firms to share their visions and strategies because of the perspective of collaborative projects being supported through cohesion policy funds, and because these key people were seen as independent and trustworthy. For instance, this trust-building environment enabled firms to contribute confidential information to the EDP. In its open call for ideas, the government offered businesses the possibility to mark information as confidential. As confidential information did not leak, companies' trust in the process was reinforced. Business support organizations such as the Ljubljana Technology Park acted as mediators and contributed to trust-building. While firms sent representatives from technical levels instead of top management, the EDP gave these technical and lower management staff an opportunity

to widen their scope of cooperation by getting in touch and cooperating with agents they had not known before, including SMEs and entrepreneurs. In this sense, interview partners saw the EDP as having led to the emergence of new routines. The strategic platforms coordinating RIS3 implementation and the continued practice of the coordinators on the governmental side talking to companies in a permanent dialogue process may confirm these new routines of cooperation and trust-based relationships.

Croatia

Croatia is to some degree a special case because it joined the EU only in 2013 and thus offers one of the most recent examples of implementation of the smart specialization approach among EU member states. Croatia published its national RIS3 in 2016. With more than 200 pages, the strategy's English-language version is very comprehensive and highly complex in its architecture. The EDP that led to Croatia's RIS3 involved a series of regional and thematic stakeholder workshops as well as expert working groups. (Ministry of Regional Development and EU Funds, 2016: 89). The resulting priority areas are health and the quality of life (including pharmaceuticals and medical equipment, health services, and nutrition), energy and environmental sustainability (including energy technologies and environmentally friendly technologies or materials), transport/mobility (including vehicle manufacturing, environmentally friendly transport, and logistics), security (including cyber security, dual-use technologies, and a demining), and food and bio-economy (including food production/processing and wood) as well as key enabling technologies and information and communication technologies as cross-cutting priority subjects (Ministry of Regional Development and EU Funds, 2016).²

Interestingly, the Croatian RIS3 mentions in general terms that it “should be based on available resources and *attitudes*” (Ministry of Regional Development and EU Funds, 2016: 13, emphasis added), a hint to the relevance of institutional context. In more detail,

the strategy refers in several places to the need to establishing an innovation, investment, business, entrepreneurial, or university-industry collaboration culture (Ministry of Regional Development and EU Funds, 2016: 15, 82, 151, 169, 170, 181, 190). This sensitivity to “culture” which seems to mean the stable patterns of behavior that are defined in this article as institutions is consistent with the Croatian strategy’s SWOT analysis listing a “limited patenting and commercialisation culture” as well as further institution-related factors such as weak university-industry collaboration and a mismatch between research and economic demand as weaknesses (Ministry of Regional Development and EU Funds, 2016: 77-78). Specifically, for instance, university-industry collaboration suffers from a disconnect that could well be institutionally founded:

“Universities and R&D companies are rarely seen as sources of information for innovation: only 6.9% of firms in Croatia would turn to universities for innovation. The Croatian innovation system is still strongly oriented towards fundamental research in the public sector” (Ministry of Regional Development and EU Funds, 2016: 50).

Further, when it comes to university-industry technology transfer, the strategy claims “that activities related to technology or knowledge transfer are not recognized as important” (Ministry of Regional Development and EU Funds, 2016: 51). Interviewees confirmed weak university-industry cooperation is a problem, although one not unique to Croatia.

During the EDP, organizations such as the national innovation agency BICRO (now merged with the SME agency into the new organization HAMAG-BICRO) as well as cluster organizations were involved in strategy design, either by providing data or through interviews. Company representation was indirect through cluster organizations. To a considerable degree, evidence used in the process was collected by external experts. Importantly, the Croatian Chamber of Economy played a mediating role between

government and companies. The chamber's local offices contacted their member companies and convinced them to participate in EDP activities such as public consultation meetings. The chamber's efforts were arguably important to convince company managers that the RIS3 would be different from previous government strategies with limited impact because of the ESIF conditionality. It thus seems as if on an institutional level, the chamber's relational assets and the reputational effects of EU power (in the form of the *ex-ante* conditionality) helped in overcoming company representatives' reluctance in getting involved in participatory strategy design. Still, it seems as if the tight time frame of the EDP gave some agents a feeling of not being able to express their opinions sufficiently. Still, the danger of losing ESIF funding due to the *ex-ante* conditionality motivated companies to participate. Apparently the EDP was a challenging stage for agents, which is not surprising given that this comprehensive exercise of gathering evidence and aligning policy priorities was an approach new to Croatia's innovation policy.

