

Community-led Networks for Territorial Innovation (CeNTER)

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WP4: Measuring the impact of territorial innovation

- Explore the adequacy of current theoretical approaches for **measurement territorial innovation performance** regarding the Portuguese reality;
- Contribute to a **better understanding of the relative impact of the different dimensions related to economic, technological, and social/human development in territorial innovation**;
- **Development of measurement tools for territorial innovation** that will enable the understanding of the main differences in terms innovation within a geographical context at the NUT II and III levels;
- Contribute to raise awareness and visibility of the distinctive characteristics and outputs of territorial innovation.

WP4: Main tasks

- Propose measurement tools for Territorial Innovation
 - i) Provide a state-of-the art regarding the main indicators related economic, technological, and social/human development dimensions;
 - ii) Develop and test scales to measure specific effects at territorial micro-level (Happiness, Work ability/capacity, Mental and physical resources, Emotional stability, Relationships and Social Networks, Potential personal growth and achievement);
 - iii) Propose a framework to assess territorial innovation at NUT III level considering the different dimensions.

- Identify in-depth territorial innovation practices and its alignment with measurement dimensions
 - i) Collect data regarding the different dimensions considering the territorial innovation models suggested in WP2;
 - ii) Implementation of human capital measurement tool;
 - iii) Calculation of the Territorial Innovation Index of several NUT III regions.

- Implementation of an Observatory for Human Capital and regional

WP4: Main tasks

(i) Analysis of territorial innovation efficiency:

- Bibliometric review of the territorial innovation performance literature;
- Proposal of an innovative method for measuring multi-level and multi-stage efficiency through Data Envelopment Analysis;
- Creation of a database with macroeconomic indicators to measure the efficiency of territorial innovation;
- Achievement of innovation efficiency scores at municipal level, NUTS III, NUTS II and Portugal.
- Preparation and submission of six articles.

(ii) Validation study of indicators associated with innovation and well-being (human capital):

- Development of a research plan for the collection of data from companies in the Central Portugal region: collection of data at the organizational and individual level;
- Choice of the evaluation scales of the constructs to use organizational and individual level): authorization requests, translation processes, retroversion and adaptation;
- Construction of two questionnaires;
- Contacts and preliminary testing of data collection instruments;

WP4: Main tasks

(iii) Analysis of information on innovation territorial indicators:

- Survey of available indicators of territorial / organizational innovation;
- Request for micro-data from Community Innovation Surveys (CIS);
- Analyzes of CIS data for the periods 2008-2010, 2010-2012 and 2012-2014;
- Analysis of the most relevant public policies within the ambit of the characterization emanating from the execution of the previous item;
- Preparation of articles that compiles the results obtained.

(iv) Case studies

- Development of data collection instruments;
- Organization of a workshop with Community-led Networks and projects;
- Development of in-depth interviews with local actors.

