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Does regional VRIO model help policy-makers to assess the resources of a region? A stakeholder perception approach

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ABSTRACT

This study aims at assessing stakeholder perceptions regarding the suitability of smart/intelligent specialisation strategies defined for their framework regions. We adopted a quantitative methodology through questionnaire surveys of the different stakeholders in Portuguese regions in keeping with the VRIO model applied to the regions. The study results emphasise that stakeholder perceptions of the appropriateness of the smart specialisation strategies defined for their framework regions does not coincide with the intelligent specialisation strategies defined by their policy makers. This study attempts to contribute to an innovative framework which helps policy-makers assessing and measuring the regional performance. The study furthermore proposes measures to bridge the gaps found in the regional smart specialisation strategies.

1. Introduction

Smart specialisation has begun to play an increasingly fulcral role in the reforms of the European Union (EU) Cohesion Policy and has served to break the regional investment paradigms that the EU had held in the past. Given the gravity of the financial crisis that first took effect in 2008, the EU accelerated debates around smart specialisation and its eight constituent concepts and key stages: (1) knowledge about the economic and innovation ecosystem; (2) business discovery (involving the private sector); (3) specialisation in specific technological sectors; (4) an interlinking strategy for diversification so as to guarantee a sustainable economic environment; (5) openness to other European regions; (6) definition of an action and budget plan; (7) establishing the coordination of the ecosystem for sustainable innovation; and (8) implementing a monitoring and evaluation system (Peltier, 2015). Thus, in 2009, the EU founded a consultative body to study smart specialisation, which produced its first conclusions in 2011 before presenting its official report in 2012 (*Guide to research and innovation strategies for smart specialisation (RIS3)*).

The Research and Innovation Strategies for Smart Specialisation (RIS3) requires a diagnosis process of territorial level innovation. It is thus important for regions to analyse the diverse indicators so as to be able to aid in regional economic development and innovation. The characteristics and traditions of the regions also need taking into consideration in the definition of the domains for smart specialisation (Camagni et al., 2013). Therefore, developing an RIS3 strategy requires approaching as an activity structured by its process (Muller et al., 2017; Woronowicz et al., 2017).

The focus of most literature on measuring the international competitiveness of firms in a country or region (eg, Buckley et al., 1990; Coviello et al., 1998; Doyle and Wong, 1998; Özçelik and Taymaz, 2004; Tiits et al., 2015, Traill and Da Silva, 1996), which ignores the specific features and resources of regions, represents an identifiable gap. To what extent is the network structure of companies influenced by the regional environment in which they are located? In order to bridge these inefficiencies, regions and their policy-makers have to increase their competitiveness, based on the characteristics and resources of regions, with innovation advanced by adapting a business model to the regions. To that end, we deployed the resource-based view (RBV) approach as the main framework for the identification of competitive strategies and public policies implemented in countries/regions (Mudambi and Puck, 2016).

Thus, the goal of this research is to adapt the model "Value, Rarity, Imitability and implemented in the Organization" (VRIO) to regions from the perception that stakeholders have of RIS3 in the Portuguese regions. This model was originally designed for the context of

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organizations. The theoretical approach followed in this research proposes an alternative view, according to which strategies must be formulated from the internal resources and capabilities (of each region). Other works have also adapted organizational indicators to regions and territories (Ioppolo et al., 2012).

The study structure is as follows. After this introductory section, Section 2 is reviewed with regard to the RIS3 intelligent specialisation, the RBV approach and the VRIO model. Section 3 describes the methodology applied, explaining the data collection process, the units of analysis and how we adapted the VRIO model to these regions. Section 4 presents the results and their discussion before finally presenting the conclusions, study limitations and future research lines.

2. Literature review

2.1. Smart specialisation and RIS3

The European Commission developed smart specialisation through appointing a group of academics to provide policymakers with a rationale for innovation policies. Smart specialisation includes innovation policies tailored to each region in particular. These policies derive from the capabilities and potentials of the different regions (Foray et al., 2009). Smart specialisation focuses on the idea that regions should focus their investment in knowledge on previously defined areas of expertise. The regional government thus has a key role to play in the strategy of smart specialisation and should therefore carry out a rigorous self-assessment of the knowledge assets, skills and competences of each region, and the main players, among them the knowledge transfers ongoing (Benner, 2014).

RIS3 is the most recent version of the proposed EU Cohesion Policy reform for the period 2014–2020 (Kotnik and Petrin, 2017). The Strategy for Europe 2020 defines and measures the concept of smart growth, according to the established conceptual frameworks, i.e. about the role of technological evolution, human capital, and knowledge for economic growth and regional convergence (Jaffe, 1989; Rauch, 1993). Although RIS3 is a strategy designed and implemented initially for the EU, other countries have already applied it, Mexico for example (Solleiro and Castañón, 2016).

