Introduction

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1 The question

This special issue of *International Journal of Knowledge-Based Development* is devoted to analyse a set of perspectives of smart specialisation for a knowledge-based development. Up to the present, the academic and political discussion about smart growth and smart specialisation has been largely elaborated and discussed at supra-national and national-level. Moreover, smart specialisation strategies have been applied often towards the same objects and using the same levers, measures and criteria on different territorial systems. However, there have been numerous case-examples at economic, industrial, territorial level that have clearly shown the existence of a variety of ways to decline smart growth and smart specialisation concept in practice. The variety of ways of performing smart growth and smart specialisation raises then the question of which are their 'right' or appropriate dimensions to be identified and managed, beyond the mainstream of contents and methods commonly elaborated and applied. The contributions to this issue deal with this question by investigating reasons, possibilities, dimensions, problems and solutions of smart specialisation.

2 What may 'smart specialisation' mean?

Over the last couple of years, the notion of *smart specialisation* has become central to economic development and growth policy-thinking, in particular in the European circles. The notion of *smart specialisation* has been highlighted by the European Commission as

a central pillar of the *Europe 2020 Strategy*. In fact, it has been recognised as the basis for European Structural and Investment Fund interventions in research and innovation as well as part of the Regional and Cohesion Policy's contribution to the European Union (EU) *Horizon 2020* agenda (European Commission, 2009, 2014).

The notion of smart specialisation is conceptually related to the works elaborated by Hausmann and Rodrik (2003), Aghion et al. (2009), Boschma and Frenken (2011), Frenken et al. (2007) and by the EU's 'Knowledge for Growth' expert group (European Commission, 2009). The smart specialisation literature concentrates on regionally different abilities to absorb, disseminate and exploit science, technologies, knowledge and creativity and to foster their innovative applications across the wider economy (McCann and Ortega-Argilés, 2011). According to these schemes, all regions, whether they are advanced or are catching-up, have a real chance to improve their competitive position so long as they find a way to exploit science, technologies, knowledge and creativity to promote innovation and enhance productivity according to the region's unique needs and economic strengths increase their own absorptive capacity, and remove inter-regional blockages to knowledge flows (Aghion et al., 2009; Asheim et al., 2011; Benneworth and Dassen, 2011).

The smart specialisation argument emerged originally out of the literature examining the transatlantic productivity gap. The concept was first sketched out by Dominique Foray and Bart van Ark (van Ark et al., 2008), and subsequently developed along with their co-authors Paul David and Bronwyn Hall. The focus was initially on the role played by transatlantic differences in R&D intensity in explaining growth differentials, analysing the labour market performance including differences the quality of human capital (Gu et al., 2002), the rigidity of the European labour markets (Gordon and Dew-Becker, 2005; Gomez-Salvador et al., 2006), the differences in the adoption of new managerial practices and organisational investments (Gu and Wang, 2004; Bloom et al., 2005; Crespi et al., 2007), or the differences in the availability of venture capital.

At the beginning, the smart specialisation concept reflected the implicit assumptions that different countries and regions would tend to specialise in different knowledge-related sectors, depending on their capabilities (von Tunzelmann, 2009). At this point, the emerging patterns of specialisation in knowledge-related activities were understood to depend primarily on the existing national, sectoral and technological innovation systems, and the interplay between soft and hard capital, as it is these which determine the long-term competitive advantages. As such, in terms of the Lisbon growth agenda, smart specialisation was conceived of as a way to reconcile unrestricted agglomeration processes with a relatively balanced distribution of research capacities and capabilities across Europe.

Along the time, the focus of this literature has shifted somewhat also towards the attempt to consider and integrated wider issues about economic growth and development. Accordingly, smart specialisations strategies have been identified as a systemic approach to achieve the aims of the smart growth and have been commonly declined with specific attention on the smart economy, smart mobility, smart environment, smart living, smart people, and smart governance (European Commission, 2009, 2014; Foray et al., 2011; McCann and Ortega-Argilés, 2011).

More recently, great importance has been increasingly paid to the relationships with the so-called *knowledge-based development* agenda. Knowledge-based development is commonly recognised as a regional development paradigm stressing the importance of knowledge as the key value driver of regional success and development (Knight, 1995).