Interviewees confirmed the lack of cooperation among agents in the innovation system and notably between companies and academia. Some behavioral changes can be seen after the EDP. For instance, private-sector companies seem to be more confident in their ability to voice their policy concerns, for instance by being more active in commenting policy decisions through social media. Parts of the academic landscape seem to have become more open towards university-industry collaboration. Within the government, new routines of cooperation between ministries and with agents outside the government have been anchored. More generally, the EDP has created a sense of stability because previously, Croatian innovation policy was unstable and subject to frequent changes. The EDP, the existence of the RIS3 and its status as fulfilling an ESIF

conditionality may have contributed to more stable expectations among companies towards the innovation policy landscape.

Conclusions from the case studies

Following the research questions presented at the beginning of this section, the major insights gained in the case studies can be summarized as follows:

1. Was the EDP used as an institutional discovery process and if so, how?

While explicit institutional analysis was not part of the EDPs of any region or country studied, analytical tools such as focus groups and interviews may have generated (at least tacit) knowledge on institutional knowledge, although this knowledge is not in any case clearly reflected in the RIS3 or specifically in their SWOT analyses.

While inter-regional benchmarking is perceived as a way to compare “hard” economic data (e.g. in South Tyrol), agents who left the region or country are not seen as sources of (institutional) knowledge. This is somewhat surprising notably for a country such as Croatia whose diaspora in countries such as Germany and Austria could provide a valuable comparative qualitative perspective on institutional constraints to path development.

Among the strategies analyzed, the one that comes closest to including at least an implicit institutional analysis is the Croatian one which often refers to the need for “cultural” change in the economy. However, the vague notion of “culture” is not explained in further detail, thus probably more obscuring than elucidating aspects of institutional context in need for institutional change.

As the case of Slovenia shows, stakeholder interviews arranged after screening the outcomes of the quantitative analysis may have contributed to coordinators’

understanding of the institutional context, as have their experiences throughout the EDP. In this way, for instance, companies' expectations and attitudes towards cooperation have become apparent. Thus, though there was no formal and explicit institutional analysis involved, the EDP did actually function as an institutional discovery process on some aspects of institutional context. The experience of South Tyrol's EDP confirms the importance of in-depth company interviews.

The case of South Tyrol is interesting because despite the lack of implicit institutional analysis during the EDP, a considerable stock of institutional knowledge was available because of a history of networking, cluster support, and participatory sectoral prioritization as well as due to the small size of the regional economy and the prevalence of social capital.

In the same vein, strategy design in Lower Austria benefitted from a long-standing legacy of public-private cooperation under previous strategies and notably in cluster, technopole, and similar networking schemes. Even without an explicit institutional analysis performed during the EDP, it is likely that a large amount of tacit institutional knowledge was available to policymakers during the EDP.

2. Were policies agreed or designed in a way consistent with existing institutions (institutional consistency)?

Probably due to the lack of explicit institutional analysis, the RIS3 analyzed do not explicitly address institutional consistency. However, this does not mean that RIS3 are not at least implicitly institutionally consistent. The tacit knowledge gained in focus group discussions or interviews can indeed ensure a considerable degree of institutional consistency of resulting RIS3.

For instance, in South Tyrol, the depth of implicit institutional knowledge available in the EDP may well have facilitated agreeing on the common vision embodied in the RIS3 which probably reinforced routines of cooperation even without radical institutional change. South Tyrol is thus probably a case for a RIS3 that is, beneath the surface, highly consistent with the regional economy's institutional context.

Similarly, the fact that Lower Austria's current RIS3 builds on previous strategies and long-standing networking schemes that have generated routines of cooperation between companies and economic development agencies has arguably contributed to the emergence of trust and social capital that the current RIS3, acting as an overarching strategic umbrella to pre-existing policies, builds on. The trust and context knowledge enjoyed by intermediary organizations such as the regional development agency with its cluster and technopole managers or the chamber of economy with its local offices apparently ensure institutional consistency, even when learning from good practices abroad. In a sense, these intermediary organizations act as translators into the institutional context of the region.³ Since company involvement in Lower Austrian strategy design and implementation is to a large degree indirect and builds on close relationships between economic development agencies with their client companies, Lower Austria's smart specialization approach follows a corporatist model that probably presupposes a high degree of institutional consistency.⁴

3. Do policies agreed on focus on achieving institutional change (downward causation)?

Probably owing to the lack of institutional analysis during EDPs, policies aiming at downward causation of institutional change are rarely found in the RIS3 analyzed.

