

XXV. International RESER Conference: The assessment of service innovation in relation to regional development. A comparative analysis between the Province of Limburg and the Region of Bucharest-Ilfov

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The main aim of the current paper is to assess the relevancy, potential and policy mix of innovation at the regional level, with a particular focus on two European regions. The comparative analysis is based on statistical data pointing out the current and potential trends of service innovation, and on the evaluation of the service innovation regional policies. Ideally would be that the innovation policy to follow a systemic approach with the purpose to foster regional development through service innovation, but the assessments undertaken in the two cases show a different reality. Based on the best practices and shortcomings identified within the two regions, a series of policy recommendations for developing proper innovation policies are formulated.

1. Introduction

The topic of this research is connected to a previous research process that was coordinated by the European Service Innovation Centre (ESIC), as an initiative of the DG Enterprise and Industry of the European Commission. Under the coordination of this centre, reports on six model demonstrator regions were provided with the purpose of assessing “how innovation impacted on competitiveness, industrial structures and regional development” (DG GROWTH, 2015).

Selected from the six model demonstrator regions, the Province of Limburg is going to be compared to the most developed region of Romania.

The best comparable region from Romania to the Province of Limburg is the Bucharest-Ilfov (RO32), based on various arguments as follows:

- The Province of Limburg, as referential region, is classified as a ‘follower innovator’¹, while the Bucharest-Ilfov is the most performant region from all Romania and it is classified as a ‘moderate innovator’. The Region of Bucharest-Ilfov would be

¹ The classification of the Regional Innovation Scoreboard 2014 (Annoni; Dijkstra, 2013) is used, where the regions are divided in four groups with the ‘innovation followers’ as the second category, and the ‘moderate innovators’ as the third category.

the closest Romanian region to the Province of Limburg in terms of innovation performance;

- In terms of Regional Competitiveness Index, the difference between the Province of Limburg (17th position) and the Region of Bucharest-Ilfov (165th position) is huge, but by choosing another Romanian region the gap would be deeper;
- The Region of Bucharest-Ilfov out of the eight regions of Romania is the most similar to the Province of Limburg when discussing about the industrial structure (2008-2011 average employment shares for most of the NACE Rev 2 industries) and levels of GDP per capita;
- The closest similarity between the Region of Bucharest-Ilfov, compared to the other seven regions of Romania, and the Province of Limburg in terms of the results registered by the European Service Innovation Scoreboard that takes into consideration the transformative power of service innovation, the systemic functions/ structural indicators and the general socio-economic situation.

Even if the regions have a different development path, the Region of Bucharest-Ilfov may catch up very rapidly and evolve in leaps, as innovation is not following a precise linear trend.

The analysis will bring arguments sustaining that the market of the Region of Bucharest-Ilfov is dominated by services, while the Province of Limburg is mainly focused on high-tech manufacturing industry. Major efforts have been made in the Province of Limburg in order to develop its manufacturing industry through service innovation and these will be pointed out along the paper. The dominance of services could be a strong point for the Region of Bucharest-Ilfov, but in the same time represents a constant challenge as innovations are constantly required by the consumers.

In terms of structure, the comparative analysis is following similar points of discussion as the ones included in the reports of the model demonstrator regions, starting from the challenge of each region; and referring to two main components: the Regional performance and potential, and the Regional policy and policy mix, focused on innovation policy and institutional background, policy mix, assessment of the regional policy mix; and finally policy recommendations are formulated.

2. Methodology

Enforcing, the same methodology that was developed by the ESIC for the assessment of the six demonstrator regions will be also used in the case of the Region of Bucharest-Ilfov. The main research instruments consist of the European Service Innovation Scoreboard (ESIS)² and the Self-Assessment Tool (SAT)³ (DG GROWTH, 2015). Identifying the challenge of each region represents the starting point for carrying out the assessments dedicated to service innovation. Particularly for the Region of Bucharest-Ilfov, the global and particular strategic objectives formulated by the ADRBI (2014) within the Regional Strategy Bucharest-Ilfov 2014-2020 (ADRBI, 2014,

² More details are available at: http://ec.europa.eu/enterprise/initiatives/esic/scoreboard/index_en.htm

³ More details, including the content of the SAT, are available at: http://ec.europa.eu/enterprise/initiatives/esic/services/self-assessment/index_en.htm

232) are based on the innovation dimension and they could be generally assimilated to the challenges of the Region of Bucharest-Ilfov in terms of service innovation, as follows:

Consolidating the regional competitiveness by setting two specific objectives:

- Augmentation of the SMEs competitiveness;
- Consolidation of research, technological development and innovation;

Reducing the intraregional disparities by enforcing the social and territorial cohesion within the region;

Sustainable urban and rural development that is divided into three specific objectives, as follows:

- Promoting sustainable transport systems and diminishing the jams within the transport network;
- Improving the environment's quality and supporting the sustainable development;
- Transition to an economy with a low carbon level.

Overall, the main challenge of the Region of Bucharest-Ilfov is to foster the development of the existing industries by internalizing the top targets/achievements at international level through the stimulation of service innovation, and assure a coherent legislative framework that leads to the increase of regional competitiveness. The Region of Bucharest-Ilfov has already developed several powerful industries where service innovation has a growing potential, but the interest would be to be a referential region for several of them. Being a referential region in some areas, the Region of Bucharest-Ilfov has to maintain the high level already achieved and find ways to follow an ascendant trajectory. A more particular challenge of the Region of Bucharest-Ilfov would be, on one hand, to engage large SMEs to generate disruptive innovation in order to assure a more rapid catch up in relation to the more developed regions of EU, and on the other hand, to support small and medium SMEs to expand their innovations, including through imitation and adaptation to their activities.