To compete effectively, territorial systems need knowledge and technological infrastructures, good public governance, a concentration of well-educated people and connections to global economy. The economy of a smart system creates high value-added products and services using research, technology and brainpower and it is supported by effective policy actions (McCann and Ortega-Argilés, 2011). In a smart territorial system, private and public sectors value knowledge, spend money on supporting its discovery and dissemination and, ultimately, harness it to create market-pull goods and services. However, engineering and orchestrating smart specialisation paths is not an easy task to undertake, since they require a completely new understanding and perspective in physical, political, economic and social issues. Smart specialisation principally is about providing this new perspective through the management of value dynamics, territorial governance, development and planning and the processes of knowledge production and dissemination. In short, smart specialisation is about generating unique assets and capabilities based on the region's distinctive industry structures and knowledge bases. More generally, it involves a process of developing a vision, identifying competitive advantage, setting strategic priorities and making use of policies to maximise the knowledge-based development potential of any local system, strong or weak, high-tech or low-tech (Carrillo, 2010; Ergazakis and Metaxiotis, 2011; Ergazakis et al., 2006; Yigitcanlar et al., 2010). This type of specialisation allows regions to take advantage of scale, scope and spillovers in knowledge production and use, which are important drivers of productivity (Foray et al., 2011).

3 The rationale

There are several reasons to state that identifying and managing smart specialisation dimensions may have advantages at scientific at political level:

- First, smart specialisation is not only concentrating knowledge resources and linking them to a limited number of priority economic activities, but embraces a broader concept of innovation, not only investment in research or in the manufacturing sector, but also building competitiveness through design and creative industries, social and service innovation, new business models and practice-based innovation, urban regeneration and so on. In this sense, territorial systems can sustain multiple lines of smart specialisations aimed to guarantee knowledge-based development paths. Among them, the creation of variety, such as the transition to new activities or the diversification of existing sectors, strategies aimed at fostering cross-sectoral or cross-border innovation dynamics and cooperation, the creation and the development of technological districts (TDs) are recently emerged in the academic and policy circles as key-levers to operatively translate smart specialisations strategies into practical actions at political, economic, and business level. These examples illustrate that smart specialisation has many facets and can mean several different things. It entails a large spectrum of topics of which academic research has tackled only a fraction in some details, while large areas have been left unexplored.
- Second, there is still a need to better analyse and assess the impact of the innovation policies supporting smart specialisation strategies. Previous regional innovation

policies have often suffered from one or more of the following weaknesses: lack in international and trans-regional perspective, i.e. the regional innovation and economic system is often considered in isolation; missing alignment with the industrial and economic fabric of the region; there is too much public involvement in R&D which is not sufficiently business driven; lack of analysis about the region's core-assets; 'copying syndrome', i.e., the best performing regions are copied without consideration of the local context. As a result, regional innovation policies have often demonstrated a lack of efficiency in identifying priorities and forms of practical cooperation between regions. This issue is even more critical in the current economic crisis where public and private financial resources are scarce. For this reason, the research about the smart specialisation has to address better analysis to promote efficient, effective and synergetic use of public investments and support Countries and regions in strengthening their innovation capacity, while focusing scarce human and financial resources in a few globally competitive areas in order to boost economic growth and prosperity.

- Third, although the smart specialisation concept can be used in all regions, every application of the concept in a regional context has to be approached with care because the economic and institutional context varies considerably between and within regions and territorial systems in general. This means that a smart specialisation strategy needs to take into account several geographic, institutional and business specific characteristics to help generate growth in regions. For this reason, 'best practice' that applies a model of smart specialisation to all regions may not exist so that different actions and tools are needed for achieving a given goal. Hence, a one-size-fits-all approach to smart specialisation that treats all the territorial system in a similar way is not appropriate and probably not efficient.
- Fourth, in terms of the empirical aspects of the smart specialisation strategy, the approach is still so new that very little research has actually been undertaken regarding the relationships between the policy objectives and policy instruments. In a policy context, the major challenges here is therefore the linking inputs, to outputs and then most importantly, to outcomes. As yet there are no clear outcome indicators for the smart specialisation approach, and remedying this is an urgent issue if the policy is to be successful.

4 Overview of the papers gathered in the special issue

The contributions to this special issue deal with different aspects, which are important in the discussion of identifying and managing the different perspectives of smart specialisation supporting a knowledge-based development.

Main topics are the smart reconfiguration of some industries (Micera, Splendiani, Presenza, and Del Chiappa), the importance of the technological specialisations and the innovative entrepreneurship (Lerro and Jacobone; and Romano, Passiante, Del Vecchio, and Secundo), urban planning and the role played by culture and creativity into the regeneration and transformation of the urban spaces as dimensions of smart specialisation strategies (Battaglia; Gridneva and Noennig; and Yigitcanlar).