However, Lower Austrian's RIS3 exhibits at least an implicit call for downward causation of institutional change through its call to strengthen entrepreneurial attitudes through education.

While not anchored in the RIS3, some approaches used by intermediary organizations in Lower Austria such as publishing success stories to increase peer pressure among competing companies can be seen as implicit policies of downward causation of institutional change and, through the corporatist coordination mechanism between the provincial government and intermediary organizations, are part of RIS3 implementation.

While the Croatian RIS3 addresses institutional aspects such as a weak "culture" of university-industry cooperation, the vagueness of the analysis in institutional terms means there is no clear link between institutional realities and policies. Explicit policy interventions aiming at downward causation of institutional change are therefore not observable.

4. Did the EDP lead to institutional change through new patterns of behavior by agents (upward causation)?

Several interviewees from different countries or regions mentioned that the EDP was more important than its formal outcome, the eventual RIS3. In a sense, the process is thus perceived as more important as the paper because the EDP led to behavioral change in agents' attitudes towards cooperation and to trust-building among each other and towards government.

The Slovenian experience offers an example of how the EDP can be made a permanent process through action planning and project implementation under the guidance of public-private “strategic partnerships”. It is possible that this approach might help anchoring a participatory and cooperative policymaking style and thus lead to new behavioral patterns and institutional change, addressing in part the weak state of cooperation between agents in the Slovenian innovation system stated in the SWOT analysis in the Slovenian RIS3. Whether behavioral change actually materializes, however, is an open question that can probably be answered a few years ahead.

The Croatian case is interesting because the brokering role of the chamber of economy in convincing companies to participate in the EDP (similar to the Lower Austrian case), the credibility lent to the EDP by the existence of the ESIF conditionality, and the experience of the EDP itself seem to have altered behavior on behalf of companies, thus bringing about some degree of upward causation. The willingness of companies to engage more confidently in participatory public-private policymaking is an example for this institutional change, although its durability and strength cannot be judged yet.

When comparing the four cases, it seems as if the EDPs organized in Lower Austria and South Tyrol were largely consistent with existing institutional realities in the regional economies and generally led to the definition of institution-reinforcing rules through the policies and actions anchored in the RIS3. For example, the fact that South Tyrol’s RIS3 explicitly codified a formerly tacit consensus about the pathway of regional development to be followed by public and private agents is a clear example for an institution-reinforcing rule. The other two cases, Slovenia and Croatia, can serve as examples for the

upward causation of institutional change through the EDP itself. In these cases, the *ex-ante* conditionality of drafting a RIS3 through an EDP under the framework of EU Cohesion Policy can be seen as an institution-circumventing rule because it motivated public and private agents to work together, thus breaking established routines of isolated policymaking by government and limited cooperation between private and public agents as well as between companies and academia. By implementing this institution-circumventing rule set by EU policy, agents changed their behavior during and after the EDP and thus embarked on a process of upward causation of institutional change.

Among the four case studies presented, the Croatian case is probably the one most fraught with challenges. The strong reliance on external expertise during the EDP, the definition of a large number of focus areas in the RIS3, overlaps among strategies and competences, and the lagging implementation process demonstrate that for a transformation country fairly new to the EU, implementing the smart specialization approach is not an easy task. Still and despite all of the difficulties encountered, the insights gained from the case study show that even in such a case, embarking on an EDP may bring some fruits in changing behavior and cooperation routines and, thus, institutional context. Yet, much will depend on maintaining the trust built, ensuring the credibility of the process, and learning from the problems encountered. These are challenges policymakers and practitioners will have to be aware of and care for while implementing the strategy.

Conclusions and policy implications

The RIS3 studied typically focus on “hard” data as evidence base for EDPs and strategy implementation, but there seems to be a lack of institutional analysis which limits EDPs’ important function as an institutional discovery process, as well as opportunities to include policies aiming at downward causation of institutional change in RIS3.

