

## The synergies influence of clustering and smart specialization strategy: Do they really stimulate entrepreneurship and regional development?

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### Abstract

This paper reveals on the significance of clustering concept and smart specialization strategy as an effective tool that stimulates entrepreneurship and creates regional value. The worth of linking different firms, people, and knowledge at the regional level- are one of the ways of making regions, organizations and institutions more innovative and competitive. The mode of a classifying clustering impression to be the voice of smart specialization for developing strategic goals and criteria related to regional growth. Thus, the result of this study shows clustering in addition to smart specialization strategies are powerful instruments to foster industrial competitiveness, institutional innovation, and provincial growth due to their intrinsic competence. Both clusters and smart specialization are gaining its prominence in the EU's regional policy discourse, owing to its role in the new program period of the EU structural policy from 2014 to 2020. This paper suggested some recommendations based on the highlighted research assumptions that the added value of the regional knowledge development process will lead the regions and enterprises to achieve their competitive advantages through the transfer of specific individual knowledge to the collective knowledge, and vice versa.

Keywords: clustering, entrepreneurship, regional development, smart specialization strategy.

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## 1. Introduction

Nowadays the synergy effect between clustering and smart specialization strategy is the cornerstone of forming unique entrepreneurship and innovation centre in the region connected to regional economic growth. It aims at exchanging knowledge and experience concerning the effectiveness and efficiency of supporting innovative entrepreneurship at national levels in the context of an implementation of smart specialization strategies. Henceforth, the present debate on regional innovation systems, research, and development strategy signify one of the most communal policy approaches to address the strains between globalization and localization. Afterward, there is needed a procedure that produces the proper conditions of competition and co-operation to support the emergence of world-class, specialized clusters that empower to achieve agglomeration effects. Accordingly, nations and regions are under stress to enhance competitiveness as well as to maintain its sustainability to fit with the Horizon 2020 program. This paper discusses the idea of clusters and smart specialization strategy as an effective tool for improving regional and entrepreneurial competitiveness; in order to highlight the significance of linking different firms, people, and knowledge at a regional level- are one of the ways of making regions, businesses more innovative and competitive. For e.g. organizations can stimulate the entrepreneurial spirit of their staffs and associates, by offering guidance and services in a coherent manner with business needs. Therefore, this study tries to identify why should clusters be part of smart specialization? In this regard, the smart specialization concept has been utilized as the guiding concept for developing strategic goals and standards referred to regional economic growth. On the other hand, the ideas of clustering have emerged as a vital force in economic development and strategic preparation. It fascinates the attention of numerous policy makers, academicians and researchers from developing and developed countries. As a result, the importance of clusters has been varied with the concept of smart specialization, a regional growth scheme that tries to escalate the efficiency and strength of economic organizations. Hence, this paper attempts to analyse the idea of both cluster and smart specialization strategy that has a synergistic impact for stimulating regional economic growth and entrepreneurial competitiveness. The background of this research investigation embraces various approaches and models concerning the synergistic effect of both cluster policies, initiatives and Smart Specialization Strategies (S3) that focuses on productivity and innovation as key drivers of regional as well as entrepreneurial competitiveness in one way; and fostering regional embeddedness to capitalize the advantages of proximity in another way.

Kozhuharov (2015) argued that “Clustering” concept and their success in economic terms can be addressed as a form of economic, political and educational cooperation between different in structure, scope and activity organizations, which placed mainly on the mechanisms for the realization of sustainable and intelligent growth of an enterprise inspired by clusters and their networks. Similarly, Markkula & Kune (2015) contended that “Smart Specialization” is the active orchestration of the regional ecosystem around concepts such as knowledge co-creation and exploitation, opportunity exploration, and capacity building. Correspondingly, the European Commission stated ‘Smart specialization’ is the concept of the new innovation policy of the European Union, which is planned for promoting the efficient and effective use of public investment in research. Since the aim of the EU is to stimulate regional innovation in order to achieve economic growth and prosperity, through S3 that will allow regions to focus on their strengths (European Commission, Directorate-General for Research and Innovation, 2015). From the theoretical perspective point of view, in the era of globalization and industrialization, clusters and smart specialization strategies are viewed as a source of continued regional development and influential competitiveness. Both cluster policies and smart specialization strategies are policy approaches with a position-based dimension, aiming at exploiting advantages of proximity to promote national economic development and competitiveness. Since smart specialization is gaining its prominence in the EU's regional policy discussion, due to its role in the upcoming new program period of the EU structural policy from 2014 to 2020. It is presumed that this concept will probably have a considerable impact on the design, governance and conduct of regional policy in many European regions, that will enable to increase the territorial growth and entrepreneurial