The contribution of Antonio Lerro and Francesca A. Jacobone deals with the role and the relevance of the TDs as lever of smart growth and smart specialisation strategies. The research hypothesises that some filters exist between TDs' existence and their relative performance, investments in new knowledge, its use, commercialisation and finally smart growth, so that, in contrast to the models of endogenous growth, knowledge does not automatically spill over and result in increased competitiveness. Accordingly, the moderating effects of some business, geographical and institutional factors are identified and analysed.

The contribution of Angelo Battaglia aims at highlighting the development of a creative cluster embedded in an emerging cultural neighbourhood in Rome. The paper analyses, on one side, how the east quarter of Rome called 'Pietralata' is trying to establish new values in terms of socio-economic, creative and territorial development as new cultural centre located in former industrial areas and, on the other side, it demonstrates how the cultural regeneration as well as the urban planning may be two fundamental dimensions of smart specialisation strategies.

The importance of the planning issues is also a central argument in the contribution by Tan Yigitcanlar. His research proposes an innovative policy-making and planning approach to deliver the knowledge-based agenda. The paper, first, examines the concept of knowledge-based urban development, which has become a popular urban development policy and strategy in recent years, through a comprehensive review of the literature. The paper, then, introduces and discusses a novel methodological approach for effective policy-making and planning mechanism to deliver the knowledge-based agenda of cities.

The contribution of Aldo Romano, Giuseppina Passiante, Pasquale Del Vecchio and Giustina Secundo deals with the innovation ecosystem as booster for the innovative entrepreneurship in the smart specialisation strategy. In coherence with the European Agenda for the smart specialisation, the 'innovative entrepreneurship' is presented as driver for the achievement of the regional intelligent growth and their successful positioning of countries in the geography of the innovation. Focusing on the innovation and the entrepreneurship as core processes the knowledge-based regional development, the study offers interesting implications for the agenda of scientists and policy makers in the frame of the European strategy for the smart specialisation.

Liudmila Gridneva and Jörg Rainer Noennig in their contribution present a theoretical framework for the post-industrial creative city as a knowledge ecosystem. A new model is presented which categorises the constitutive components of knowledge environments according to parameters of spatial, organisational, and economic value. Presented in the format of a three-dimensional matrix, the model allows a holistic representation of urban knowledge ecosystems and their creative environments.

Finally, Angelo Presenza, Roberto Micera, Simone Splendiani and Giacomo Del Chiappa in their contribution analyse relevant issues about the stakeholder e-involvement and participatory tourism planning, presenting an Italian case-study. Specifically, the paper explores the potential and challenges of knowledge management – in particular, the use of information and communication technologies – in supporting stakeholders' collaboration processes in the tourism destination by focusing on e-democracy. According to a smart specialisation orientation, e-democracy is identified as relevant process aimed at obtaining stakeholders active participation in the decision-making process about territorial policies and tourism planning.

5 Conclusions

Despite the academic and policy interest, in the last years, on the importance of identifying and effectively managing smart specialisation dimensions as key-value drivers for a knowledge-based development, the policy orientation and the related managerial actions have shown some limitations.

They are related both in considering the relevance of the projects and time management, the existence of the potential mediating factors of the hypothesised dynamics as well as the ways of how to define correctly and implement effectively a smart specialisation strategy, assessing its impacts.

It is important to recognise that local development processes and dynamics are tremendously idiosyncratic (Lerro and Schiuma, 2011). In addition, the impact of smart specialisation dimensions on knowledge-based development patterns is extremely difficult, if not impossible, to evaluate using only the economic return as a measurement unit. It is acknowledged that technologies, knowledge assets, science-related factors, innovative entrepreneurship, supply chains' restructuring, urban planning, social innovation do have a relevant impact on territorial growth, but this is fundamentally the indirect result of the effect of these levers acting as a bundle rather than stand-alone.

The topics explored by the papers to this special issue reflect the emerging discussion. However, given the complexity of the debate, several issues remain unexplored and deserve further research and practical investigation. In particular, authors call for further research to investigate the interdependence among the various dimensions. Indeed, even if each dimension plays a strategic role in a successful local knowledge-based development strategy, all the factors have to be considered inextricably combined and leveraged together in order to drive an effective development strategy. This corresponds to further understand how to identify and quantitatively test how the different factors affect, selectively and dynamically, local knowledge-based development dynamics. Furthermore, authors call also for studies to support national and regional decision-makers to identify, understand and assess their resources and assets ownership grounding smart specialisation strategies and then knowledge-based development. Finally, further empirical investigation is necessary to better understand the difference of the relevance of the smart specialisation dimensions within specific territorial systems. Thin in order to analyse differences and analogies of different possible development paths as well as to refine the policy tools

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