INNOGROW Project

A4.1 Benchmarking regions' performance on supporting innovation for rural economy SMEs

February 2018

1. Aim and Indicator Definitions

Activity A4.1 aims to create an innovative online benchmarking tool to support INNOGROW regions in assessing their performance on improving rural economy SMEs competitiveness. The benchmarking tool will help policy makers and stakeholders to identify the most suitable practices to improve rural SMEs competitiveness. To create the tool, we have to identify suitable indicators and define areas to benchmark, to evaluate the existing policy approaches of regions. The key indicators for benchmarking are defined using two main data resources: the entrepreneurial performance measures of the Eurostat-OECD entrepreneurship programme (EIP) and the global competitiveness index from the World Economic Forum (WEF).

The EIP collects comparable statistics to enable the measurement of entrepreneurship and to develop a list of indicators and standard definitions on entrepreneurship and competitiveness. The 11 key indicators are selected from the EIP such as birth rates, net growth, productivity, innovation performance, and so on. The indicators are measured in terms of percentages, the number of employees, and shares. All of the indicators and their definitions are presented in Table 1.

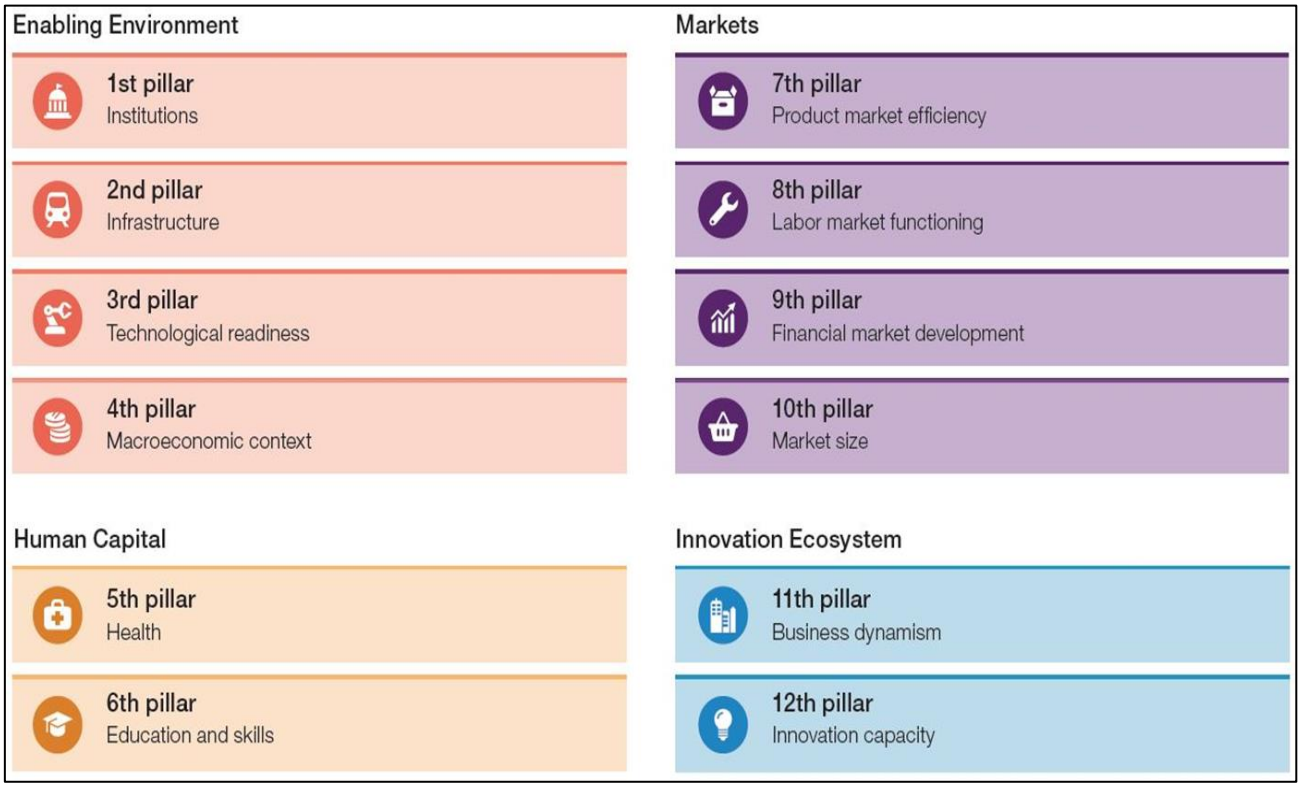
Table 1 The Indicators of Entrepreneurial Performance from EIP