The challenges of the Province of Limburg are related to the transition from a high-tech manufacturing industry to industrial business services and are referring to:

- Bringing new reforms of added value to the manufacturing industry in order to make the Limburg economy more service-oriented;
- Connecting the regional ecosystem for a more knowledge-intensive industrial services emerge;
- Promoting cross-border opportunities by more international cooperation and more strategic cross-border thinking.

Overall, the main objective of the Province of Limburg is to foster the collaboration between manufacturing and service industry firms (Izsak *et al.*, 2013).

Summing up, both regions are aware of the current challenges that they have to deal with and perceive innovation, including service innovation, as a solution to achieve them.

The section dedicated to the regional performance and potential of the regions is dominated by statistical analysis, using mainly the data provided through European Service Innovation Scoreboard, while in the section focused on regional policy and policy mix the Self-Assessment Tool is used. In the latter case, for supporting the formulation of a service-inclusive policy, an overview on the main approaches associated to service innovation is captured. Janssen and Castaldi (2015) are revealing the main characteristics of the three traditional approaches (assimilation, demarcation, synthesis) corresponding to service innovation and they are proposing to separate the last approach into a 'pre-synthesis' and a 'post-synthesis' phase. The 'post-synthesis' is assimilated to the 'synthesis' approach in which services are integrated issues and innovation in goods and services are overlapping, while the 'pre-synthesis' promotes the incorporation of service-specific insights into the larger sphere of service innovation knowledge (Janssen; Castaldi, 2015). The assimilation approach is based on the fact that the same characteristics are shared by both goods and services, while the demarcation approach highlights the distinctive characteristics of services. Overall, the formulation of a systemic innovation policy starts from the understanding of the approaches associated to service innovation⁴.

Further on, the four approaches, through their particular policy instruments, are linked with the functional perspective on innovation systems with the purpose of providing a picture on their corresponding configuration of measures that are strengthening various systemic functions (Janssen; Castaldi, 2015).

In relation to the innovation systems and the choice of policy instruments, "policy makers are advised to avoid focusing on individual measures only" (Flanagan *et al.*, 2011; Edquist, 2014 in Janssen; Castaldi, 2015, 3) and reach a systemic state by combining them into mixes that refer to innovation (Borrás; Edquist, 2013 Janssen and Castaldi, 2015).

It is essential to mention that even if the policy mixes do not indicate a particular measure related to service innovation, service innovation can be supported by indirect actions. The manner in which a certain policy measure is classified is presented by Janssen and Castaldi (2015) through the map dedicated to 'service-inclusiveness' that is referring to two dimensions: one is dedicated to measure whether a particular measure is associated either to goods or services, and the second regards the theme of the policy whether is generic or specific.

Explicitly, the specialized-good policy instruments have a sectoral focus; the neutral goods-based policy instruments are referring to more general sectors; specialized service-based policy instruments are related to a particular kind of intangibles; and neutral service-based policy instruments address knowledge development and transfer. This map may prove to be a useful tool for conducting comparisons of the policy measures regarding service-inclusiveness.

The methods used for carrying out the assessment of the regional policy mix on innovation focus on the content analysis of various legislative documents and semi-structured interviews conducted based on the questionnaire associated to the Self-Assessment Tool (SAT).

⁴ Detailed description of each approach is found in the paper of Janssen and Castaldi; 2015, 4-9.

The SAT is an on-line questionnaire that contains 15 questions, distributed into the following categories: innovation and business model generation, knowledge development and transfer, financing innovation and growth, entrepreneurial activities, and collaboration & networking.

Particularly, semi-structured interviews were applied and several e-mails were sent to some experts in service innovation from Region of Bucharest-Ilfov of Romania in the period April-May 2015. Apart of these research methods, the document and data analyses were used and desk research was conducted.

3. Socio-economic context for service innovation

3.1. General socio-economic situation

According to the Country Competitiveness Index 2013 of the European Union, The Netherlands is occupying the second place, while Romania is the least competitive Member State. Compared to the previous edition of CCI2010, The Netherlands has dropt from the leader position, while Romania was taking the same last position (Annoni; Dijkstra, 2013). Further on within this section, several relevant indicators characterizing the socio-economic environment are analysed for both studied regions.

Comparing the two countries and the two analysed corresponding regions, it can be noticed that the GDP per capita PPS of the Bucharest-Ilfov has the same percentage of the EU average as in the case of The Netherlands and that the Province of Limburg is a less performing region than Bucharest-Ilfov.

The growth of GDP million PPS in 2013 compared to 2012 in the case of the Province of Limburg is of -0,18%, while in the case of the Region of Bucharest-Ilfov is of 4.3%. This indicator points out that the Bucharest-Ilfov region is the most developed region of Romania, but as a country hardly passes the half limit of the EU average (Eurostat, 2015a). Consequently, the Region of Bucharest-Ilfov is recording a dynamic growth compared to the Province of Limburg and the European average.

As regards the competitiveness of the regions, seven out of eight regions of Romania are placed in the last category of the Regional Competitiveness Index (RCI) 2013, while the Region of Bucharest-Ilfov goes into a superior category. According to RCI 2013 (Annoni; Dijkstra, 2013), the regions of The Netherlands are recognized as very competitive, with the Province of Limburg occupying the 17th place in the hierarchy of the European regions.

3.2. Sectoral structure

In order to have a clearer picture on the sectors of activity that contributed to the regional GDP of the Region of Bucharest-Ilfov, an analysis on the regional gross added value on activity sectors will be carried out.

The contribution of the service sector to the regional gross added value is significant and is quite constant in last twelve years at least. In the year 2008 service sector had

a contribution of 67% of the regional gross added value and it has managed to increase up to 71.61% in the year 2012 (National Institute of Statistics, 2015).

The services that experienced the most impressive growth rate in Bucharest-Ilfov by comparing the gross added value from year 2012 to 2008 are the 'financial intermediation and insurance' and 'real estate activities'. At the opposite side, the 'information and communication' services have decreased with approximately 10%. The service that registers a constant evolution is represented by the services that are mostly related to the public sector, namely 'Public administration and defence; social insurance of public sector; education; health and social assistance'.