WP4: Researchers involved

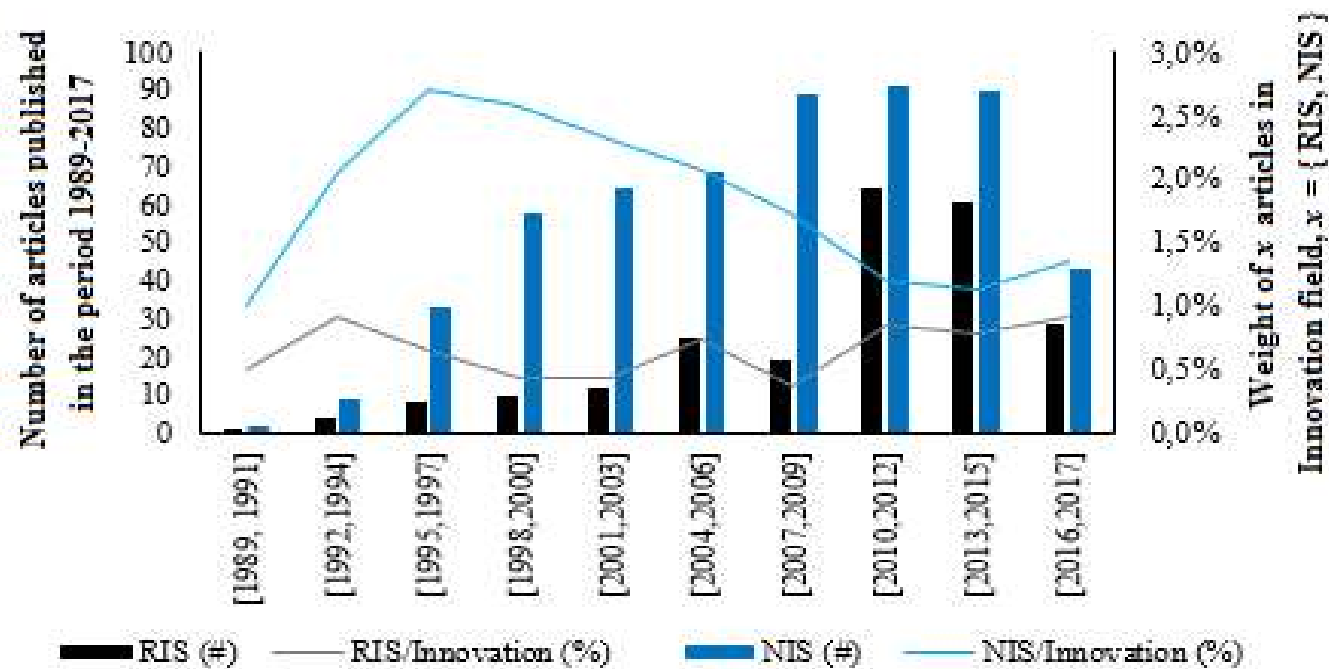
All Researchers, but more directly involved:



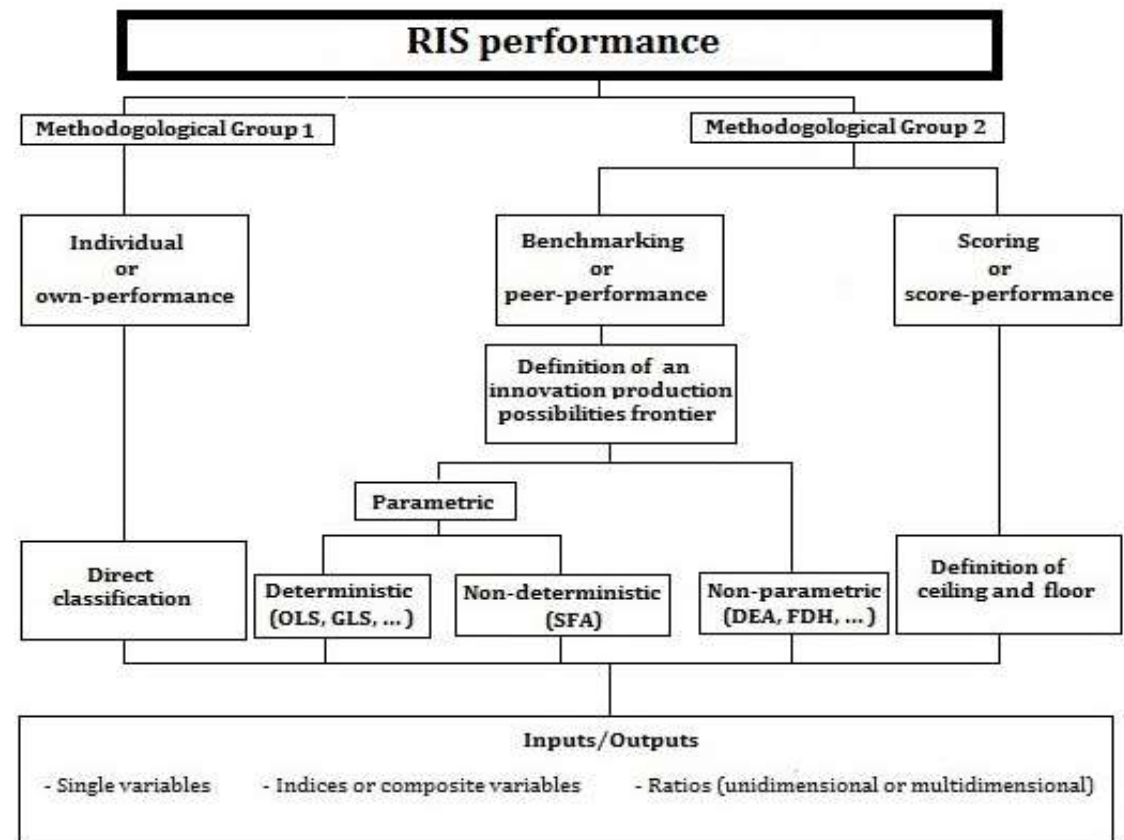
Performance of regional innovation systems: what we know so far

