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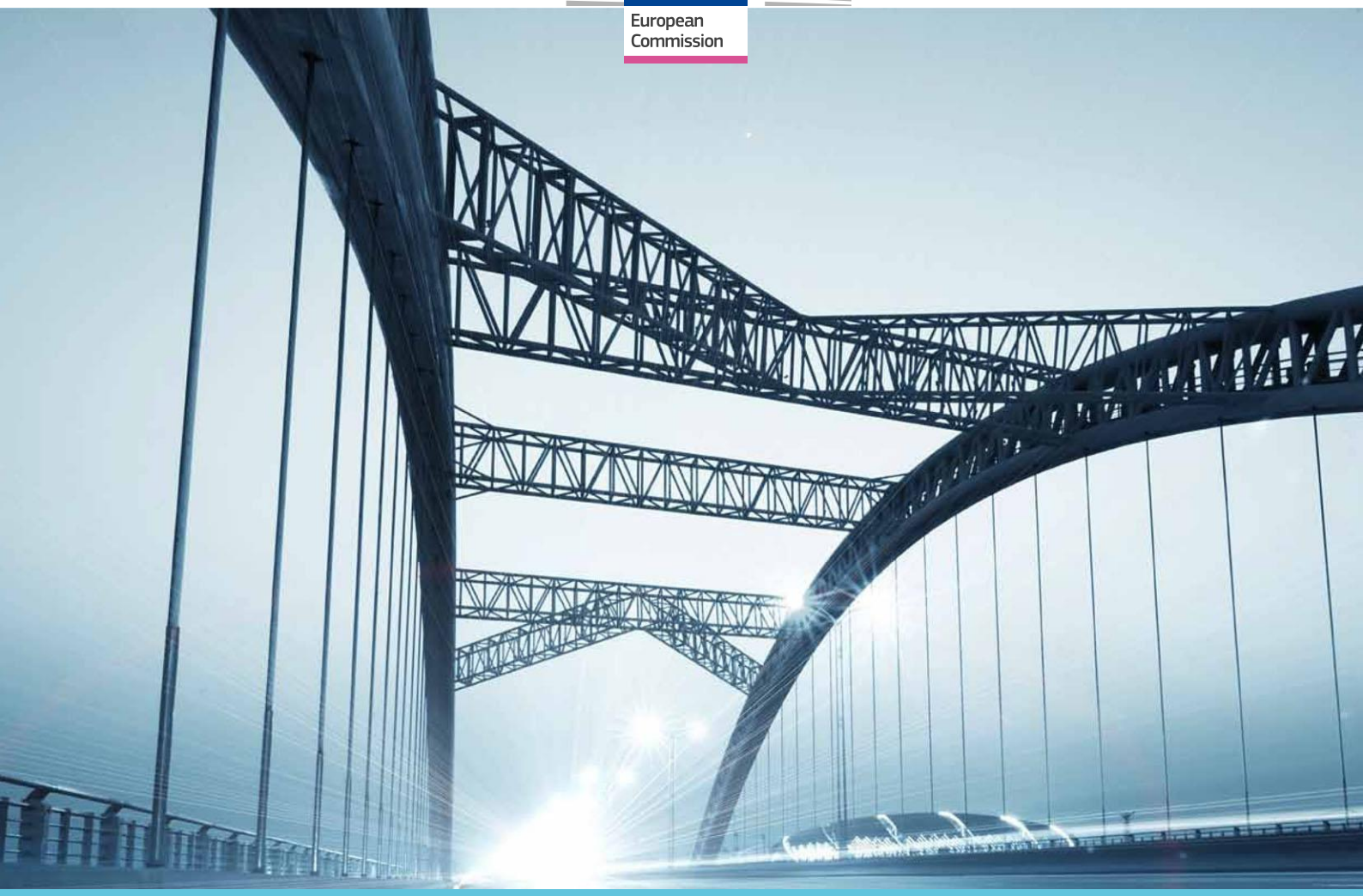

ESIC European Service Innovation Centre

REPORT

European Service Innovation Scoreboard (ESIS) – Key findings

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June 2014

ESIC in Brief

Increasingly service innovation plays an instrumental role in the transformation and upgrading of traditional economic sectors and industries into more productive, competitive and high value-added business eco-systems. Considered as being multi-dimensional in nature, service innovation comprises innovation in services, service sectors or service industries that are provided by service entrepreneurs and service firms. It also takes place in manufacturing industries, adding further value and contributing significantly to overall productivity and profitability. There is a growing need to assess, analyse and demonstrate what impact service innovation has on industrial change and to assist Member States and regions towards a greater understanding of service innovation as a driver of industrial transformation and future competitiveness.

The European Service Innovation Centre (ESIC) is a two-year initiative commissioned by the European Commission's Directorate-General for Enterprise and Industry to capture and demonstrate the dynamics and large-scale impact of service innovation as well as to assess how service innovation impacts on competitiveness, industrial structures and regional development. It will also focus on assessing the implications and impacts of service innovation on employment structures, economic patterns and on value creation.

ESIC has prepared a European Service Innovation Scoreboard (ESIS) in order to capture and demonstrate the impact of the **'transformative power'** of service innovation, of which selected key findings are presented in this document.

In addition, ESIC has provided customised advice to six selected model demonstrator regions (the Canary Islands, Emilia-Romagna, Limburg, Luxembourg, Northern Ireland and Upper Austria). The initiative will also help Europe's other regions and Member States to make better use of the transformative power of service innovation in strengthening existing and emerging industries and markets and to develop better industrial policies and smart specialisation / cluster strategies. The goal of creating a favourable eco-system for service innovation will boost supportive infrastructures and business conditions that, in turn, will facilitate the take-up of innovative services throughout the economy.

This work is a part of a service contract for the Enterprise and Industry Directorate-General of the European Commission.

Table of Contents

Executive summary

The European Service Innovation Scoreboard (ESIS) provides a statistical picture of the level of service innovation and its impact on other industries at the country and regional level for 27 EU Member States. The first edition uses wide range of indicators to capture different aspects relevant for service innovation.

ESIS shows that there is a certain variety in performance on service innovation across the Member States of the EU. At national level performance levels on different dimensions is linked to the innovation performance measured in the Innovation Union Scoreboard showing that service innovation makes a significant contribution to innovation performance. For those dimensions which measure performance changes over time there is no link with the Innovation Union Scoreboard nor with other ESIS dimensions as higher performing countries are more likely to have experienced slower change and lower performing countries faster change.

At regional level there is even more variation across the different dimensions. A comparison with regional innovation performance as measured in the Regional Innovation Scoreboard shows that ESIS is better able of capturing service innovation. The weaker performing regions in the Regional Innovation Scoreboard partly do so because service innovation in these regions is not fully captured in the Regional Innovation Scoreboard given that they perform better on service innovation.

1. Introduction

Experience demonstrates that service innovations have a transformative capacity by making a strong contribution to structural changes in regions or nations as highlighted by the final report of the Expert Panel on Service Innovation in the EU 'Meeting the Challenge of Europe 2020: The Transformative Power of Service Innovation'[1]. Based on this report, ESIC has produced the European Service Innovation Scoreboard (ESIS), of which an interactive ESIS online tool is available at: http://ec.europa.eu/enterprise/initiatives/esic/scoreboard/index_en.htm

ESIS uses a wide range of indicators to measure the impact of service innovation at national and regional levels. Full details of the measurement framework are explained in the ESIS Methodology report[2].

ESIS presents a statistical profile for 271 EU27 NUTS 2 regions, showing their performance related to each of the indicators, compared with overall EU27 performance. These profiles demonstrate the relative strengths and weaknesses of the regions and highlight potential areas for new policies aimed at improving the impact of service innovation. The statistical profiles are available at the ESIC website:
http://ec.europa.eu/enterprise/initiatives/esic/scoreboard/regional-scorecards/index_en.htm

This report presents key findings at the country and regional level using the ESIS database and comparing ESIS with the Innovation Union Scoreboard and the Regional Innovation Scoreboard[3].