RIS3 intends to identify knowledge in selective “domains”, as well as priorities, in areas where the region (or a Member State) has a relative advantage (Foray, 2014); which may give rise to a competitive advantage. Some authors (Camagni and Capello, 2013; Muller et al., 2017) indicate that RIS3 consists of investing in knowledge and human capital, industrial and technological capital, and in territorial competences. Thus, RIS3 highlights the role of knowledge, technology and innovation for economic development and social well-being (Radosevic and Stancova, 2018; Tiits et al., 2015).

Question 1: Are the RIS3 domains selected creators of sustainable competitive advantage for regions?

Question 2: Are there significant differences in stakeholder perceptions about RIS3 domains, between insular regions and continental regions?

The implementation of RIS3 therefore expects most developed economy R&D systems are able to invest in the creation of new intensive activities with a strong science component. On the other hand, less developed economies should orient their R&D to areas where they already have an industry in place (Foray et al., 2009). In the literature, there are already theoretical models proposed to foster less developed economies (eg. Lopes and Franco, 2017; Virkkala et al., 2017; Peris-Ortiz et al., 2016; Lopes and Farinha, 2017), although many of these models still need testing in practice.

2.2. Performance monitoring systems as applied to regions

Nowadays, regional policy increasingly perceives business networks and cooperation as key to success in this field (Semlinger, 2008). Correspondingly, R&D cooperation networks, when appropriately applied to real contexts, serve to create and develop technological projects that impact positively on competitiveness (Farinha and Ferreira, 2016).

Some performance monitoring system are already in effect. However, these systems, in the majority, make recourse to the balanced scorecard (BSC) method. The literature conveys certain different examples of such performance monitoring systems (collaborative BSC, territorial BSC and the regional helix scoreboard).

Al-Ashaab et al. (2011) proposed collaborative BSC as a tool for measuring, sampling and improving the impact of collaborative projects between industry and university. This model enables companies to carry out the evaluation of their open innovation models.

In turn, territorial BSC represents a strategic tool developed for the regional public sector for the measurement of the competitive potential of a territorial system through means of a classification. The territorial BSC enables the interpretation of the characteristics of the territory’s supply through applying an ad-hoc approach and planning the increases necessary to the functions engaged in by the regional public sector and the competences thereby associated. The territorial BSC returns profit oriented indicators so as to highlight the strategic and economic benefits associated with the heritage assets interlinking with competitiveness. This strategic tool also enables the restructuring of local economic systems (Ioppolo et al., 2012).

The regional helix scoreboard arose out of the objective of measuring the dynamic interactions ongoing in the triple/quadruple helix. The regional helix scoreboard adopts the innovation and entrepreneurship related initiatives as the pillars of regional competitiveness (Farinha and Ferreira, 2016).

As we verified above, despite the models existing for measuring regional performance, there is no model taking into account the resources and capacities of each region. Hence, adapting the Resource-Based View (RBV) and the “Value, Rarity, Imitability and implemented in the Organization” (VRIO) model to regions might serve to overcome this gap.

2.3. The resource-based view and VRIO framework

Resource-Based View (RBV) theory emerged out of the objective of developing tools to study the positioning of companies associated with their resources and capabilities. Resources and capabilities are essential aspects of strategic development playing a perceivable role in the relationship between resources, capabilities, competitive advantages and performance (Grant, 1991; Wernerfelt, 1984).

RBV explains the competitive disadvantages of companies, their competitive parities, temporary competitive advantages and sustained competitive advantages (Barney, 2014). Thus, a company creates economic value when revenues created by the use of its resources and capabilities are greater than the cost of acquiring or developing those resources and capabilities and the cost of their application. Organizations that fail to create value with their resources and capabilities rank as having a competitive disadvantage. An organization creates competitive advantage when it generates more economic value than at least some of its competitors (Peteraf and Barney, 2003). This competitive advantage may be either temporary or sustained.

Temporary competitive advantages exist when organizations without the necessary resources can obtain or develop them without disadvantages in relation to companies that already have them. Correspondingly, sustained competitive advantages reflect the situation when competing companies, to acquire the necessary resources, have to incur higher costs. Sustained competitive advantages are not infinite because, for example, changes in technology or consumer preferences can not only reduce the value of those capabilities but also disseminate and spread the capacity to acquire them (Barney and Mackey, 2016).

According to RBV, the theoretical and practical importance of identifying the value of an organization's resources and capabilities obliges managers to accurately identify the value of each of their resources and capabilities. A resource being valuable to an organization