Summing up, the hierarchy of the main service sectors in Bucharest-Ilfov, in terms of added value of the year 2012 are:

- Wholesale and retail; repair of motor vehicles and motorcycles; transport and storage; hotels and restaurants;
- Information and communication;
- Professional, scientific and technical activities; activities of administrative services of support services;
- Financial intermediation and insurance;
- Public administration and defence; social insurance of public sector; education; health and social assistance;
- Real estate activities;
- Shows, culture and recreation activities; repair of households goods and others services.

Compared to the Province of Limburg in terms of added value of the main service sectors, the common points are represented by the wholesale and retail trade; financial services; public administration; education; health and social assistance; and real estate. In the Province of Limburg education is placed on the first position as the service sector that has the most important added value (Izsak *et al.*, 2013).

According to the data provided by Eurostat (2015b), the unemployment rate in 2014 in the Region of Bucharest-Ilfov is of 7.2, similar to the one registered for the Province of Limburg of 7.4. In the period 2011-2013 both regions had an upward trend of the unemployment rate; as for the year 2014, the Region of Bucharest-Ilfov has managed to recover from the impressive fall to 8% associated to the year 2013. Closing the mines in the Province of Limburg in the 1960s had generated a minus of 10% of the jobs in Limburg (Izsak *et al.*, 2013). Moreover, due to automation the employment in agriculture has declined. The public sector is representative in the area as a result of the policies that were adopted by transferring public services to the region (e.g. the national office of statistics). Additionally, the industry was heavily promoted in the area, but also agriculture, wholesale and the public sector are representative. On the opposite side, there are financial and other business services with a small contribution of 12.4% of employment compared to the 29.1% corresponding to the national level (DG GROWTH, <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/limburg>).

3.3. Innovation system

In relation to the five major dimensions of the European Service Innovation Scoreboard⁵ (Hollanders, 2015), three spider diagrams were formulated: figure 1 is focused on the transformative power of service innovation; figure 2 is capturing the systemic functions; figure 3 is making an overview on the general socio-economic situation. The diagrams are presenting the performance of the two analysed regions compared to the EU level.

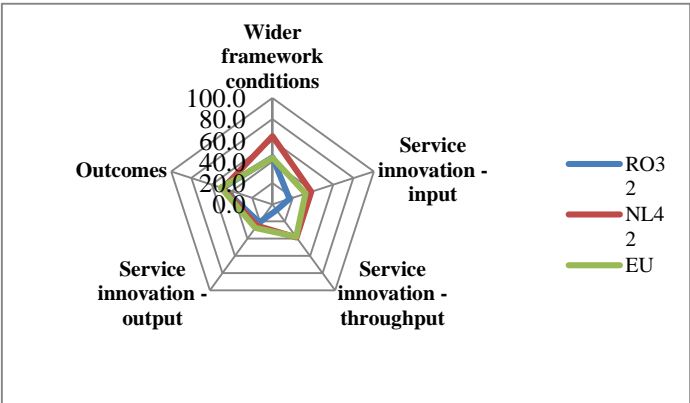


Figure 1. Transformative power of service innovation

Source: own representation based on the data extracted from the European Service Innovation Scoreboard (Hollanders, 2015)

In terms of ‘wider framework conditions’, the Province of Limburg (NL42) is performing very well overcoming the EU level, while the Region of Bucharest-Ilfov is less performant, but well positioned in relation to the EU level. The areas of ‘service innovation-input’ and ‘service innovation-throughput’ have to be seriously improved by the Region of Bucharest-Ilfov in order to reach the EU level.

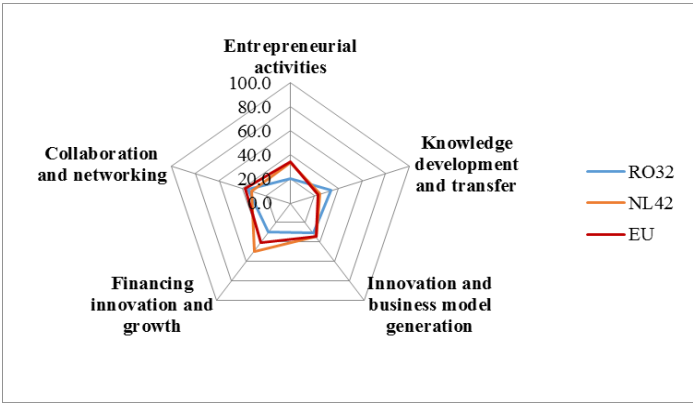


Figure 2. The systemic functions of service innovation

Source: own representation based on the data extracted from the European Service Innovation Scoreboard (Hollanders, 2015)

⁵ Several indicators are associated to each dimension, and more details about them are found in Hollanders, 2015.

In the case of the systemic functions, the comparing regions are quite similar and their values are positioned around the EU level. The Region of Bucharest-Ilfov is performing very well in 'knowledge development and transfer', while the Province of Limburg in 'financing innovation and growth'.

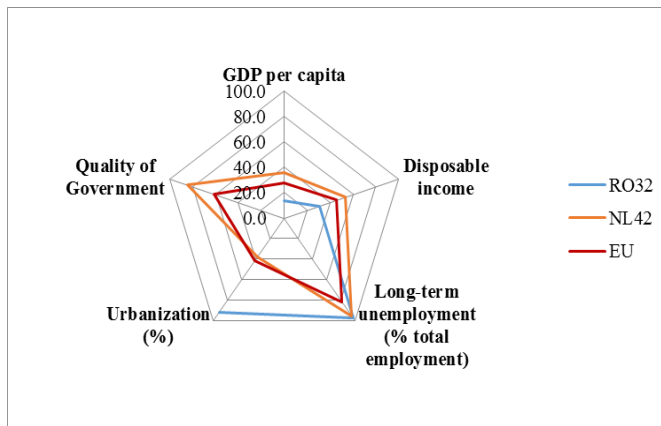


Figure 3. Overview on the general socio-economic situation

Source: own representation based on the data extracted from the European Service Innovation Scoreboard (Hollanders, 2015)

The benefits of the presence of the capital within the Region of Bucharest-Ilfov is visible when referring to 'long-term unemployment' and 'urbanization' with values overcoming the EU levels.