[1] Expert Panel on Service Innovation in the EU (2011): Meeting the Challenge of Europe 2020: The Transformative Power of Service Innovation.
Online http://ec.europa.eu/enterprise/initiatives/esic/materials/expert_panel_report.pdf
[2] http://ec.europa.eu/enterprise/initiatives/esic/scoreboard/esis-methodology/index_en.htm
[3] http://ec.europa.eu/enterprise/policies/innovation/policy/innovation-scoreboard/index_en.htm

2. ESIS framework for measuring service innovation

The European Service Innovation Scoreboard consists of three scorecards each serving a different purpose. The scorecards highlight:

1. The importance of the transformative power of service innovation in a region;

2. Structural indicators that can be used as tools in regional policy making; and

3. Indicators measuring the economic performance of a region that capture the overall results of policies, innovation and business activities.

2.1. Scorecard for service innovation and its transformative power

The first set of indicators measures the **importance of service innovation** in a region. The indicators are presented in a similar way to the Innovation Union Scoreboard with indicators grouped into 5 dimensions (Annex 1). Average performance for each of the dimensions is measured using a **composite index** where performance has been rescaled from a minimum score of 0 to a maximum score of 100.

The first dimension measures *framework conditions*, which are defined as those factors that are external to a firm, that drive and shape the innovation activity of firms and influence their innovation performance and subsequent market success. These factors are outside the reach or influence of a single firm, or even a group of firms, and are usually issues to be addressed by policies. They represent the interface at which the innovation activities of firms are subsequently revealed in macro measurements of the structural change within a region or a sector.

Service innovation is conceived of as three closely connected elements captured by three further dimensions: *inputs* into the innovation; the actual *innovation throughput*; and *outputs* to the market. Inputs are the deliberate development of service innovation in firms. Service innovation is developed for a purpose and the innovation process is intentional. Hence, it did not 'just happen' as in a case that might be characterised as evolution rather than innovation. Throughputs are the new development themselves and output is the value created. This can be value to the company or the customer alike. If no value is created, then this analysis will not consider it to be a service innovation. *Outcomes*, the fifth dimension, capture structural change which is the impact of the transformative power of service innovation.

2.1.1. Regional innovation data

Although data availability for European regions has increased enormously in recent years, empirical analyses on specific research questions have to cope with difficulties in data availability and/or with data gaps. In particular for data coming from the Community Innovation Survey (CIS) regional data are not collected by Eurostat and are difficult to obtain from national sources. For some indicators regional estimates are available from the Regional Innovation Scoreboard (RIS)[4] which uses regional CIS data for a limited set of indicators. However, due to confidentiality agreements, only normalised data is available with the data being recalculated on a scale of zero to one.

As regional CIS data from the RIS is not available for all regions and indicators and does not include data from the most recent CIS 2010, a different approach is used that involves

[4] http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/

'regionalising' the CIS 2010 data. It is assumed that national 'intensities' or 'shares' observed at industry level also apply at regional level and by using real regional data on employment and the number of enterprises (units), it is possible to estimate the corresponding regional data by assuming that intensities at the country level also hold at the regional level. Real data at the NACE 2 digit level on employment and number of firms are then used to construct regional estimates for the ESIS indicators using CIS data. The ESIS Methodology report provides a more in-depth explanation.

2.1.2. Service innovation intensive industries

ESIS includes an indicator measuring the share of employment in service innovation intensive industries. As no official classification exists of such industries, these industries have been defined to include, first, those NACE[5] 2 digit industries which are within the highest quartile of industries with companies having introduced a service innovation in both 2008 and 2010 and secondly, those NACE 2 digit industries which are within the highest quartile of industries where the share of companies introducing a service innovation has increased most between 2008 and 2010.

The following industries have been identified as service innovation intensive industries (NACE codes in brackets): Manufacture of paper and paper products (C17); Publishing activities (J58); Telecommunications (J61); Computer programming, consultancy and related activities (J62); Information service activities (J63); Financial service activities, except insurance and pension funding (K64); Insurance, reinsurance and pension funding, except compulsory social security (K65); Architectural and engineering activities; technical testing and analysis; scientific research and development; advertising and market research (M71-M73).

2.1.3. Industries with transformative power of service innovation

The service innovation intensive industries are characterised by high shares of firms with service innovations within each of these industries. But service innovations also have an impact outside the industry in which they are generated. The Expert Panel, in particular, identified three types of service sectors that have this transformative power of service innovation:

- **Networking, connecting and brokerage services link consumers**, firms and supply chains and improve the allocation and distribution of goods and information in society[6].
- **Utilities and infrastructure services**, such as telecoms, energy and waste disposal, increasingly provide higher value-added services for their customers[7].
- **Knowledge Intensive Business Services (KIBS)** collaborate closely with their customers to help upgrade their technology, organizational processes and business models as well as transfer knowledge and experience across sectors[8].

[5] NACE is statistical classification of economic activities in the European Community. NACE is the acronym for "Nomenclature statistique des activités économiques dans la Communauté européenne". More details are available at http://epp.eurostat.ec.europa.eu/portal/page/portal/nace_rev2/introduction

[6] The following NACE Rev. 2 industries are included: H49 Land transport and transport via pipelines - if NACE 3-digit level data are available this should be limited to 49.2 (freight rail transport), 49.4 (freight transport by road) and 49.5 (transport via pipeline); H52 Warehousing and support activities for transportation; H53 Postal and courier services; J58 Publishing; J60 Broadcasting; N82 Office administrative, office support and other business support activities, i.e. call centers, organization of conventions and trade shows, etc.

[7] The following NACE Rev. 2 industries are included: D35 Electricity, gas, steam and air conditioning supply; J61 Telecommunications; K64, K65 and K66 Financial and insurance activities.

2.2. Scorecard for systemic functions and structural indicators

The second set consists of **structural indicators** that can be used as a tool in regional policy making (Annex 2). This set takes a broader approach and focuses on more general dimensions that are relevant to measuring entrepreneurial, high-tech and business activities in a region. As these more general dimensions also include service innovation activities, there is a small overlap between the first and second set of indicators but this enables exploiting individual, and also complete sets of, indicators that relate to the specific focus of the user.

2.3. Scorecard for the general socio-economic situation

The third set of indicators provides a summary of the economic performance of a region capturing the overall results of its policies, innovation and business activities. This scorecard includes indicators measuring the level of per capita income, disposable income, long-term unemployment, the degree of urbanisation and the quality of regional government[9].

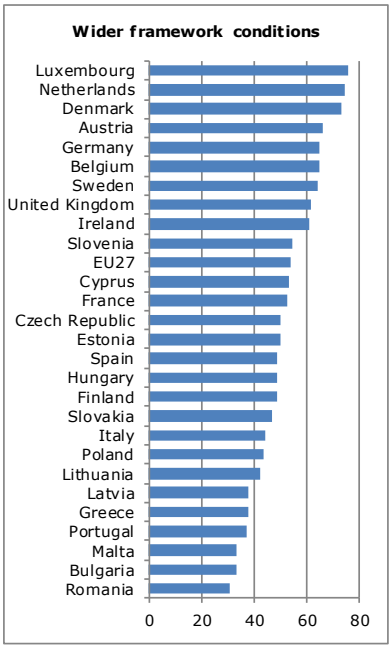
[8] The following NACE Rev. 2 industries are included: 62 Computer programming, consultancy and related activities; 63 Information service activities; 69 Legal and accounting activities; 70 Activities of head offices, management consultancy activities; 71 Architectural and engineering activities, technical testing and analysis; 72 Scientific research and development; 73 Advertising and market research.