competence (EC 2013; Benner, 2013). These aspects are interpreted to show the potential implications of new RIS3 strategies (Research and Innovation Strategy) regarding clusters and vice versa, as well as their role as policy instruments (Del Castillo, Paton & Saez, 2013).

Research shows that the clustering of activities has been proven to be very effective, and can enable rapid growth and economic success of the firms and enterprises involved in such a cluster. Regarding these context conditions and the role of regions in competitiveness and innovation, clusters have become progressively a spreading and widening phenomenon all over the world. In order to prosper, regions require the development of attractive places to work and live – and an enabling factor is experimenting with the regional concept of innovation platforms to address their clustering and smart specialization spearheads. Thus, through spreading entrepreneurship development regions make more effective use of the diverse societal dynamic models available for improving their innovation processes and their societal services. The influence of clustering and S3, in their diverse roles /strategies, are especially important due to their increasingly active initiatives that boost an entrepreneurship and regional development at the interface of universities, industry, public authorities and citizens (Markkula & Kune 2015). Conversely, both the concepts and synergistic effects - such as knowledge co-creation and exploitation, opportunity exploration, and capacity building have become important enablers of organizational and regional innovation system. This paper discusses whether cluster initiatives and the leveraging effect of S3 will enable regions as well as enterprises for maintaining smart and effective regional innovation networks (entrepreneurship).

### *1.1. Overview of Clustering and Smart Specialization Strategy Approach*

The presence of cluster approach has increasingly been identified as an important approach, especially for enhancing and spreading the regional and entrepreneurial competitiveness to thrive and survive successfully in the world market. The aim of this paper is to address the question, whether and how clustering strategy could be empowering to boost regional and organizational competitiveness by finding appropriate niches in research i.e. by applying the ideas and priorities of smart specialization. From the time, when the role of clusters has become an explanatory element of regional economic development that has largely depict on two theoretical assembles. Out of them, one is "industry cluster" and the other one is "systems of innovation". The literature on the cluster may be drawn back to Alfred Marshall's identification of external economies in "localized industries"- where resources are easily accessed and better data is promptly usable. 'Industry Clusters' are being clinched by enterprises to compete collaboratively, to gain competitiveness to meet the global needs (Vazquez & Vaillancourt, 2008).

The main roles of clusters are as follows:

- (i) To bring together the similar companies located in geographical areas,
- (ii) To develop initiatives,
- (iii) To promote growth.

Actually, the cluster concept was particularly triggered by Porter, Enright, and several other economists in a different period of time where, their keen intention was to improve the firms' competitiveness that stimulate the regional economic growth (Das, Gulati, Sarkar & Banerjee, 2008). According to the contemporary father of the concept Michael Porter (1998), 'cluster' can be defined as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related sectors and related institutions (e.g., Universities, R&D institutions, enterprises and trade associations etc.) in areas that compete, but also cooperate." Meanwhile, the main principle of smart specialization concept exemplifies a set of challenges, tensions and opportunities for the position of universities well as enterprises in regional innovation strategies. These potential issues have been discussed in this paper with the concept of both cluster and smart specialization strategy a

dual perspective, with the evidence of theoretical approach and policy perspective. In order to justify, this paper describes briefly the traditional cluster approach and cluster initiatives, the relationship between both the approaches that mutually reinforces and share common elements contributes one another in order to improve regional and organizational effectiveness. The regional and organizational (entrepreneurial) competitiveness are understood in this paper in addition to spreading excellence and widening participation of business and academic and research institutions by how it relates to the necessities of the society and economy. Configuration the policy context point of view smart specialization strategy (S3) is a sophisticated policy design, namely 'Smart Specialization' for facilitating Europe's social market economy in the Europe 2020 strategy. This innovative policy strategy aims at stimulating the structural weaknesses through progress in three mutually reinforcing priorities:

- smart growth and entrepreneurial development based on knowledge and innovation;
- sustainable growth, promoting a more resource efficient, greener and competitive economy;
- inclusive growth, fostering a high-employment economy delivering economic, social and territorial interrelation.

Consequently, it is necessary to highlight that conferring to Pontikakis, Kyriakou and Van Bavel (2009) the idea of smart specialization comes from the reflection generated around the innovation "gap" between Europe and the U.S. during the economic crisis. Likewise, Varblane (2009) pointed out that the impression of the smart specialization policy came into consideration when there arise a threat that a large part of EU, e.g. new member states, would be left without the possibility to develop their R&D capacities. Then, as a potential solution, the EU think tank "Knowledge 4 Growth" (K4G) has suggested the idea of "smart specialization" is to guarantee an efficient utilization of public finances. Established along the understanding of regional strengths, regions are expected to concentrate resources on a few key priorities rather than spreading investments thinly across areas and job sectors. Though the role of clusters that increase firms' competitiveness and territorial development, but we cannot ignore the cluster initiatives too. Solvell, Lindqvist and Ketels (2003), specified that cluster initiative can be realized as a planned effort that concentrated on the escalation of regional development and fights through the participation of cluster companies, government, and/or research community. On the other hand, Andersen et al. (2006) and Solvell et al. (2003) have formulated, clusters and cluster initiatives are supported by governmental and regional institutions in a number of countries, mainly in the following form: Where – (i) informational support and education by means of "Guides", seminars, and conferences, (ii) grants supporting mapping of potential clusters, (iii) grants supporting the implementation of selected projects.

Furthermore, it is crucial to mention that both the cluster and the cluster initiative are topic to changes in the competitive environment. Granting to the researcher Rosenfeld (2002) and Swann Prevezer and Stout (1998), clusters are seen to evolve in a kind of life cycle consisting of embryonic, growth, maturity and decline stages. On the other hand, Del Castillo, Barroeta and Paton (2011) stated that these stages determine their role and their reach in policy and the regional dynamics that has a great influence on territorial competitiveness enhancement. Thus, this paper offers a critique of the empirical literature and some common distinctive elements and characteristics of cluster initiatives and S3 priority practices and synergistic leverage focus and relationships for successful entrepreneurs and regional growth. It attempts to present the concepts and the approaches of firms' strategies, designs which are beneficial for organizational network building, developing human factor (Human resources development), technical infrastructure expansion and enhancing knowledge resources by developing cooperation within the regional economic growth (effective support) and good governance (Government initiatives) approach. Furthermore, this paper states that enterprises and regions are capable of achieving distinctive benefits of competitive advantage through applying clustering strategy and smart specialization strategy that facilitate and enable entrepreneurs' and regions to sustain and to strengthen their business competency.

## 2. Research Methodology

This study mainly addressed the combination of both empirical evidence and inductive reasoning. Empirical argument depicts the methods of obtaining information and data (knowledge). Normally, the inductive reasoning displays the degree of support in the sort of probabilistic reasoning and the foundation of most scientific theories founded on the contemporary approaches of cluster strategy and smart specialization strategy.