Analysing the two regions in terms of priority domains, several common priorities between the two analysed regions are noticed: materials industry; agro-food/biotech; financial and administrative services; and logistics. In terms of service innovation, both regions are signalling its importance and seek for new solutions in order to offer new experiences to their consumers.

4. Regional policy and policy mix on service innovation

4.1. Innovation policy and institutional background

The formulation of policies dedicated to service innovation is at its beginnings in both analysed cases; in the last decade innovation being a constant preoccupation of the regional stakeholders and its importance is increasing within the current framework programme 2014-2020. Recently, Gallouj *et al.* (2014) point out that the current trend of the innovation policy is turning towards 'service-focused' leaving behind 'service-friendly' and 'service-inclusive' approaches.

Both the regions of Romania and the provinces of The Netherlands, representing NUTS2 territorial unit, have no formal role, but they are important players in terms of organizing the spatial development and taking the corresponding responsibilities.

RTDI governance is multi-level and the national policy is leading in both analyzed countries. In terms of policy dedicated to RDI, Romania lacks one, and the regions have no role in RDI policy-making. The Ministry of Education and Research designed

and coordinated the RDI policies at the national level, but without inserting a regional focus. The role of the Ministry in regional RDI policy is limited as well as the RDI territorial coordination. Starting with 2006, the national RTDI policy in The Netherlands included the regional component by promoting the existing regional strengths and continued with the non-regional Topsector policy. This policy determines provinces to see their limited role as an instrument for broader goals for their region.

The regional executive body of the CDRBI is the Bucharest-Ilfov Regional Development Agency (ADRBI). Some of the responsibilities of ADRBI is to coordinate the strategy-building process of the Regional Development Strategy and Plan 2014-2020 and to implement the 2014-2020 structural and investment funds operational programmes in the region. Within the plan referring to 2014-2020 period, measures combining regional planning with RDI are included. It is expected that these measures will be performed jointly by the local authorities and the stakeholders following the purpose of integrating public and private investments. The RDI is playing a strong role⁶ within the 2014-2020 Regional Development Plan that is giving an impulse to the innovation policy trend.

The authority that is in charge with the design and the implementation of the national innovation policies is the National Authority for Scientific Research and Innovation (ANCSI). The national innovation policies are going to be expanded in the period 2014-2020 and the regional focus is expected to be emphasized. The interest for innovation at the regional level was captured, for the moment, through several indicators and by the development of a regional innovation instrument that took the form of the Regional Innovation Strategies (RIS) in early 2000s. The agencies of regional development in Romania made efforts to elaborate strategies of regional innovation corresponding to the timeframe 2007-2013, but they have remained only as consultative documents. In the particular case of the Bucharest-Ilfov, the RIS was developed by ADRBI in collaboration with CRIMM Foundation (Center for SMEs), the Innovation Relay Centre Romania and other foreign partners; but the document was not perceived as mandatory due to the lack of a formal framework for regional innovation (Aranga, 2012).

Overall, “Romania has no regional innovation authorities and no regional innovation policies...The regions do not have a role in innovation policy-making” (Aranga, 2012, 5), but, as previously exposed, isolated actions and measures have been taken.

As regards the Province of Limburg, the Provincial Government of Limburg is aware of the important role that both entrepreneurship and innovation are playing within the region’s process of passing from a mining society to a knowledge society. The actual innovation policy measures are mostly undertaken by the ‘Cluster Economy and Innovation’ unit of the Department of Economic Affairs of the Province of Limburg (Izsak *et al.*, 2013). Under the influence of the national innovation policy, the overall intention of Limburg is to pass from a general economic policy to a more explicit innovation policy. The Province of Limburg is making the shift from the traditional in-

⁶ ‘This is also a consequence of the fact that ‘the region's GDP per capita is higher than 90% of EU27's average. Therefore, 80% of ERDF resources need to be allocated to priorities such as RDI’ (DG GROWTH, <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/bucharest-ilfov>).

dustries to other type of industries, and its purpose is to become a European Technological Top Region (TTR Euregio). This latter target would be achieved through the cooperation between companies and knowledge organisations in Limburg and the neighbouring regions in Germany and Belgium.

The strategic interest of Limburg's policies for innovation has started with the Acceleration Agenda in 2005. Through this 'Acceleration Agenda' the Province of Limburg assumed the reinforcement of the economic growth, employment and prosperity in the region by establishing triple helix collaborations. The fundamental elements of the agenda were:

- Powerful clusters;
- Innovative SMEs; and
- A strong developed infrastructure.

An update of the Acceleration Agenda was conducted in 2008, and the Limburg Agenda was elaborated in 2007. The latter agenda was focused on how to achieve the directions settled by the Acceleration Agenda through innovation, mobility, international positioning, demographic change and integral regional development (Izsak *et al.*, 2013). Particular projects were carried out based on the proposals included in the Limburg Agenda.

It is recognized that Limburg has a high capacity of knowledge production, but improvements have to be made in terms of applicability. Consequently, the authorities are aware of the fact that collaboration between regional players in Limburg is essential for solving this issue. Sector-based clusters are part of the strategic programmes carried out by the regional authorities that support the creation of triple helix partnerships, campus-linking infrastructures and cross-sectoral activities. Collaborating with nearby regions and internationalization are also main current preoccupations of the regional public authorities. In 2012, 'Strategic Framework Policy Document on the Economy and Competitiveness' that is based on the cluster approach was formulated. Joint strategic programmes, such as 'KennisAs Limburg' are developed by educational institutions in Limburg.