- Systematic review on the literature of RIS performance (1989 to 2017)
- **(I) has studies in the field of RIS performance fostered a strong or weak collaboration network between researchers?**
 - Characterise the RIS performance literature in terms of temporal evolution, main outlets and most cited authors;
 - Analyse the profile of the researchers who have contributed for the development of RIS performance literature to find evidence in favour or against the internal paradox at the individual level.
- **(II) which type of analytical approaches and methods are used in empirical analysis applied to RIS performance? (III) Are the most frequent indicators used in empirical studies focused on RIS performance aligned with the theoretical arguments disseminated by the RIS literature?**
 - Classify the RIS performance literature by type (theoretical or empirical) and theme (policy-oriented, technology transfer, regional issues, historical accounts, meta-literature, or formal);
 - Identify analytical approaches and methods in empirical studies focused on RIS performance;
 - Survey of the most commonly used indicators to measure RIS performance;

- Articles published in the RIS, NIS and innovation research fields, by every three years, 1989-2017



- Conceptual framework contemplating the classification of the analytical approaches and respective methods used in empirical analysis applied to RIS performance



- **Regional innovation indicators: input dimensions**

Human capital (comprises indicators of education levels and the availability of high-skilled workforce);

Institutional (comprises indicators associated with the conditions of a RIS, namely, level of protection, incentives for innovation and adequate governance: norms, laws and policies);

Infrastructure (holds indicators representative of the infrastructure that supports innovation, such as the availability of information and communication technology, paved road coverage, educational and research institutes);

Funding and knowledge creation (gathers indicators related to the availability of credit and other funding sources for innovation activities and comprises indicators that reflect the amount or number of R&D activities, as well as public or private expenditure on R&D);

Investment (indicators that belong to this dimension are considered outputs of the Innovation dimension; see Table C4 in Appendix);

Economic (indicators representative of the economic conditions of the region such as GDP, GDP per capita or employment level);

- **Regional innovation indicators: input dimensions**

Entrepreneurship and networking (comprises indicators that reveal the characteristics of the region in relation to the collaboration between the different actors of the system and development of entrepreneurship);

Quality of life (contains indicators that describe the characteristics of a region in relation to environmental sanitation, residents' quality of life, culture and social participation, water usage, energy consumption, percentage of the GDP allocated to culture and participation in voluntary activities);

Industrial (includes indicators that describe the state of development of the set of industries that compose the region, including industry lifecycle).

- **Regional innovation indicators: outputs dimensions**

Innovation outputs (comprise indicators that reflect the knowledge generated by innovation activities in products and services, organisational processes, number of patents requested and granted, number of scientific publications, among others);

Economic outputs (incorporates indicators that capture the economic success of innovation such as percentage of sales related to innovative products or exportation of innovative services, among others);

Social outputs (comprise indicators of environmental concern, social and corporate responsibility as well as representative indicators of improved consumption patterns).

- **Conclusions:**

- Review of the scientific production of RIS performance literature from 1989 to 2017;
- High level of receptivity by international journals;
- Leading contributors seem to be open to collaborative research with peers and less experienced researchers;
- Empirical analysis is gaining preponderance in relation to the theoretical analysis;
- Empirical studies were subject to a deeper classification based on three distinct analytical approaches – case studies, benchmarking and scoring;
- Main methods and indicators to measure RIS performance were identified.

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