Indicator	Definitions	Measurement
1	Birth rate	Number of enterprise births in the reference period (t) divided by the number of enterprises active in t (%)
2	Death rate	Number of enterprise deaths in the reference period (t) divided by the number of enterprises active in t (%)
3	Business churn	Birth rate + Death rate (%)
4	Net growth	Net business population growth (%)
5	Survival rate of 3 year-old enterprises	Number of enterprises in the reference period (t) newly born in t-3 having survived to period t divided by the number of enterprise births in t-3 (%)
6	High growth enterprise rate employment	Share of high growth (growth by 10% or more) enterprises measured in employment: number of enterprises that have increased their employees by 10% or more divided by the number of active enterprises with at least 10 employees (%)
7	Gazelle rates by employment	Share of young high growth (growth by 10% or more) enterprises measured in employment: number of young enterprises that have increased their employees by 10% or more divided by the population of active enterprises with at least 10 employees (%)
8	Average size of 5 year-old enterprise	Number of person employed in the reference period (t) among enterprises newly born in t-5 having survived to t divided by t-5 having survived to t (Number)
9	Productivity contribution by size	Apparent labour productivity (Gross value added per person employed) (Thousand Euro)
10	Innovation performance by size	Total number of innovative enterprises in the population in 2014 using the classification of innovation core activities (Com.Reg 995/2012)(Number)
11	Export by size	Value of total exports (Thousand Euro)

Source: Eurostat (2017).

Also we use the data from the Global Competitiveness Index calculated by the WEF. The WEF define competitiveness into 12 pillars such as a set of institutions, infrastructure, heath, labour market etc. (Figure 1). Given the focus of INNOGROW activities, we concentrate on selected key indicators from two pillars: Business dynamism (11th pillar) and Innovation capacity (12th pillar). The 16 important indicators are chosen such as capacity of innovation, company spending on R&D, and local supplier quality. Most of the indicators are measured on a scale from 1=lowest (bad) to 7=highest (good). All selected indicators are explained in Table 2.

Figure 1 Global Competitiveness Index Framework



Source: World Economic Forum (2018)

Table 2 The Indicators of Global Competitiveness Index

Area	Indicator	Definitions	Measurement
Business dynamism	1	Local supplier quality	In your country, how do you assess the quality of local suppliers? [1 = extremely poor quality; 7 = extremely high quality]
	2	Local supplier quantity	In your country, how numerous are local suppliers? [1 = largely nonexistent; 7 = extremely numerous]
	3	State of cluster development	In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? [1 = nonexistent; 7 = widespread in many fields]
	4	Nature of competitive advantage	On what is the competitive advantage of your country's companies in international markets based? [1 = primarily low-cost labour or natural resources; 7 = primarily unique products and processes]
	5	Value chain breadth	In your country, how broad is companies' presence in the value chain? [1 = narrow, primarily involved in individual steps of the value chain (e.g., resource extraction or production); 7 = broad, present across the entire value chain (e.g., including production, marketing, distribution, design, etc.)]
	6	Control of international distribution	In your country, to what extent do domestic companies control the international distribution of their products? [1 = not at all; 7 = to a great extent]
	7	Production process sophistication	In your country, how sophisticated are production processes? [1 = not at all—production uses labour-intensive processes;7 = highly—production uses latest technologies]
	8	Extent of marketing	In your country, how successful are companies in using marketing to differentiate their products and services? [1 = not successful at all; 7 = extremely successful]
	9	Willingness to delegate authority	In your country, to what extent does senior management delegate authority to subordinates? [1 = not at all; 7 = to a great extent]

Source: Would Economic Forum (2018).

Table 2 The Indicators of Global Competitiveness Index (continued)