Summing up, the innovation policy in Limburg is mostly related to clusters and campuses in areas that are related to manufacturing, chemical industry, health and agriculture. Related to these domains, services have started to pay a special attention for the regional stakeholders and several initiatives were promoted.

4.2. The regional policy mix for innovation

The purpose of the following section is to capture an overview on the service-inclusiveness of the systemic policy mix from various perspectives on service innovation in both analysed regions. Even though the expressed interest coming from the policy makers and practitioners for service innovation is high, legal and practical initiatives are still limited. Moreover, even limited in number they do not manage to connect and a systemic approach is a necessity.

Further on, the service-inclusiveness of the policy mixes adopted at the regional level in relation to the four approaches summarized by Janssen and Castaldi (2015)

is assessed. The comparative analysis of the two regional assessments goes towards the identification of the potential weaknesses of the regions and to the formulation of sustainable ways to solve them. Along the analysis, differences in terms of strategies related to the innovation policy mix between the two studied regions will be spotted.

Even though, particular regional innovation policies are not encountered in Romania, in time several regional innovation support measures were developed. Apart of the programmes related to regional innovation, several conferences and seminars were organized by ADRBI in order to increase the awareness of innovation among the regional stakeholders.

Formal regional innovation authorities and dedicated policies could be useful tools for both the analysed regions. Limburg offers an example of coherence in its actions, while Bucharest-Ilfov needs to develop an integrated picture of the local initiatives in order to obtain a better orientation of both public and private resources. The low level of correspondence between the plans/strategies established at the national level and the programmes supporting the regional development is a big issue that needs to be solved as it leads to a bad resource management and, further on to a fuzzy image on the utility of the results. Based on the policy instruments identified, the regional policy mix⁷ for the Region of Bucharest-Ilfov is captured in figure 4, and as for the Province of Limburg in figure 5.

Figure 4 is suggestive for exposing the most predominant approach that was developed in relation to the service-inclusiveness policies in the Region of Bucharest-Ilfov. The assimilation approach of service innovation, characterized by complementarities and interdependencies between the goods and services, is dominating in comparison to the other approaches. For the moment the situation is quite unbalanced highlighting that initiatives belonging to the pre-synthesis approach is a necessity as service innovation should be seriously treated by the authorities and stakeholders. A dominant assimilation approach, as in the case of Bucharest-Ilfov, can be systemic, as long as a well-balanced relation to other instruments in relation to the system functions is maintained and developed. Studies conducted by Rubalcaba (2006) and Den Hertog *et al.* (2010) enforce that introducing service-goods integration at the level of individual measures is a prerequisite for achieving a systemic policy.

⁷ Within the figure in parenthesis the innovation function/activity is referred with the following meanings: creating knowledge (K), innovation – oriented competence building and consulting (C), creating organizations (O), finance for innovation (F), and networking (N). Based on Edquist (2005) and Edquist (2013) in Janssen and Castaldi, 2015.