Since EDPs using qualitative exploration or analysis methods such as focus groups or interviews or evolutionarily building on long-standing cooperative schemes such as clusters are likely to generate considerable tacit institutional knowledge, translating this knowledge into action by addressing institutional context in RIS3 could arguably be a critical step in reinforcing the effectiveness of RIS3 and their implementation. Though the institution sensitivity of RIS3 analyzed in the case studies varies, none of them systematically makes tacit institutional knowledge gained in their EDPs explicit. An explicit institutional analysis or a more explicitly institutional orientation of conducting focus groups or interviews could fill this gap in future EDPs and preclude the danger that the opportunities EDPs offer for institution-sensitive policymaking be wasted.

As the Croatian and Slovenian experiences demonstrate, the necessity of the EDP and of the RIS3 to fulfil the ESIF *ex-ante* conditionality to prevent the loss of EU funding is an important lever in establishing new institutional routines, notably for convincing private-sector companies to participate in collaborative strategy design. The role of EU policies thus acting as institution-circumventing rules may be particularly relevant in economies with higher levels of distrust between the private sector and government such as Southern and Eastern European countries, but more research will be needed to test this hypothesis.

The role of intermediary agents such as technology parks or chambers of commerce acting as relational brokers, as was seen in Slovenia and Croatia, can be important in overcoming institutional legacies of weak public-private cooperation. Again, this role may be most relevant in Southern and Eastern European economies, but fulfilling it requires high degrees of effectiveness and reputation of these intermediary agents.

The case of South Tyrol suggests that in a small regional economy with a tradition of networking and collaboration, an EDP is likely to lead to an implicitly or explicitly institution-consistent RIS3. Of course, this insight is not surprising. It does, however, highlight that developing RIS3 for smaller spatial entities and notably on the regional (or even local) scale has its advantages in terms of institutional consistency.⁵ Further, the case of South Tyrol shows that successful cluster and networking policies provide good conditions for achieving an institution-sensitive RIS3 by building on implicit institutional knowledge even without formal institutional analysis during the EDP. In cases where previous cluster or networking schemes have failed, in contrast, we might not only expect a higher need for in-depth institutional analysis (including an analysis of the institutional reasons for those schemes' failure) but eventually a higher need for institutional change.

Consistent with the case of South, Tyrol, Lower Austria provides probably the most salient example of how to achieve institutional consistency and institutional change in a regional economy over time through collaborative cluster and science park programs and through the embeddedness (Granovetter, 1985) of intermediary organizations in the economy's institutional context. The Lower Austrian case can serve as a call upon regions to benefit from the social capital enjoyed by intermediary organizations with a strong local and regional presence. While the corporatist policymaking approach employed by Lower Austria is highly specific, the Lower Austrian case may imply that building social capital through intermediary organizations is a prerequisite for institution-sensitive participatory policymaking. The other cases point in the same direction, although to varying degrees.

However, regions or countries that do not enjoy the thick social capital built by strong intermediate organizations over a long time will probably have to leap-frog by using the EDP as a shortcut to building social capital. The Slovenian may provide an

indication that institutional leapfrogging could eventually work out. Given the problems in identifying context-specific specializations that have surfaced during the beginning of implementation of the smart specialization approach in the current programming period (Kroll, 2015: 2082-2083), it might seem worthwhile to redefine the objective of the role smart specialization strategies and their design and implementation play in current EU cohesion policy: It may be that the EDP – defined not as a one-off event but as a permanent process of strategy adjustment, monitoring, and learning – is beneficial for regional economies not because of its result (a RIS3 designed and implemented) but because of its procedural by-products. This argument is similar to the positive by-products of EDPs in anchoring new ways of public-private coordination in policymaking (Kroll, 2015: 2095). While Kroll (2015: 2095) hypothesized that these governance-related by-products may be more important than RIS3 implementation in the long run, an equivalent argument applies to the wider institutional context. Seen from a comprehensive institutional perspective, by-products of an EDP include a deeper understanding of an economy's institutional context by agents, higher institution sensitivity of regional policies through increased public-private coordination capabilities, and behavioral changes leading to institutional change through upward causation. This institutional insight confirms the transformative ambition of the smart specialization approach postulated by the European Commission and the related claim that “getting the process itself right is at least as important as the final outcome of the strategy process” (Kleibrink et al., 2017: vi). While much more research on the institutional role and outcomes of the EDP and smart specialization generally is needed, for now the arguments developed in this article suggest that the true value of smart specialization may lie in its potential to provide a process of institutional discovery and change.

I am grateful to Johannes Glückler, Alexander Degelsegger-Márquez and Ales Gnamus for valuable discussions or comments. Of course, all remaining errors and omissions are my own.