[9] Data on the quality of regional government have been collected by the Quality of Government Institute: http://www.qog.pol.gu.se/data/datadownloads/qogeuregionaldata/

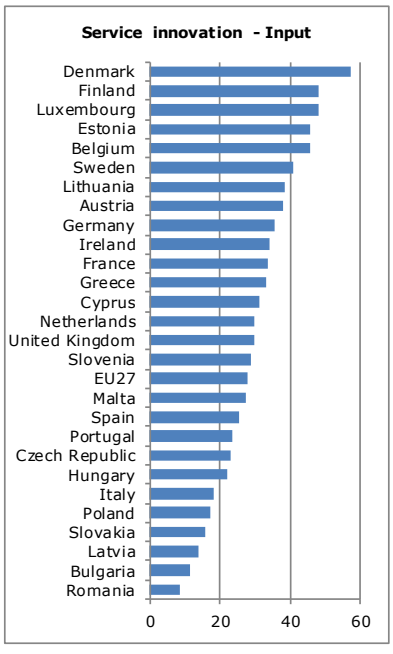
3. ESIS country level results

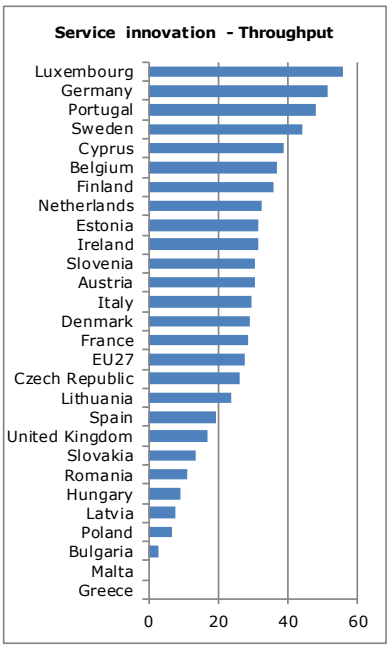
3.1. Service innovation and its transformative power

ESIS shows that there is a certain variety in performance across Europe on the level of the Member States. North-western Europe performs best on the *Wider framework conditions* (graph on the right) and Luxembourg, the Netherlands and Denmark have the highest performance scores. The lowest performance scores are found in Southern Europe, in particular in Romania, Bulgaria and Malta.

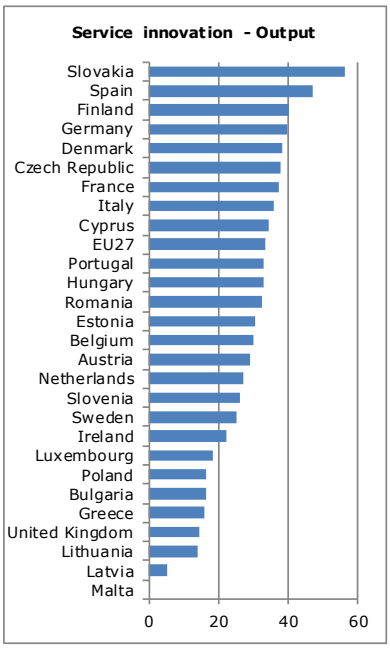


The performance on the three dimensions capturing the inputs, throughputs and outputs of service innovation is shown in the graphs below. Denmark performs best on the *Inputs to service innovation*, followed by Finland and Luxembourg. The weakest performance is observed in Eastern Europe, in particular in Bulgaria and Romania. On *Throughputs to service innovation* the best performers are Luxembourg, Germany, Portugal and Sweden and the worst performers include Bulgaria, Poland and Latvia. On *Outputs of service innovation* Slovakia and Spain show the best performance. Performance is weakest in Latvia, Lithuania and the UK.





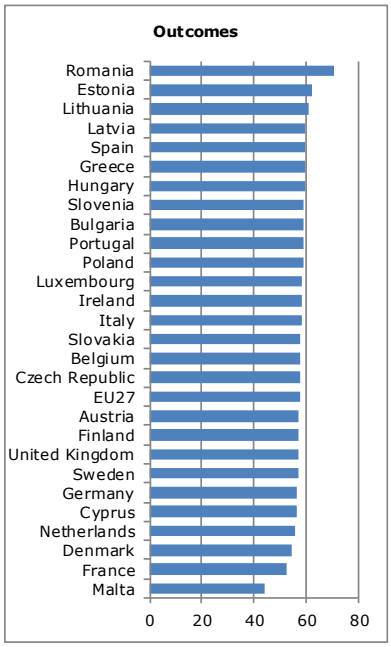
No index score for Greece and Malta



No index score for Malta

On *Outcomes* (graph on the right) differences are small with the exception of Romania showing an above average score and Malta showing a below average score.

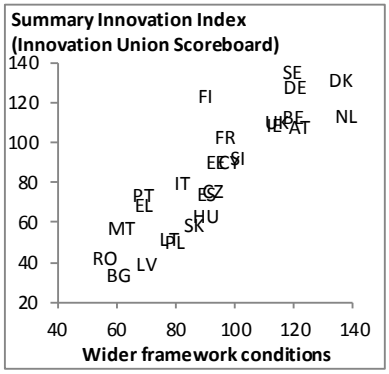
Most of the indicators used in ESIS are 'stock indicators' and capture the most recent levels of inputs and throughputs of the innovation process. Those indicators used in its Outcomes dimension on the other hand use 'flow indicators' which measure changes over time. Less performing countries more likely to register faster change as a result of catching-up from lower to higher performance levels. That the level of service innovation (as captures in the previous three dimensions) is not linked to Outcomes can be explained by high performing countries showing a below average change (from an already high) and low performing countries showing an above average change (from a lower level).



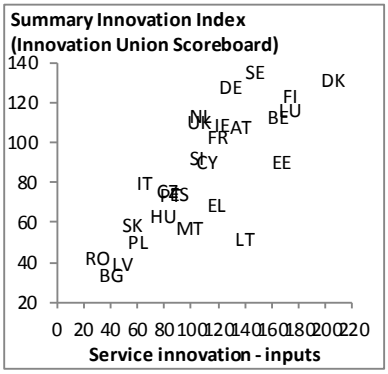
3.2. A comparison with the Innovation Union Scoreboard

Comparing the ESIS findings with the results of the Innovation Union Scoreboard (IUS)[10] underlines the fact that European innovation leaders rank high on the ESIS input, throughput and output dimensions (see graphs below). However, we also see some other Member States ranking high on these dimensions such as Lithuania on service innovation inputs, Portugal and Cyrpus on service innovation throughputs and Slovakia and Spain on service innovation outputs. This might reflect the different development paths, besides a certain time lag in measuring the results of service innovation.

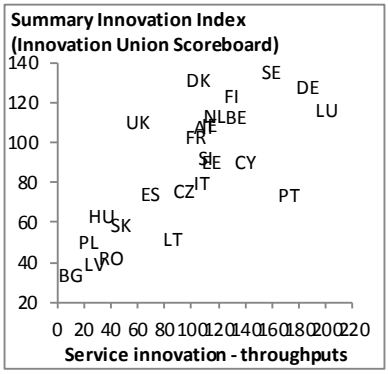
The fact that the dimensions in ESIS using 'stock indicators' show similar results as observed in IUS confirms that service innovation accounts for a significant share of overall innovation performance as measured in the IUS.



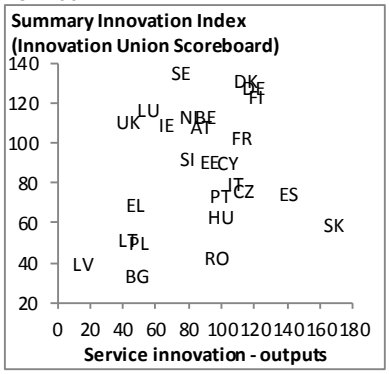
All scores are index values with EU=100.



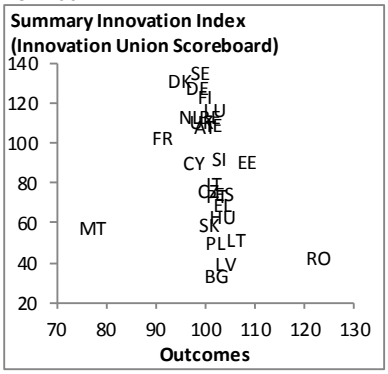
All scores are index values with EU=100.