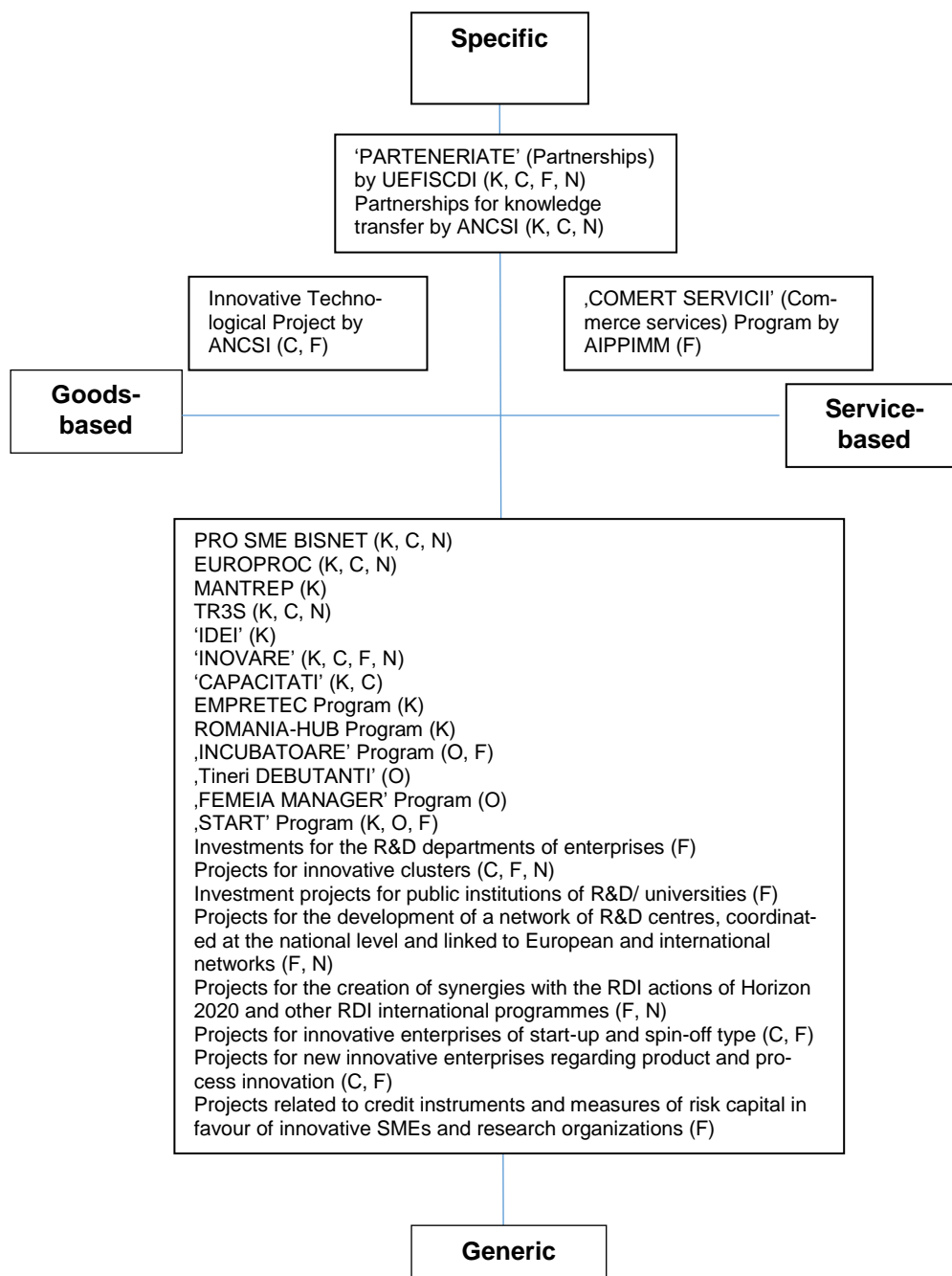


Figure 4. The regional policy mix for the Region of Bucharest-Ilfov

Source: own representation

The analysis on the policy mix indicates a dominant technological approach in the case of Bucharest-Ilfov, meaning that the service innovation is tangentially considered within the existing policy measures. Most of the policy measures are positioned within the sphere of 'generic' function with trends towards services and service innovation in several particular sectors.

A more balanced situation is encountered in the case of the Province of Limburg, where the initiatives regarding service innovation are more widely spread along the four approaches, as it can be seen in figure 5.

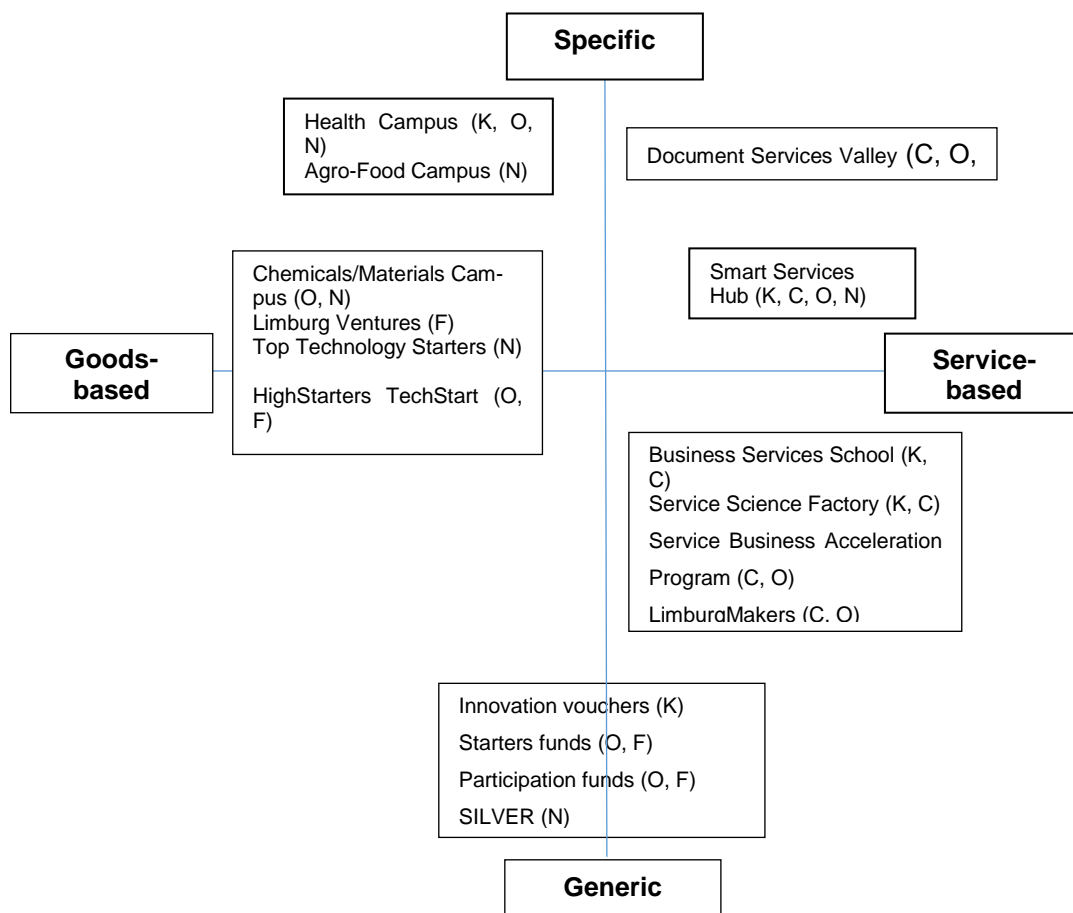


Figure 5. The regional policy mix for the Province of Limburg

Source: Janssen and Castaldi, 2015, 31

As exposed in figure 5, the Province of Limburg is going towards a service-inclusive policy mix, where initiatives included in the pre-synthesis approach are more and more visible. In the case of the Region of Bucharest-Ilfov the 'generic' function is the most overlooked compared to the others, while in the case of the Province of Limburg 'goods-based' function is intensively represented taking into account its historical profile. In the Province of Limburg a shift is recently producing by moving towards the 'service-based' function.

A precise service innovation strategy is not yet available (Izsak *et al.*, 2013) for the Province of Limburg, but various initiatives including service innovation (e.g. Document Services Valley, the Service Science factory, the Smart Service Hub, part of LimburgMakers programme) were implemented. Even though in the Province of Limburg are carried out initiatives in service innovation, they may become more visible if the connection between them is promoted and coherent regional innovation support programmes are developed.

The content of figure 4 together with figure 5 offers an overview on how the existing policies are dealing with services and which are their corresponding functions. As Janssen and Castaldi (2015) stated, the snapshot on the functions in relation to the approaches of policy innovation may offer insights for potential opportunities that make the policy mixes more systemic⁸.