The prime goal of this research is not analyzing (Porter's) natural clusters' activities. So, it stresses primarily on those clusters concepts, which can be classified as having a "cognitive development", i.e. clusters, which are consciously managed and organized (entrepreneurial spirit). In another way, the reason for the narrowing definition is accepted in the fact that it is possible to compatible with the conceptual reinforcements of the smart specialization strategy (S3) approach, which is a programmatic framework to guide cluster development policy. Clusters and S3 share many similarities in their rationale: For example, both cluster and smart specialization (a) emphasis on efficiency and innovation as key drivers of the region's and business competitiveness; and (b) raising regional embeddedness with a view to capitalize on the advantages of proximity. In order to comprehend the study within the specified time frame, the empirical phase of the learning has been done on the basis of different academic expert's opinion under the EU research and innovation policy framework. The comparative study has been performed on the basis of preliminary research undertaken by European Commission (EC) and EU Horizon 2020 plan. Ultimately, the results of this study manifest the approach of cluster initiatives and goals of smart specialization strategies, synergies between their diverse priorities and aspects that simplify the regional growth and entrepreneurial (innovative) competitiveness.

### 2.1. Results and Discussion

This study was conducted to explore the potential contribution of Clustering and S3strategy and its distinguishing features to gain some competitive advantages and enhance regions as well as business' capacity and presentation in relation to the implementation of smart specialization strategies (priorities, elements, basic aspects).According to the findings of an evolutionary theory of cluster and S3 policies, have normally given a comparative perception to us about the conceptual aspects of both the cluster and S3 strategy. Which show the key priorities of entrepreneurial and territorial development that sustain a big impact on enterprises and regional success and enhance competitive advantage. The illustration of Figure 1 depicts that clustering phenomenon and smart specialization strategy as a key tool which fosters sustainable operational (governmental and regional) learning and improves the regional business performance due to the presence of cluster elements (communication, technical infrastructure, government initiative, entrepreneurial spirit) and priorities which complement and facilitate the community participation or promote and connect the interpersonal relationships.

Alternatively, S3 strategies advantage force regions and countries to take challenges and process it such as help policy-makers for institutional growth, identify domains and activities for potential specialization, emphasize the vertical logic of prioritization, arrange and favour some R&D and technological activities, recognize desirable areas for innovation policy intervention within the region which leads to promote innovative capability and business growth due to their intrinsic competences.

### 2.2. The Synergic effect of Clustering and Smart Specialization Strategy stimulate Entrepreneurship and Regional Development

Concerning synergistic impact of clustering and smart specialization strategy, Figure 1 clarifies that if the distinctive characteristics and unique competencies of cluster combine together under one roof, then the enterprises (organizations & institutions) by smart specialization can to find a research

"niche" on the global market that corresponds to the specific needs of the national public or private economy and meets the demands of international economy as well, i.e. is aligned to the levels brought out on the Figure 1. Therefore, based on the above mentioned discussion, it can be justified that clusters and smart specialization strategy act as an elixir for facilitating regional growth and entrepreneurial (strengthen innovative initiatives) tactical and knowledge production competitiveness; in order to highlight the significance of linking different firms, people, and knowledge at a regional level- are one of the ways of making regions, businesses and organizations more innovative and competitive. According to Grillitsch (2015), smart specialization, is 'a process of priority-setting in national and regional research and innovation strategies in order to build "place-based" competitive advantages. However, more specifically it is required to note that the concept of the cluster can be understood as a specification (instrumental approach) within the theory of smart specialization, which is emphasizing the following elements from both of the policies (Del Castillo et al 2013a). Such as it is:

- From the *Global context* point of view: clusters are good channels for both the internationalization of enterprises (especially SMEs) and identification of global trends.
- From the *Specialization patterns* point of view: clusters are an indicative reflection of the current and potential regional specialization pattern and cluster initiatives are channelled to reach (access) the critical mass they represent ☐
- From the *Related variety* point of view: cluster initiatives facilitate innovative discovery initiatives, where universities and research institutes can stimulate the entrepreneurial spirit.

Therefore, the key way to understand the emergence of the cluster is to understand the importance of learning and knowledge creation in the economy, which is relevant for what we call low-level as well as high level technology areas. As clusters develop regional proximity among firms, institutions, promotes learning and competence building. Where they will attract similar and related firms because they want to exploit the common knowledge base and take part in the interactive learning that takes place. It shows that how high-quality human resources, technological knowledge advancement, the infrastructure of transit and communication, government's guidance and the chances available has a great influence to strengthen the competitive advantage and to increase the regional development (Saha & Saha, 2014).