All scores are index values with EU=100.



All scores are index values with EU=100.



All scores are index values with EU=100.

[10] The Innovation Union Scoreboard report is available at http://ec.europa.eu/enterprise/policies/innovation/policy/innovation-scoreboard/index_en.htm

4. ESIS regional level results

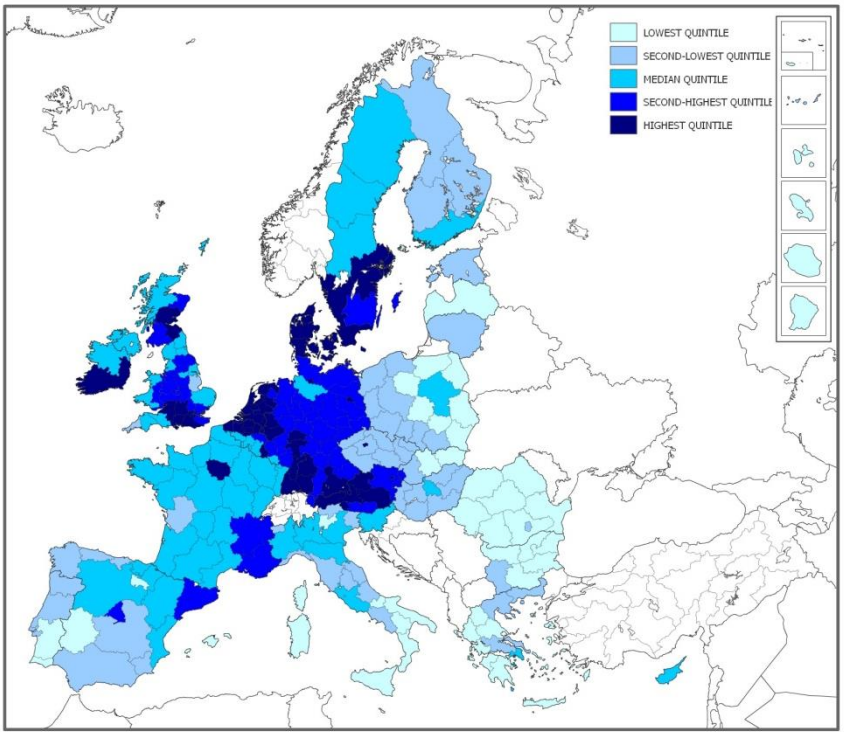
The first edition of ESIS covers the following 271 NUTS 2 level regions of the EU27 Member States. The names of all regions are provided in Annex 3.

4.1. Regional performance maps for service innovation

For each of the dimensions in the ESIS Scorecards for service innovation Europe's regions have been divided into five equal groups with each group including 54 regions as shown in the maps below.

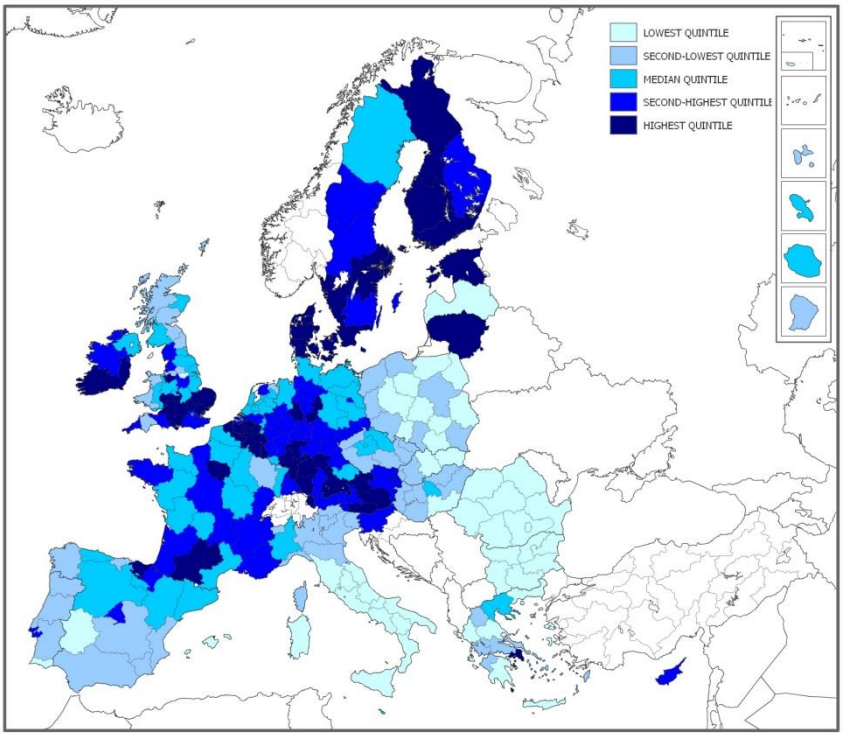
Wider framework conditions

The highest scores on wider framework conditions are observed in regions in Austria, Belgium, Denmark, Germany, Ireland and the Netherlands. The lowest scores are found in regions in Bulgaria and Romania.



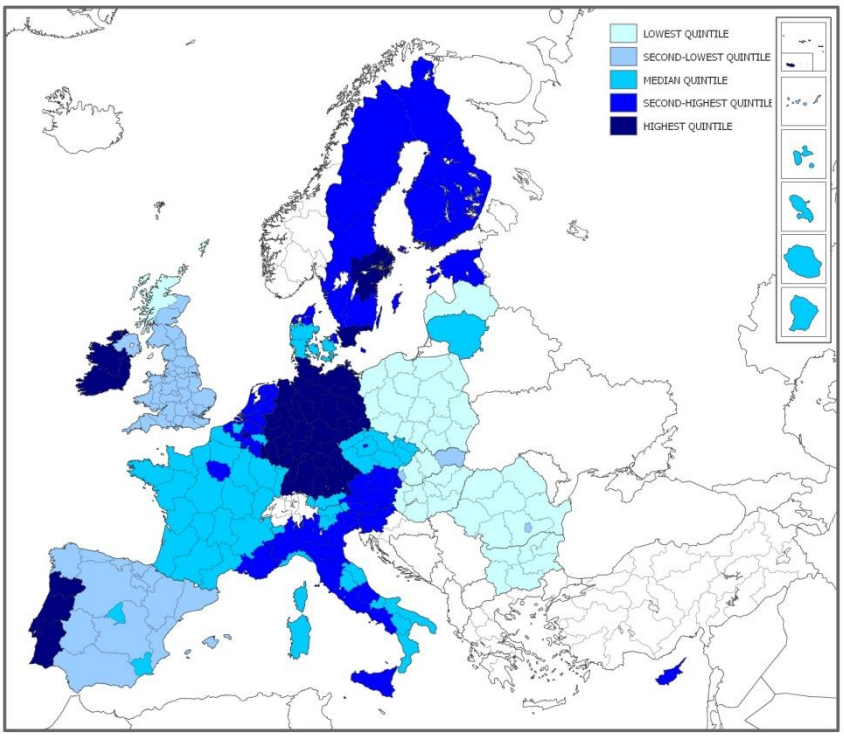
Service innovation – input

The highest scores on the inputs for service innovation are observed in regions in Austria, Belgium, Denmark, Finland and Sweden. The lowest scores are found in regions in Bulgaria, Romania and Southern Italy.