- 1 The article is based on a presentation held at the “2018 SMARTER Conference on Smart Specialisation and Territorial Development” organized by the European Commission (Joint Research Centre) and the Regional Science Association on 26th-28th September, 2018 in Seville.
- 2 The absence of tourism as a priority area is noteworthy, given the role of Croatia as a major Mediterranean tourist destination.
- 3 I am grateful to Johannes Glückler for bringing up the metaphor of “translation” between institutional contexts across regions.
- 4 How open such a close-knit corporatist model can be for radical institutional change is an open question. A plausible hypothesis is that such a model may run a risk of institutional lock-in (Grabher, 1993). However, in the case of Lower Austria that risk might be attenuated by the regional economy’s interrelatedness with the dynamic urban economy of Vienna. This question certainly merits further research.
- 5 Another argument for developing RIS3 on the regional level is that according to Kleibrink et al. (2017: vi), “regional administrations enjoy sometimes greater trust from stakeholders than national ones.”

References

- Asheim, B., Grillitsch, M., & Trippl, M. (2017). Smart specialization as an innovation-driven strategy for economic diversification: examples from Scandinavian regions. In Radošević, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 74-99). London: Elsevier.
- Austrian Conference on Spatial Planning (Ed.) (2016). *Policy framework for smart specialisation in Austria*. Vienna: Austrian Conference on Spatial Planning.
- Autonomous Province of Bolzano-Alto Adige (Ed.) (2014). *Smart Specialisation Strategy für die Autonome Provinz Bozen-Südtirol. (Smart specialization strategy for the Autonomous Province of Bolzano-Alto Adige)* Bolzano: Autonomous Province of Bolzano-Alto Adige.

- Bathelt, H., & Glückler, J. (2014). Institutional change in economic geography, *Progress in Human Geography*, 38, 340-363.
- Benner, M. (2014). From smart specialisation to smart experimentation: Building a new theoretical framework for regional policy of the European Union. *Zeitschrift für Wirtschaftsgeographie*, 58, 33-49.
- Benner, M. (2017a). From clusters to smart specialization: Tourism in institution-sensitive regional development policies. *Economies*, 5, 26.
- Benner, M. (2017b). Smart specialisation and cluster emergence: Building blocks for evolutionary regional policies. In Hassink, R., & Fornahl, D. (Eds.), *The Life Cycle of Clusters: A Policy Perspective* (pp. 151-172). Camberley: Edward Elgar.
- 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.
- European Commission (Ed.) (2018). *Supporting an innovation agenda for the Western Balkans*. Luxembourg: Publications Office of the European Union.
- Federal Chancellery, Federal Ministry of Finance, Federal Ministry for Education, Arts and Culture, Federal Ministry for Transport, Innovation and Technology, Federal Ministry of Economy, Family and Youth, & Federal Ministry of Science and Research (Eds.) (2011). *Realising potentials, increasing dynamics, creating the future: becoming an innovation leader: strategy for research, technology and innovation of the Austrian federal government*. Vienna: Federal Chancellery, Federal Ministry of Finance, Federal Ministry for Education, Arts and Culture, Federal Ministry for Transport, Innovation and Technology, Federal Ministry of Economy, Family and Youth, & Federal Ministry of Science and Research.

- Foray, D. (2017). The economic fundamentals of smart specialization strategies. In Radošević, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 38-52). London: Elsevier.
- Foray, D., David, P., & Hall, B. (2009): Smart specialization — the concept. *Knowledge Economists Policy Brief No. 9*. Retrieved from http://ec.europa.eu/invest-in-research/pdf/download_en/kfg_policy_brief_no9.pdf (accessed on 10 January 2017).
- Foray, D., Goddard, J., Goenaga Beldarrain, X., Landabaso, M., McCann, P., Morgan, K., ... Ortega-Argilés, R. (2012). *Guide to Research and Innovation Strategies for Smart Specialisation (RIS 3)*. Luxembourg: Publications Office of the European Union.
- Glückler, J., & Bathelt, H. (2017). Institutional context and innovation. In Bathelt, H., Cohendet, P., Henn, S., & Simon, L. (Eds.), *The Elgar Companion to Innovation and Knowledge Creation* (pp. 121-137). Cheltenham, Northampton: Elgar.
- Glückler, J., & Lenz, R. (2016). How institutions moderate the effectiveness of regional policy: A framework and research agenda. *Investigaciones Regionales – Journal of Regional Research*, 36, 255–77.
- Gonchar, K., Kuznetsov, Y., & Wade, I. (2017). Lessons for a policy maker from real-life self-discovery in economies with weak institutions. In Radošević, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 226-249). London: Elsevier.
- Government Office for Development and European Cohesion Policy (Ed.) (2015). *Slovenia's smart specialisation strategy: S4*. Ljubljana: Government Office for Development and European Cohesion Policy.