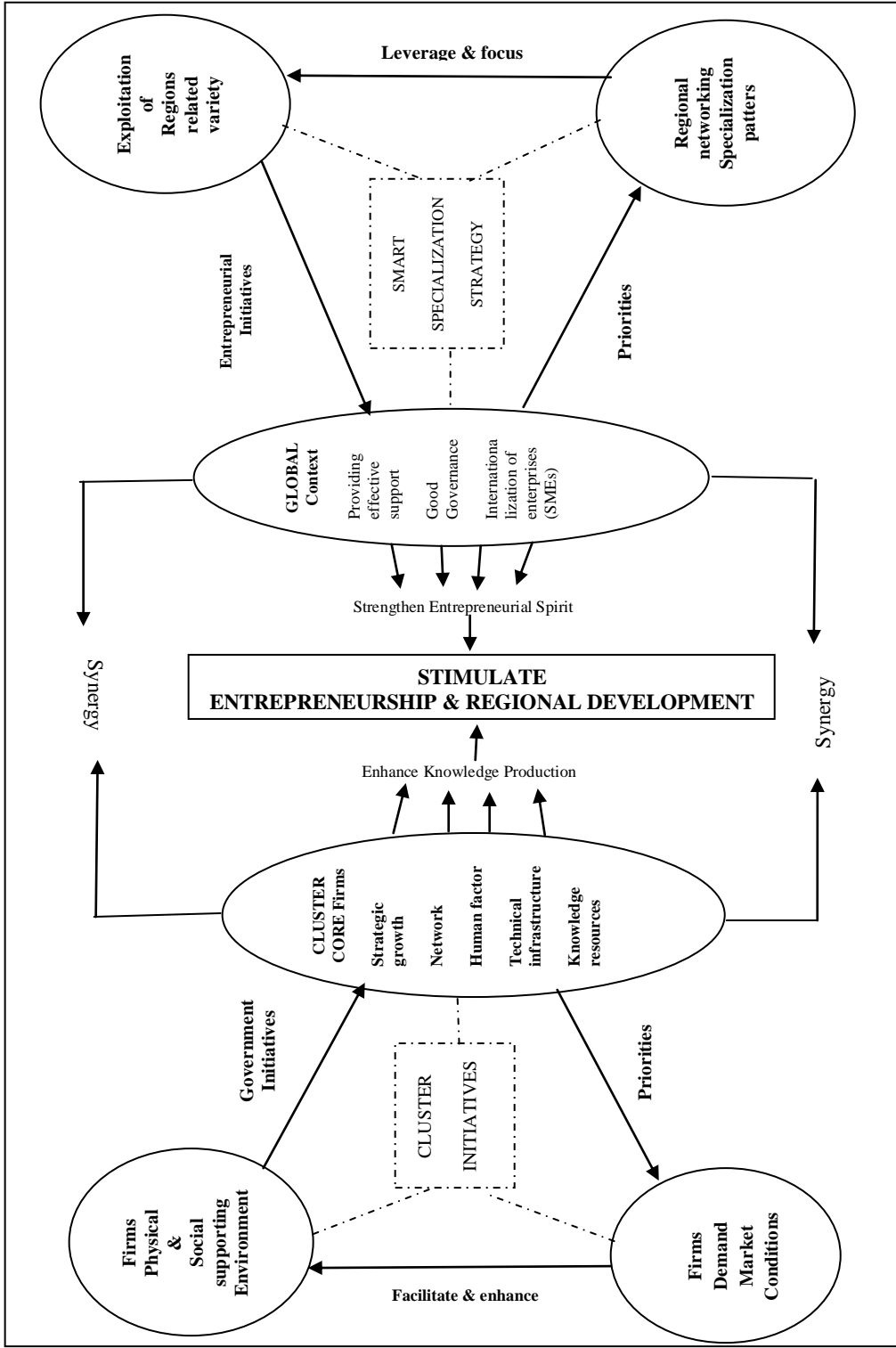


Figure 1. Thematic model of Entrepreneurship & Regional development in relation with Clustering and Smart Specialization Strategy