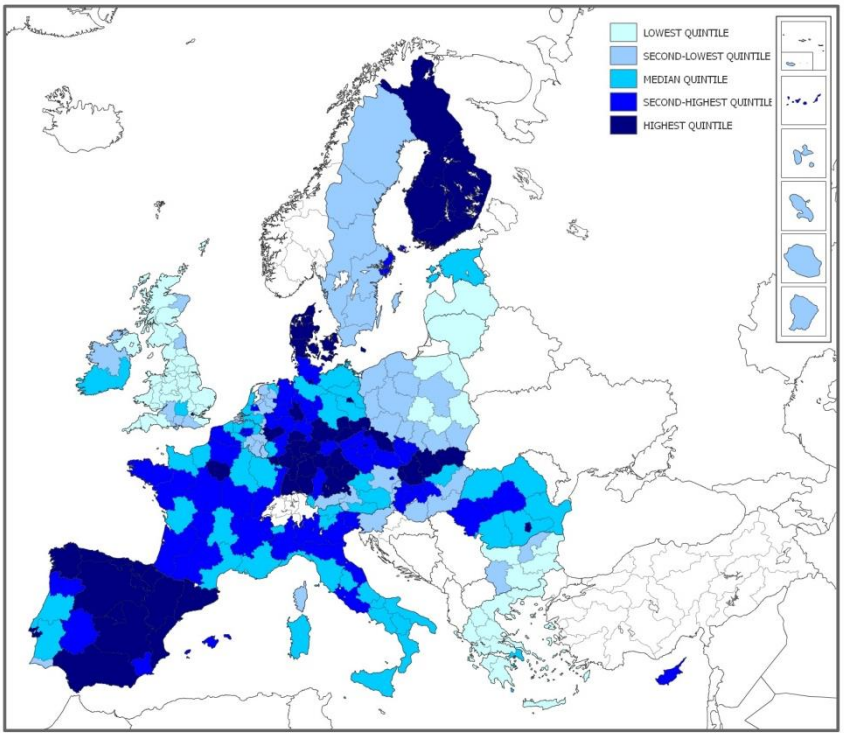
Service innovation – throughput

The highest scores on the throughputs for service innovation are observed in regions in Austria, Belgium, Denmark, Finland, Germany, Ireland, Sweden and Northern Italy. The lowest scores are found in regions in Eastern Europe.



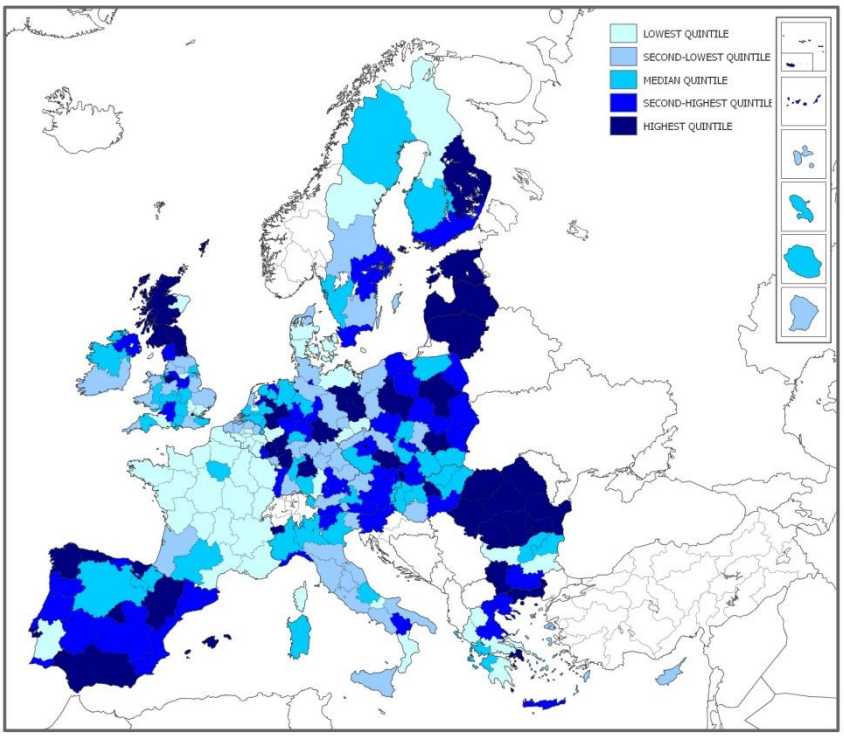
Service innovation – outputs

The highest scores on the outputs for service innovation are observed in regions in Denmark, Finland, Spain and Western Germany. The lowest scores are found in regions in Greece and the UK.



Outcomes

The highest scores on outcomes are observed in regions in the Baltic countries, Romania and Spain. The lowest scores are found in regions in Belgium, Denmark, France and part of the Nordic countries.

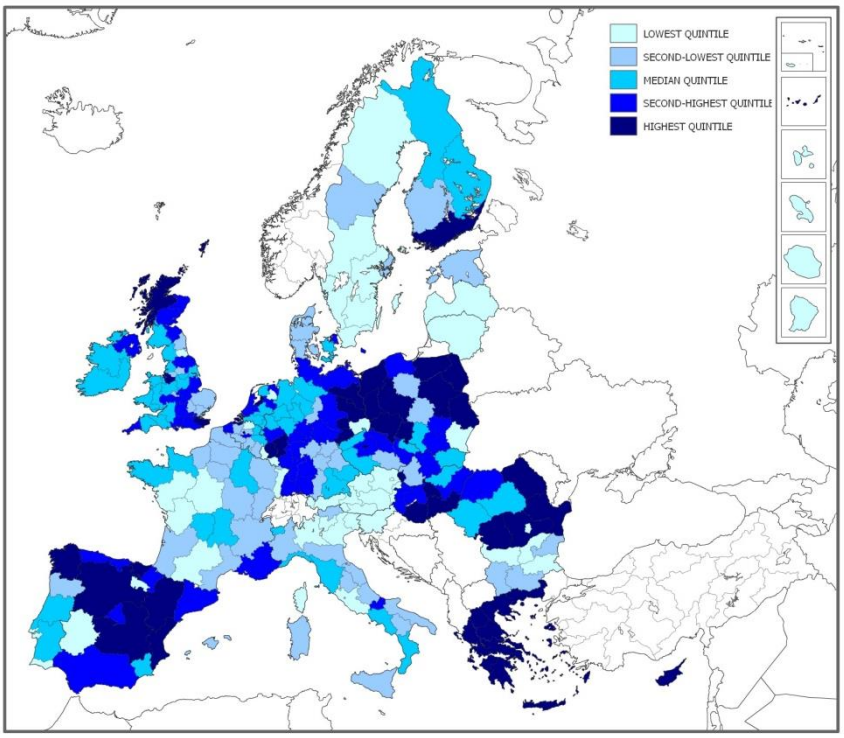


4.2. Regional performance maps for systemic functions and structural indicators

For each of the dimensions in the ESIS Scorecards for systemic functions and structural indicators the regions have been divided innovation the regions have been divided into five equal groups with each group including 54 regions as shown in the maps below.

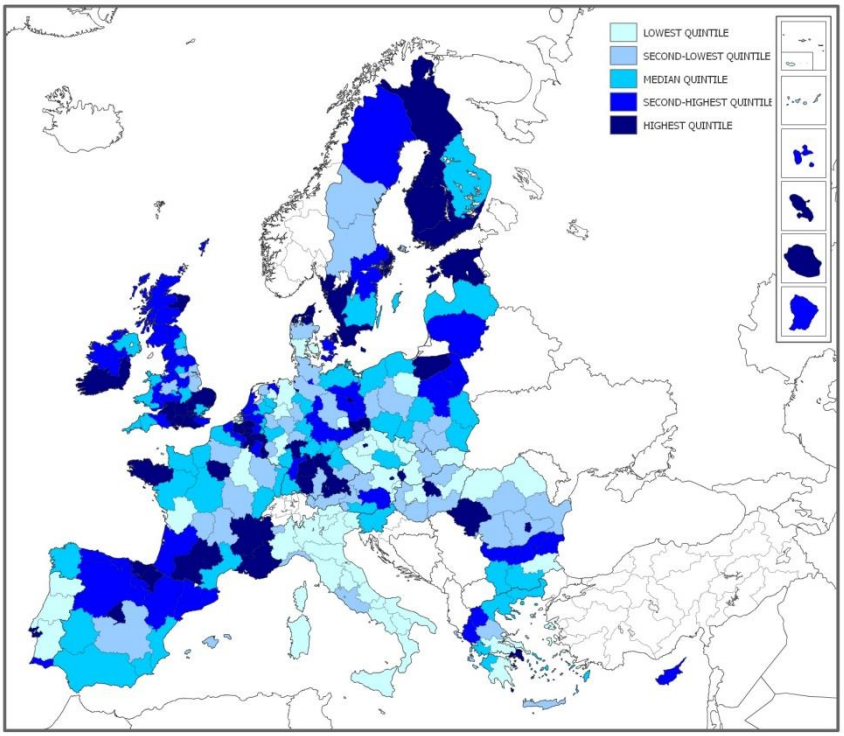
Entrepreneurial activities

The highest scores on entrepreneurial activities are observed in regions in Eastern and Southern Europe. The lowest scores are found in regions in Austria, France and Sweden.