The opinions of three out of the four experts that have filled in the questionnaire corresponding to SAT are showing that the policy in the Region of Bucharest-Ilfov follows a technological approach, meaning that the support to service innovation in the policy mix is lacking. Even though, the situation is not so optimistic regarding the inclusiveness of service innovation of the regional policy mix, lately several policy measures were adapted or designed to support services or service innovation. An evolution towards the demarcation approach could be noticed, where services and service innovation are supported mainly through vertical policy measures that are specific for individual service sectors.

The overall recommendation based on the SAT results for the regional innovation policy is to exploit the potential in service innovation, by developing a systemic approach on innovation, where interrelations between technological and service innovation are developed, and to better link manufacturing to service industries.

Enforcing the analyses results of the policy mix, the results of SAT show that the policy mix of the Region of Bucharest-Ilfov is dominated by the technological approach with some elements reflecting the demarcation approach, while the Province of Limburg is going towards a systemic policy. The ideal situation would be the systemic approach, where the goods-based and service-based innovation is combined, and leads to the creation of structures and incentives that optimize the functioning of the entire innovation system (ESIC, http://ec.europa.eu/enterprise/initiatives/esic/services/self-assessment/index_en.htm).

The policy mix in the case of the Province of Limburg comes up with measures that promote service innovation in industrial areas, and is going to develop horizontal policy measures that come up with a holistic vision by putting together service innovation and manufacturing. Compared to the Province of Limburg, the Region of the Bucharest-Ilfov has to evolve from the neutral measures that are mostly focused on technology to a holistic approach where service innovation is promoted individually or integrated in manufacturing.

5. Policy recommendations

A strong point of the Province of Limburg refer to its actively supporting for development and creation of new clusters and campuses; similar initiatives are also promoted within the Region of Bucharest-Ilfov, also through the recent projects dedicated to innovative clusters that are developed with the support of the European

⁸ More details are found in the section dedicated to 'Policy recommendations' within the current chapter.

funds under the coordination of ANCSI. A policy recommendation that naturally comes up based on the good practices encountered in the Province of Limburg for the Region of Bucharest-Ilfov would be to encourage and support the development of clusters within the region. Clusters are mainly developing within regions where the 'regional patriotism' has a relevant position, and the stakeholders have a common interest for promoting a sustainable regional society⁹. The main shortcoming that the Region of Bucharest-Ilfov has to overpass for sustaining clusters relates to the low belonging feeling of the stakeholders within the region.

Related to the subject of clusters, another relevant good practice that is met in the case of the Province of Limburg and that is also mentioned in several strategic reports regarding Romanian regions and Bucharest-Ilfov, in particular, is referring to the joint between governments, knowledge institutions and the business sector within a cluster. This collaboration is known as the 'triple helix' and is essential for the stimulation of service innovation within a cluster region¹⁰. The benefits of this kind of collaboration could bring visible results on the regional economy, consisting of new jobs, a broader range of study programmes, international networks and easier access to academic knowledge for small- and medium-sized enterprises. For example, the Kennis-As program developed in the Province of Limburg is expected to improve the regional economic structure and provide an attractive business climate. The experiences of this kind in the Region of Bucharest-Ilfov are only at their beginnings, as recently the potential partners barely knew each other (Cosnita; Guth, 2010). A recent trend highlights that the 'triple helix' model may expand to the 'four clover' model that is adding the catalyst organizations as the fourth actor (e.g. consulting firms specialized in technological transfer) (Cosnita; Guth, 2010).

Based on the necessity of networking of the companies in order to innovate, innovation policies should focus on the development of a proper way of communication between the small enterprises and the big companies. The small enterprises have the capacity to a more rapid innovation rhythm as they have a more simple organizational structure, while the big companies are benefiting of their capacity of scaling the business and of a more rapidly inserting of an innovative issue on the market. Interconnecting them, the big companies may use the innovation of the small enterprises and through procedures may generate innovation in bigger volumes and on a larger scale¹¹. Even though the SMEs are not coming with radical innovation, they may bring punctual innovative solutions. The big companies have the know-how of a proper innovation management that can make the product competitive at the global level. Consequently, a better communication between the small and the big compa-

⁹ Idea revealed by one of the interviewed experts.

¹⁰ A model region in Romania could be the Center Region where consistent innovations were registered, mainly in the area of IT. Within the region the triple helix model is under development where the collaboration between university, private sector and local authorities is promoted. The three actors are sharing the research data base in order to develop innovations that may enter within the market. A local tendency is that companies are developing their own centres for forming their employees, following the German model. The first university in Romania hold by a private company (Tenaris Silcotub) is in Zalau (Wall-Street, <http://www.wall-street.ro/articol/Companii/182645/tenaris-silcotub-a-investit-intr-o-noua-facilitate-la-zalau.html>) This model could spread also in the Region of Bucharest-Ilfov and the existing universities will have to face a challenging task if they are not starting to involve as much as possible the private sector into their activities.

¹¹ Ideas that were revealed while discussing with two of the interviewed experts.

nies could bring benefits for both sides, on one way the small companies are reaching the market and are benefiting of the success when scaling their innovation through a big company; and the big companies that are benefiting of their investment by using an efficient innovation management. One of the interviewed expert highlighted that the SMEs are more innovative than the big companies and the accumulation of innovation from the SMEs could lead to innovations of high impact.

An adequate research infrastructure (e.g. test facilities, living labs, technology transfer laboratories) and proper awareness activities may represent the starting point in the development of a stable environment promoting service innovation within a region. As stated in the draft Regional Development Strategy 2014-2020, these are also the intentions of the authorities of the Region of Bucharest-Ilfov that are expected to increase the regional competitiveness and consolidate the RTDI activities.