Applying such kind of thinking to the issue of clustering and smart specialization strategy(S3) leads to the formation of following three important research assumptions or RAs such as : **RA1**- which states that Cluster and S3 are the key factors in regional knowledge production system improvement; **RA2**- in which people, firms individuals as well as government's linking and networking proficiency develop through their knowledge Skills Abilities (KSAs) and initiatives that create value and strengthen regional efficiency (creativity); **RA3** - which expresses that organizational and entrepreneurial learning are used to strengthen the entrepreneurial spirit (professional skills), and Government initiatives (Strategic growth & technical infrastructure development) that leverage and focus (through Smart specialization priorities) as well as facilitate and stimulate (through Cluster initiatives and policies) entrepreneurship and regional development, i.e. (strengthen entrepreneurial spirit & enhance knowledge creation process). In order to justify the strategic role of clustering and S3, researcher Kurowska-Pysz (2016) stated that clusters are a form of a partnership aimed at developing cooperation between enterprises, but also local governments, academic institutions, and business environment institutions, located in immediate geographical proximity and representing related sectors. Similarly, Blazek and Csank (2015), highlighted that the regional, institutional environment under S3, plays a fundamental role in determining positive linkages and interactions between various actors within the innovation process and Kireyeva (2016), complemented that clusters also provide an excellent platform for solving a range of parallel and distributed aims for “start-up accelerators”.

Debating this topic on regional development it is necessary to mention Nae and Grigori's (2014), idea, where they have revealed that an invention system is also a dynamic social system and a primal activity of regional growth in the regional innovation system (RIS) that behave as a normative and descriptive approach in order to capture the way technological development takes place in a territory. According to their study to increase the innovative capacity of all types of regions, it is generally accepted that the innovative performance of regions is improved when firms are encouraged to be innovative best by interacting with various support organizations and companies within their region.

### 3. Recommendation and Conclusion

It is essential to highlight the fact that the appearance of cluster concept as well as the significance of smart specialization strategy has been concerned with the perception of entrepreneurial and regional economic development strategy. It seeks to increase the efficiency and effectiveness of cluster initiative and smart specialization strategies, priorities and classifications, firms behavior, their physical and social environment , demand market conditions constitutes a leading concept which acts as a vital stimulant for the individual and group competency development in relationship with the cluster development and smart specialization strategy and groups competency development strategy in order to accomplish sustainable entrepreneurial and regional enactment growth. In this study, the observed assumptions / propositions show that the key dimensions of the present business environment focused on the right kind of cluster core firms' initiatives with right kind priorities in order access proper KSAs, the innovative capability of the distinct regions and technological expansion. Where, the presence of clustering approach plays a key role in enhancing capacity and building learning environment by the emergence of regional knowledge creation process between the individual, group, firms (nationally and internationally) to compete in this ever changing dynamic world.

Nevertheless, from the investigation, it has been observed that to a certain extent both the approaches have significance all over the world to face today's challenge. It is not only to improve the regional and enterprises competitiveness but also to find out the most effective way how they can enhance their existing resources competitiveness and survive in this dynamic world. Therefore, this research suggested that - clustering approach could be a very stimulating and sophisticated approach for the new EU member states, territories their research institutions, universities, small and medium enterprises with the intention of creating new business opportunity with worldwide competency.



Consequently, the smart specialization strategy could be supported by the academia and business to provide assistance in developing entrepreneurial essence and leaflets design and programs deliver, to ensure that young generation (future entrepreneurs) have the right skills and transversal competences. Even though there remains some gap in the new S3 strategies, i.e. lack of engagement with private sector actors (public sector lead); insufficient analysis of regional assets and possibilities leading to unrealistic expectations; inappropriate transfer of ideas and models from the prototype regions into others; tendency for regional strategies to chase the same sectors and technologies; lack of attention given to trans-regional aspects. Yet this study highlights the essential goals of smart specialization, when clustering approach, providing support for the growth of human resources within the firms, institutions and in an organization that enables them to enhance their business (entrepreneurial) performance and to achieve the competitive advantage.

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