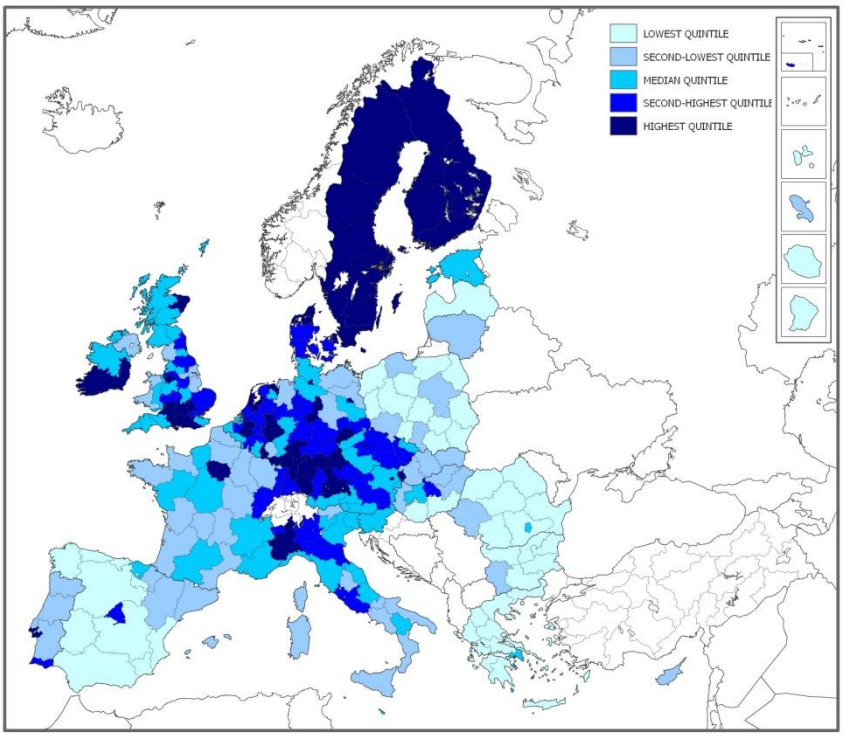
Knowledge development and transfer

The highest scores on knowledge development and transfer are observed in regions in Finland, Ireland, Sweden and the UK. The lowest scores are found in regions in Italy.



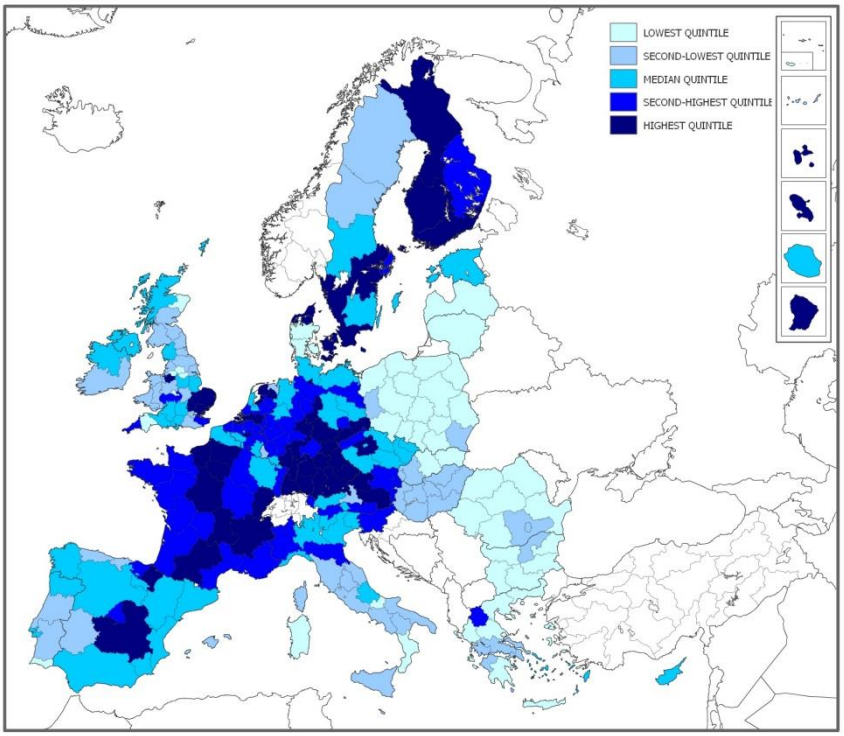
Innovation and business model generation

The highest scores on innovation and business model generation are observed in regions in Western and Northern Europe. The lowest scores are found in regions in Eastern Europe.



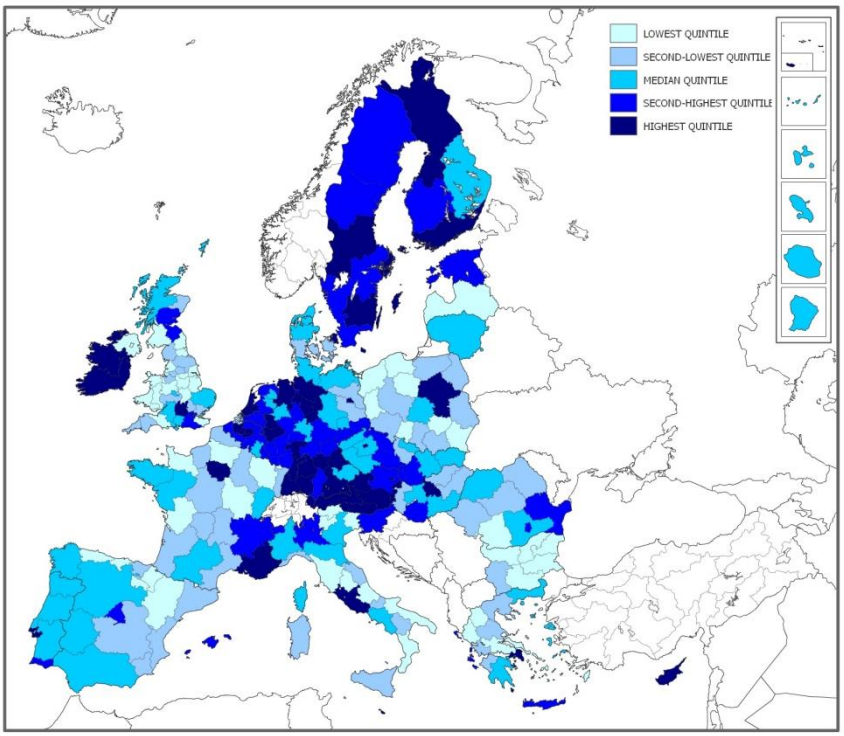
Financing innovation and growth

The highest scores on financing innovation and growth are observed in regions in Belgium, Finland, France, Netherlands and Western Germany. The lowest scores are found in regions in Eastern Europe.



Collaboration and networking

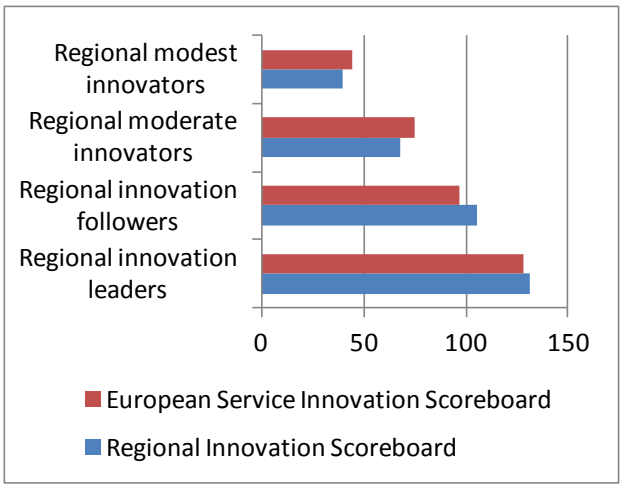
The highest scores on collaboration and networking are observed in regions in Belgium, Finland, Netherlands, Sweden and Western Germany. The lowest scores are found in regions in France and Eastern and Southern Europe.



4.3. A comparison with the Regional Innovation Scoreboard

The Regional Innovation Scoreboard[11] (RIS) uses the IUS measurement framework to benchmark innovation performance at the regional level. The RIS 2014 has classified Europe's regions into four different innovation performance groups. *Regional Innovation leaders* are those regions which perform 20% or more above the EU average. *Regional Innovation followers* are regions performing between 90% and 120% of the EU average. *Regional Moderate innovators* are regions performing between 50% and 90% of the EU average and *Regional Modest innovators* perform below 50% of the EU average. RIS measures innovation performance by using a composite indicator which compiles performance of the individual indicators into a single number.

For ESIS an experimental index measuring service innovation has been compiled by using the indicators for the three dimensions capturing inputs, throughputs and outputs of service innovation. The regions in ESIS have been grouped using the performance groups of the RIS 2014 and a comparison of the average innovation performance as measured in RIS with the average service innovation performance measured in ESIS (see graph on the right) confirms that service innovation is not adequately captured in the RIS as the weaker performing regions - the Modest and Moderate innovators - perform relatively better on service innovation.



Relative to EU27/28=100

[11] The Regional Innovation Scoreboard report is available at http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/

Annex 1: ESIS indicators measuring service innovation

Wider framework conditions	**Service innovation: input**	**Service innovation: throughput**	**Service innovation: output**	**Outcomes**
(Quality of) Institutions (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Innovation expenditures in Knowledge intensive business services (% share of turnover) *Source: Community Innovation Survey*	Share of companies that introduced a service innovation ((% of all firms) *Source: Community Innovation Survey*	Employment share in service innovation intensive industries (% total employment) *Source: Structural Business Statistics*	Change in employment share in Knowledge intensive business services *Source: Structural Business Statistics*
Macroeconomic stability (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Innovation expenditures in Networking, connecting and brokerage services (% share of turnover) *Source: Community Innovation Survey*	Share of Product /Process innovators in Knowledge intensive business services ((% of all firms) *Source: Community Innovation Survey*	Turnover share of newly introduced innovations to the market (%) *Source: Community Innovation Survey*	Change in employment share in Networking, connecting and brokerage services *Source: Structural Business Statistics*
(Availability of) Infrastructure (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Innovation expenditures in Utilities and infrastructure services (% share of turnover) *Source: Community Innovation Survey*	Share of Product /Process innovators in Networking, connecting and brokerage services (% of all firms) *Source: Community Innovation Survey*	Turnover share of newly introduced innovations to the firm (%) *Source: Community Innovation Survey*	Change in employment share in Utilities and infrastructure services *Source: Structural Business Statistics*
Higher Education/ Training and Lifelong Learning (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Share of innovators cooperating with others (%) *Source: Community Innovation Survey*	Share of Product /Process innovators in Utilities and infrastructure services (% of all firms) *Source: Community Innovation Survey*		Change in employment share in knowledge-intensive services *Source: Structural Business Statistics*
Labour market efficiency (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Share of employees with a higher education degree (%) *Source: Labour Force Survey*	Share of Marketing innovators in Knowledge intensive business services (% of all firms) *Source: Community Innovation Survey*		Change in employment share in service innovation intensive industries *Source: Structural Business Statistics*
Market size (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Business expenditure on R&D (% share of GDP) *Source: R&D statistics*	Share of Marketing innovators in Networking, connecting and brokerage services (% of all firms) *Source: Community Innovation Survey*		Labour productivity growth *Source: Structural Business Statistics*
Business sophistication (composite indicator, range from 1 to 100) *Source: Regional Competitiveness Index*	Researchers in business enterprise sector (% share of all employees) *Source: R&D statistics*	Share of Marketing innovators in Utilities and infrastructure services (% of all firms) *Source: Community Innovation Survey*		
Share of people who think it is important to try new and different things in life (%) *Source: European Social Survey*	Total R&D personnel in business enterprise sector (% share of all employees) *Source: R&D statistics*	Share of Organisational innovators in Knowledge intensive business services (% of all firms) *Source: Community Innovation Survey*		
Share of people who think it is important to think new ideas and be creative (%) *Source: European Social Survey*		Share of Organisational innovators in Networking, connecting and brokerage services (% of all firms) *Source: Community Innovation Survey*		
		Share of Organisational innovators in Utilities and infrastructure services (% of all firms) *Source: Community Innovation Survey*		

Annex 2: ESIS structural indicators

Entrepreneurial activities	**Knowledge development and transfer**	**Innovation and business model generation**	**Financing innovation and growth**	**Collaboration and networking**
Share of self-employed people (%) *Source: Labour Force Survey*	Share of employees with a higher education degree (%) *Source: Labour Force Survey*	Share of companies with service innovations (% of all companies) *Source: Community Innovation Survey*	Gross Fixed Capital Formation (% share of GDP) *Source: National accounts data*	Share of innovating firms collaborating with others (%) *Source: Community Innovation Survey*
Share of people who think it is important to try new and different things in life (%) *Source: European Social Survey*	Researchers in business enterprise sector (% share of all employees) *Source: R&D statistics*	Employment share in medium-high-tech and high-tech manufacturing (% of total employment)	Total expenditure on R&D (% share of GDP) *Source: R&D statistics*	Specialisation in service-oriented clusters (location quotient) *Source: Structural Business Statistics*
Share of people who think it is important to think new ideas and be creative (%) *Source: European Social Survey*	European Patent Office high-tech patent applications (% share of all EPO patent applications) *Source: Patent statistics*	Employment share in knowledge-intensive services (% of total employment) *Source: Structural Business Statistics*	Business expenditure on R&D (% share of GDP) *Source: R&D statistics*	Share of employment in 2 and 3 star clusters (as measured by the European Cluster Observatory) (% of total employment) *Source: European Cluster Observatory*
Labour productivity growth		Employment share in service innovation intensive industries (% of total employment)	Share of innovating firms that received public financial support (%) *Source: Community Innovation Survey*	

Annex 3: ESIS Regional coverage of the European Service Innovation Scoreboard

ESIS covers the following 271 NUTS 2 level regions of the EU27 Member States[12]:

Belgium	BE1 Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest; BE21 Prov. Antwerpen; BE22 Prov. Limburg; BE23 Prov. Oost- Vlaanderen; BE24 Prov. Vlaams-Brabant; BE25 Prov. West-Vlaanderen; BE31 Prov. Brabant Wallon; BE32 Prov. Hainaut; BE33 Prov. Liège; BE34 Prov. Luxembourg; BE35 Prov. Namur
Bulgaria	BG31 Severozapaden; BG32 Severen tsentralen; BG33 Severoiztochen; BG34 Yugoiztochen; BG41 Yugozapaden; BG42 Yuzhen tsentralen
Czech Republic	CZ01 Praha; CZ02 Strední Cechy; CZ03 Jihozápad; CZ04 Severozápad; CZ05 Severovýchod; CZ06 Jihovýchod; CZ07 Strední Morava; CZ08 Moravskoslezsko
Denmark	DK01 Hovedstaden; DK02 Sjælland; DK03 Syddanmark; DK04 Midtjylland; DK05 Nordjylland
Germany	DE11 Stuttgart; DE12 Karlsruhe; DE13 Freiburg; DE14 Tübingen; DE21 Oberbayern; DE22 Niederbayern; DE23 Oberpfalz; DE24 Oberfranken; DE25 Mittelfranken; DE26 Unterfranken; DE27 Schwaben; DE3 Berlin; DE41 Brandenburg – Nordost; DE42 Brandenburg – Südwest; DE5 Bremen; DE6 Hamburg; DE71 Darmstadt; DE72 Gießen; DE73 Kassel; DE8 Mecklenburg-Vorpommern; DE91 Braunschweig; DE92 Hannover; DE93 Lüneburg; DE94 Weser-Ems; DEA1 Düsseldorf; DEA2 Köln; DEA3 Münster; DEA4 Detmold; DEA5 Arnsberg; DEB1 Koblenz; DEB2 Trier; DEB3 Rheinhessen-Pfalz; DEC Saarland; DED1 Chemnitz; DED2 Dresden; DED3 Leipzig; DEE Sachsen-Anhalt; DEF Schleswig-Holstein; DEG Thüringen
Estonia	Included at country level
Ireland	IE01 Border, Midland and Western; IE02 Southern and Eastern
Greece	EL11 Anatoliki Makedonia, Thraki; EL12 Kentriki Makedonia; EL13 Dytiki Makedonia; EL14 Thessalia; EL21 Ipeiros; EL22 Ionia Nisia; EL23 Dytiki Ellada; EL24 Sterea Ellada; EL25 Peloponnisos; EL3 Attiki; EL41 Voreio Aigaio; EL42 Notio Aigaio; EL43 Kriti
Spain	ES11 Galicia; ES12 Principado de Asturias; ES13 Cantabria; ES21 País Vasco; ES22 Comunidad Foral de Navarra; ES23 La Rioja; ES24 Aragón; ES3 Comunidad de Madrid; ES41 Castilla y León; ES42 Castilla-la Mancha; ES43 Extremadura; ES51 Cataluña; ES52 Comunidad Valenciana; ES53 Illes Balears; ES61 Andalucía; ES62 Región de Murcia; ES63 Ciudad Autónoma de Ceuta; ES64 Ciudad Autónoma de Melilla; ES7 Canarias
France	FR1 Île de France; FR21 Champagne-Ardenne; FR22 Picardie; FR23 Haute-Normandie; FR24 Centre ; FR25 Basse-Normandie; FR26 Bourgogne; FR3 Nord - Pas-de-Calais; FR41 Lorraine; FR42 Alsace; FR43 Franche-Comté; FR51 Pays de la Loire; FR52 Bretagne; FR53 Poitou-Charentes; FR61 Aquitaine; FR62 Midi-Pyrénées; FR63 Limousin; FR71 Rhône-Alpes; FR72 Auvergne; FR81 Languedoc-Roussillon; FR82 Provence-Alpes-Côte d'Azur; FR83 Corse; FR91 Guadeloupe; FR92 Martinique; FR93 Guyane; FR94 Réunion
Italy	ITC1 Piemonte; ITC2 Valle d'Aosta/Vallée d'Aoste; ITC3 Liguria; ITC4 Lombardia; ITH1 Provincia Autonoma Bolzano/Bozen; ITH2 Provincia Autonoma Trento; ITH3 Veneto; ITH4 Friuli-Venezia Giulia; ITH5 Emilia-Romagn; ITI1 Toscana; ITI2 Umbria; ITI3 Marche; ITI4 Lazio; ITF1 Abruzzo; ITF2 Molise; ITF3 Campania; ITF4 Puglia; ITF5 Basilicata; ITF6 Calabria; ITG1 Sicilia; ITG2 Sardegna

[12] The ESIS update will, depending on data availability, also cover Croatia, Norway, Switzerland and their regions and Iceland, Liechtenstein, the former Yugoslav Republic of Macedonia, Turkey and Serbia. Due to insufficient data Albania, Israel, Liechtenstein and Montenegro cannot be included.

Cyprus	Included at country level
Latvia	Included at country level
Lithuania	Included at country level
Luxembourg	Included at country level
Hungary	HU1 Közép-Magyarország; HU21 Közép-Dunántúl; HU22 Nyugat-Dunántúl; HU23 Dél-Dunántúl; HU31 Észak-Magyarország; HU32 Észak-Alföld; HU33 Dél-Alföld
Malta	Included at country level
Netherlands	NL11 Groningen; NL12 Friesland; NL13 Drenthe; NL21 Overijssel; NL22 Gelderland; NL23 Flevoland; NL31 Utrecht; NL32 Noord-Holland; NL33 Zuid-Holland; NL34 Zeeland; NL41 Noord-Brabant; NL42 Limburg
Austria	AT11 Burgenland; AT12 Niederösterreich; AT13 Wien; AT21 Kärnten; AT22 Steiermark; AT31 Oberösterreich; AT32 Salzburg; AT33 Tirol; AT34 Vorarlberg
Poland	PL11 Lódzkie; PL12 Mazowieckie; PL21 Malopolskie; PL22 Slaskie; PL31 Lubelskie; PL32 Podkarpackie; PL33 Swietokrzyskie; PL34 Podlaskie; PL41 Wielkopolskie; PL42 Zachodniopomorskie; PL43 Lubuskie; PL51 Dolnoslaskie; PL52 Opolskie; PL61 Kujawsko-Pomorskie; PL62 Warminsko-Mazurskie; PL63 Pomorskie
Portugal	PT11 Norte; PT15 Algarve; PT16 Centro; PT17 Lisboa; PT18 Alentejo; PT2 Região Autónoma dos Açores; PT3 Região Autónoma da Madeira
Romania	RO11 Nord-Vest; RO12 Centru; RO21 Nord-Est; RO22 Sud-Est; RO31 Sud-Muntenia; RO32 Bucuresti-Ilfov; RO41 Sud-Vest Oltenia; RO42 Vest
Slovenia	SI01 Vzhodna Slovenija; SI02 Zahodna Slovenija
Slovakia	SK01 Bratislavský kraj; SK02 Západné Slovensko; SK03 Stredné Slovensko; SK04 Východné Slovensko
Finland	FI13 Itä-Suomi; FI18 Etelä-Suomi; FI19 Länsi-Suomi; FI1A Pohjois-Suomi; FI2 Åland
Sweden	SE11 Stockholm; SE12 Östra Mellansverige; SE21 Småland med öarna; SE22 Sydsverige; SE23 Västsverige; SE31 Norra Mellansverige; SE32 Mellersta Norrland; SE33 Övre Norrland
United Kingdom	UKC1 Tees Valley and Durham; UKC2 Northumberland and Tyne and Wear; UKD1 Cumbria; UKD2 Cheshire; UKD3 Greater Manchester; UKD4 Lancashire; UKD5 Merseyside; UKE1 East Yorkshire and Northern Lincolnshire; UKE2 North Yorkshire; UKE3 South Yorkshire; UKE4 West Yorkshire; UKF1 Derbyshire and Nottinghamshire; UKF2 Leicestershire, Rutland and Northamptonshire; UKF3 Lincolnshire; UKG1 Herefordshire, Worcestershire and Warwickshire; UKG2 Shropshire and Staffordshire; UKG3 West Midlands; UKH1 East Anglia; UKH2 Bedfordshire and Hertfordshire; UKH3 Essex; UKI1 Inner London; UKI2 Outer London; UKJ1 Berkshire, Buckinghamshire and Oxfordshire; UKJ2 Surrey, East and West Sussex; UKJ3 Hampshire and Isle of Wight; UKJ4 Kent; UKK1 Gloucestershire, Wiltshire and Bristol/Bath area; UKK2 Dorset and Somerset; UKK3 Cornwall and Isles of Scilly; UKK4 Devon; UKL1 West Wales and The Valleys; UKL2 East Wales; UKM2 Eastern Scotland; UKM3 South Western Scotland; UKM5 North Eastern Scotland; UKM6 Highlands and Islands; UKN Northern Ireland

This work is a part of a service contract for the Enterprise and Industry Directorate-General of the European Commission.