Overall, several general recommendations for both regions, but with variable intensity, that came up based on the discussions carried out with the Romanian experts, refer to:

- The development of competences to innovate among the stakeholders;
- The development of a network communication system through clusters;
- Integration between the education environment and the business sector;
- Active involvement of the local authorities in developing common projects with the university and private sector;
- Developing connections between big enterprises and suppliers by creating a platform for sustaining the suppliers and stimulate them to innovate;
- Offering models of innovation management systems.

Several punctual recommendations for the Province of Limburg implies that policy-makers increase the initiatives that promote the link between entrepreneurs and other firms, provide assistance in finding relevant partners and organize events that are focused on networking and matchmaking (Izsak *et al.*, 2013). Moreover, for the establishment of new research-based technological services in the Province of Limburg, the appropriate research infrastructure and testing laboratories have to be installed (Izsak *et al.*, 2014). Overall, the Province of Limburg may be seen as a role model for the Region of Bucharest-Ilfov in relation to its determination of consolidating clusters within which service innovation is promoted and manufacturing firms are persuaded to explore the potential of services.

Concluding, service innovation might foster at the regional level only by carrying out parallel measures that are focused on skills, financing sources and collaborative interactions (Izsak *et al.*, 2014). Competence building through innovation assistants, innovation awards, development of instruments for supporting firms in order to find new ways of commercialization of their knowledge are several main measures necessary to be undertaken by both studied regions.

6. Conclusions

Nowadays, the role and importance of services is registering an ascendant trend in both analysed regions, while manufacturing is decreasing. In Limburg the services are mostly associated to manufacturing (automotive, chemicals and material industry,

agro-food), while the Region of Bucharest-Ilfov is mostly dedicated to the services itself (IT, financial, real estate, professional services etc.). Services might bring rapid development of the society, but the lack of manufacturing might generate an instable society that cannot survive on long term. An intermediary solution that might generate evolution, based on a solid fundament, regards the stimulation of innovation within the manufacturing-services connection. The connection between manufacturing and services could be made within a company or between manufacturing and services companies. As service innovation is not associated to a particular department of a company and it spreads more rapidly than innovation in manufacturing, the stakeholders should allocate them a higher importance.

In terms of industrial focus, the Region of Bucharest-Ilfov is positioned as a referential region for information technology and communication, advanced technology, transportation and logistics, financial services, wholesale and retail textiles and apparel, biotech, education and knowledge creation, media and publishing industry, telecom, and real estate, while the Province of Limburg is centred on chemicals, medical devices, agro-food and horticulture, document management, logistics and specialised business services.

The common priorities of the two analysed regions are focused on materials industry; agro-food/biotech; financial and administrative services; and logistics; while the other areas mentioned in the case of a region are also represented in the other region, but their importance is weaker compared to their selected priorities.

The assessment of the policy mix of the Region of Bucharest-Ilfov points out the dominance of the technological approach and the tendency towards a systemic policy in the case of the Province of Limburg. Precisely, the Region of Bucharest-Ilfov is lacking the focus on service-inclusiveness of the policy mix, while the province of Limburg is moving towards achieving a service-inclusive policy mix.

The assessment of the service-inclusiveness of the policy mix of both regions has provided an overview on the policy measures dedicated to stimulating service innovation and is showing that the Region of Bucharest-Ilfov is following a predominant assimilation approach, while the Province of Limburg is developing measures associated to the pre-synthesis approach. For a proper development of the pre-synthesis approach in the case of the Region of Bucharest-Ilfov, a more equilibrated situation in terms of the innovation functions should be assured by the authorities developing policy measures in the area of innovation. The redundant support for the same function of the policy measures and the fuzzy complementarity between them are the major minuses that the Romanian authorities have to face when developing the policy mix centred on service innovation.

Developing modern structures of collaboration between various stakeholders has become essential for an efficient use of the specific resources corresponding to a region. Particularly, the authorities of the Province of Limburg have the aim of increasing the importance of certain types of services by linking them with other industries and developing collaboration structures. One main recommendation for the Region of Bucharest-Ilfov, based on the good practices encountered in the Province of Limburg, is to focus on supporting and creating clusters within the strongest and the most competitive areas of the region. The wide variety of clusters within a region needs to be avoided because, if not, the policy makers may have to deal with the dissipation of resources in various directions, without being performant in a particular

one. Apart of clusters, structures supporting businesses, such as science parks and business incubators, are recognized as having a positive effect on the economic development of the localities, and implicitly on the early stage of the SMEs development.

Generally, the focus of the innovation policies should be placed on creating the right framework conditions by developing knowledge infrastructure, innovative networking between SMEs, as well as clustering in those areas where the regional economy holds its strengths. A holistic approach for the stimulation of the transformative power of service innovation implies developing simultaneously measures to the company level; sectoral, business environment level; and the market level. A snapshot on several main support instruments at each of the mentioned levels is included within the report elaborated by European Commission in 2012, entitled 'The Smart Guide to Service Innovation'¹².

Before developing regional measures supporting innovation, including service innovation, a coherent innovation policy is required in the case of Romania, and implicitly at the regional level of the Region of Bucharest-Ilfov. Developing a coherent innovation policy is based on solving the dysfunctionalities of the public administration in harmonizing the strategical documents (Aranga, 2012), and dealing with the lack of connection between the budgets of the adopted strategies. In order to achieve this purpose, it is essential that the basic instruments necessary for the elaboration of policies to be in place¹³.

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¹² Design innovation clinics, supply-side innovation vouchers, innovation management support, facilitating access to finance, and service incubation centres are support instruments at the company level. At the sectoral level various support instruments are recommended, namely design centres, living labs, support to clusters, innovation assistance. The support instruments at the market level refer to regional awareness raising measures, incentives for cooperation between manufacturing companies and designers, demand-side innovation vouchers, public procurement initiatives (European Commission, 2012, 22).

¹³ This idea came up based on a discussion with one of the consulted experts.

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