- Grabher, G. (1993). The weakness of strong ties: the lock-in of regional development in the Ruhr area. In Grabher, G. (Ed.), *The Embedded Firm: On the Socioeconomics of Industrial Networks* (255-277). London, New York: Routledge.
- Granovetter, M. (1985). Economic action and social structure: the problem of embeddedness. *American Journal of Sociology*, 91, 481 - 510.
- Hall, P. A., & Soskice, D. (2001). An introduction to varieties of capitalism. In Hall, P. A., Soskice, D. (Eds.), *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage* (pp. 1-68). Oxford, New York: Oxford University Press.
- Hausmann, R., & Rodrik, D. (2003). Economic development as self-discovery. *Journal of Development Economics*, 72, 603-633.
- Karo, E., Kattel, R., & Cepilovs, A. (2017). Can smart specialization and entrepreneurial discovery be organized by the government? Lessons from Central and Eastern Europe. In Radosevic, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 270-293). London: Elsevier.
- Kleibrink, A., Larédo, P., & Philipp, S. (2017). *Promoting innovation in transition countries: a trajectory for smart specialisation*. Luxembourg: 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*, 23, 2079-2098.
- Ministry of Regional Development and EU Funds (Ed.) (2016). *Croatian smart specialisation strategy 2016-2020*. Zagreb: Ministry of Regional Development and EU Funds.

- Office of the Provincial Government of Lower Austria (Ed.) (2014). *Economic strategy Lower Austria 2020*. Sankt Pölten: Office of the Provincial Government of Lower Austria, Department of Economics, Tourism, and Technology.
- Putnam, R. (1993). The prosperous community: social capital and public life. *American Prospect*, 4, 35-42.
- Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6, 65-78.
- Radosevic, S. (2017a). Assessing EU smart specialization policy in a comparative perspective. In Radosevic, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 2-37). London: Elsevier.
- Radosevic, S. (2017b). Advancing theory and practice of smart specialization: key messages. In Radosevic, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 346-356). London: Elsevier.
- Reid, A., & Maroulis, N. (2017). From strategy to implementation: the real challenge for smart specialization policy. In Radosevic, S., Curaj, A., Gheorgiu, R., Andreescu, R., & Wage, I. (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 294-319). London: Elsevier.
- Storper, M., & Walker, R. (1989). *The Capitalist Imperative: Territory, Technology, and Industrial Growth*. New York, Oxford: Basil Blackwell.

**Department of Geography and Regional Research
University of Vienna**

Contact person: Michaela Trippl
Universitätsstraße 7/5/A0528, 1010 Vienna, Austria
Tel.: +43-1-4277-48720
E-Mail: Michaela.trippel@univie.ac.at
<https://humangeo.univie.ac.at/>

**Department of Socioeconomics
Vienna University of Economics and Business**

Contact person: Jürgen Essletzbichler
Welthandelsplatz 1, 1020 Vienna, Austria
Tel.: +43-1-31336/4206
E-Mail: juergen.essletzbichler@wu.ac.at
<http://www.wu.ac.at/en/department-socioeconomics>

**Institute for Urban and Regional Research
Austrian Academy of Sciences**

Contact person: Robert Musil
Postgasse 7/4/2, 1010 Vienna, Austria
Tel.: +43-1-51581-3520
E-Mail: robert.musil@oeaw.ac.at
<https://www.oeaw.ac.at/en/isr/home/>

**Department of Working Life and Innovation
University of Agder**

Contact person: Arne Isaksen
Jon Lilletunsvei 3/A161, Grimstad, Norway
Tel.: +47-37-23-33-53
E-Mail: arne.isaksen@uia.no
<https://www.uia.no/en/about-uia/faculties/school-of-business-and-law/department-of-working-life-and-innovation>

**Department of Geography
Kiel University**

Contact person: Robert Hassink
Hermann-Rodewald-Str. 9, 24098 Kiel, Germany
Tel.: +49-431-880-2951
E-Mail: hassink@geographie.uni-kiel.de
<https://www.wigeo.uni-kiel.de/en/>