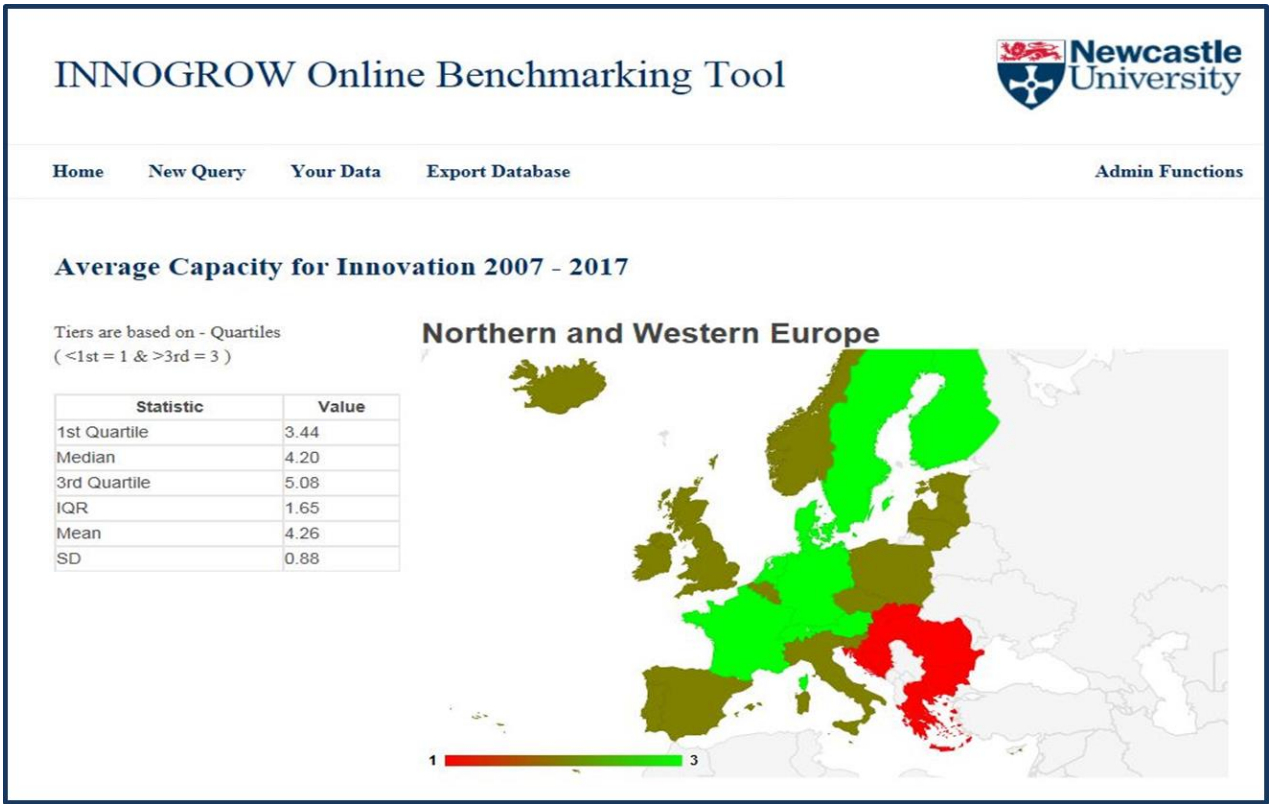
Area	Indicator	Definitions	Measurement
Innovation capacity	10	Capacity of innovation	In your country, to what extent do companies have the capacity to innovate? [1 = not at all; 7 = to a great extent]
	11	Quality of scientific research institutions	In your country, how do you assess the quality of scientific research institutions? [1 = extremely poor—among the worst in the world; 7 = extremely good—among the best in the world]
	12	Company spending on R&D	In your country, to what extent do companies invest in research and development (R&D)? [1 = do not invest at all in R&D; 7 = invest heavily in R&D]
	13	University-industry collaboration in R&D	In your country, to what extent do business and universities collaborate on research and development (R&D)? [1 = do not collaborate at all; 7 = collaborate extensively]
	14	Government procurement of advanced technology products	In your country, to what extent do government purchasing decisions foster innovation? [1 = not at all; 7 = to a great extent] |
	15	Availability of scientists and engineers	In your country, to what extent are scientists and engineers available? [1 = not available at all; 7 = widely available] |
	16	Patent Cooperation Treaty (PCT) per million population	Number of applications filed under the Patent Cooperation Treaty (PCT) per million population (This indicator measures the total count of applications filed under the Patent Cooperation Treaty (PCT), by priority date and inventor nationality, using fractional count if an application is filed by multiple inventors. The average count of applications filed in 2013 and 2014 is divided by population figures for 2014)

Source: World Economic Forum (2018).

2. An Example of the Benchmarking Tool

The online benchmarking tool created by the Newcastle University team is a web-based interface, utilising the existing datasets from the main two sources (Figure 2). This tool is designed as a user-driven data tool so that users can select specific indicators, areas or countries that they would like to compare.

Figure 2 Example of the Online Benchmarking Tool



Source: https://www.staff.ncl.ac.uk/steven.hall/innogrow/

In Figure 2, the tool displays results in terms of a geographical map and reports standard statistics such as standard deviation (SD), mean, and quartile. It allows INNOGROW users to compare the

indicators on SMEs competitiveness from their regions with other European countries. For example, when we compare an indicator, say the average capacity for innovation, which is a rating scale, amongst the INNOGROW countries, the tool will calculate standard descriptive statistics and show the position of the focused countries on the map which is represented by the colours: red is for the 1st quartile (≤3.44) and green is for the 3rd quartile (≥5.08). This reveals that the countries in green have higher SMEs who are capable to innovate than the countries in red. This can help policy makers and stakeholders to identify which areas of their regions should be improved.

3. Next Steps

At this stage, the benchmarking tool is still an experimental prototype. The tool will allow users to enter data online with a simple and friendly template. Currently the data used only provides information at the national level. Next, we encourage users to upload regional data or case studies. This will be useful for policy makers and stakeholders to identify the suitable practices and policies to support rural SMEs at both national and regional level. The first pilot of this benchmarking tool will be launched by the end of March. All feedback from the users will be useful for the team to develop the tool for the next stage.

4. References

Eurostat (2017) “Entrepreneurship indicator programme”
http://ec.europa.eu/eurostat/web/structural-businessstatistics/entrepreneurship/indicators

World Economic Forum (2018) “The Global Competitiveness Report 2017-2018”
http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf