

American Journal of Humanities and Social Sciences Research (AJHSSR)

e-ISSN:2378-703X

Volume-4, Issue-11, pp-160-165

www.ajhssr.com

Research Paper

Open Access

The model of Regional Development based on Innovation. The case of Alexander Innovation Zone S.A.

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ABSTRACT: This paper, provides the role of innovation to the regional development. The most important factors and stakeholders for the success of regional development are presented, such as industries, SME's and large companies, which do business in a specific region, local educational organizations, universities, institutes and research centers, which can provide the ordered scientific knowledge for the businesses to scale up and the Government, especially the local Authorities, which can support and boost the efforts of the other stakeholders to grow up. The collaboration of all these stakeholders based on the "Triple Helix model", which is analyzed on the second part of this paper.

In the third part of this paper is presented and described the Alexander Innovation Zone S.A., which is established in Thessaloniki, in Northern Greece, by providing its definition, scope, vision and actions.

Finally, some suggestions are presented for the Innovation zones in generally and for the regional development.

Keywords: regional development; triple helix; innovation; development; stakeholders; government; educational organizations

I. INTRODUCTION

The new growth model of European Union is based on smart specialization of each region which is affected by the determinative role of regional stakeholders and the financial growth of those regions (Ketikidis and Todeva 2017, p. 57). According to Foray et al. (2009), the purpose of European Smart Specialization is to boost the regional economic growth via inter-regional complicity, by the advocate of entrepreneurship and innovation. Innovation is the implementation of new processes and ideas for the creation of new product or to an organization, boosting its status and productivity (Masri et al 2018, p. 686). Innovation, as a theory and process, is up to date for the existence of humans, due to the fact that in every period of human history there have been peculiar and different needs, which should be covered by the invention of new technologies. According to Huggins and Thompson (2015, p. 2), innovation features in growth of regional development since it is a very important factor for the regional development by enhancing it and, supplementary, by boosting its competitiveness, leading to its economic growth (Ketikidis et al 2010, p. 317). An another significant factor for the regional development is also the location of a region, due to the fact that the regional development depends on the financial, political, geographical and scientific situation of any region (Capello and Nijkamp 2009, p. 1). Furthermore, universities and research institutes have a substantial impact to the regional development because of their scientific profile and their interface with new technologies. However, one the most important factor and the core of regional development is the business "ecosystem" of every region which is also a vital stakeholder. Since 2016, most of the developed countries have established a new type of interaction and communication between government and businesses, based on new technologies, and especially the internet, by forcing the companies to use e-businesses (Koch 2017, p.8). According to this reality, Government (and Local Authorities) is also a significant stakeholder of a region and contributes influentially to the regional development. This model demands the cooperation and the interaction between the above stakeholders for its success and it is based on the model of "Triple helix". "Triple helix" model is exactly the conjunction and interaction between the Government, the Business "ecosystem" (Companies) and the Educational Organizations (Universities and Research centers) (Ketikidis and Todeva 2017, p. 69).

II. STAKEHOLDERS OF REGIONAL DEVELOPMENT

2.1 Companies

Companies which are located in a region, especially companies related to technology, enhance the growth and the development of it, providing numerous of advantages. According to Deakin et al (2018, p. 104), due to digital transformation, which is prevailed the last 20 years, most of the businesses-companies have been transformed into e-businesses and e-companies, and supplementary, they have been launched new e-businesses based on the implementation of new technologies. On the one hand, the leaders of this type of companies were supposed to be the start-ups (Anokhin et al 2019 p. 104), due to their relation with new technologies. However, on the other hand, there are some scholars who support the opinion that only large firms, which have a mass production, the appropriate equipment and numerous clients, can follow the requirements of introduction and implementation of new technologies (Anokhin et al 2019 p. 104). Start-ups, trying to be more competitive to those large companies and to overcome them, have created “Clusters”, which are conjunctions of start-ups with common perspective, which is usually the technology and innovation (Anokhin et al 2019 p. 104). The European Secretariat for Cluster Analysis (ESCA) refers to its recent report that the organizations-members of a cluster ought to accomplish a cooperation and networking among them, but also with the other stakeholders and partners. Moreover, they should try to transfer technological expertise and to collaborate in order to upgrade it. Finally, they have to promote their clusters and clusters’ locations, through the media (Kergel et al 2014, p. 3).

2.2. Government

According to Ascani et al (2012, p. 13), during the last decades there was a tendency for decentralization, due to the reason that the local authorities are more effective and can boost the region’s economic growth and development. The State, as the Central Government, and Regions’ or Local Governments should motivate businesses to invest on their regions and countries by providing some incentives through the taxation policy, by reinforcing the region’s and country’s business “ecosystem”, by enhancing the smart specialization and by the creation of fundamental laws and regulations for increasing the level of competition between the region’s industry and other industries (Porter 1996, p. 89). Furthermore, Central governments may also confirm and adjust their macroeconomic policy in order to re-sort and not eliminating responsibilities and roles in their multilevel state-government (Porter 1996, p. 89). However, both top and decentralized Governance provides a plethora of advantages and disadvantages which are able to increase or decrease the productivity and, as a result, the regional development (Topaloglou et al 2019, p. 16).

2.3. Universities and research institutes

Universities and research institutes are together an important stakeholder for the regional development and as significant element of the Triple helix model since they can provide their technological expertise to be implemented by the industry (Ketikidis et al 2016, p. 383). For upgrading their outputs, fame, targets, results and value, they should obtain an entrepreneurial and innovative orientation, depicting to the updating technological requirements (Ketikidis et al 2016, p. 388). According to the Triple Helix model, institutions, such as universities and research institutes, of a region, ought to interact and collaborate with the local government and local industry, creating a sustainable situation in that specific region (Todeva et al 2017, p. 9). Although in the last years Research and Development departments aimed to absorb their knowledge and to overflow it, nowadays they should follow a diverse strategy based on the interaction with market needs, enhancing the region’s economic growth and extroversion (Ketikidis et al 2010, p. 325).

III. THE TRIPLE HELIX MODEL

The “Triple Helix model” is described as the collaboration between industries-companies, government and research centers-educational organizations (Kalenov and Shavina 2018, p. 1). All these collaborators interact to each other in specific fields such as innovation, new technologies and creative knowledge. More specific, educational organizations-research centers provide their creative and innovative knowledge to the government and vice versa, industries should interchange their implementation of new technologies with educational organizations which may provide and as a result, Governments in cooperation with educational organizations-research centers can provide their outputs based on innovation to the industries (Kalenov and Shavina 2018, p. 1).

According to Liu and Cai (2018, pp. 4-5), Triple helix model includes other three types. The first one is the “balanced model” which is exactly the model described above based on the cooperation of all stakeholders of triple helix, whose outcomes are innovative creations, products and services (Ranga and Etzkowitz 2013 p. 239). An another type is the ‘statist model’ where educational organizations-research centers and industries are controlled and supervised by Government and Local Authorities through the provision of the appropriate resources to them for producing innovative outputs (Liu and Cai 2018, pp. 4-5). The third type is the ‘laissez-fair model’ where all these three stakeholders act individually and there is not an interaction between them (Liu and Cai 2018, p. 4). All in all, “Triple helix model” despite the fact that includes three types, is a new model with an additional stakeholder called “Quadruple Helix” (Carayannis and Campbell 2009, p. 201).

IV. ALEXANDER INNOVATION ZONE S.A.

4.1. Definition of an Innovation Zone

First of all, it should be delineated the definition of an Innovation Zone. According to [thessinnozone](#), “An Innovation Zone is an area reserved for the establishment of innovative businesses and research entities, engaging in rapidly-developing innovative activities, relying mainly on synergies, thus contributing to the economic development of the wider region”. The main target of Innovation zones is to enhance the economic growth of a region by attracting investment, both from their countries and from abroad, which are related to new and innovative technologies and their implementation ([thessinnozone](#)). For the success of the purpose of Innovation zones, it is necessary their members, innovative companies and research centers, to collaborate and cooperate to each other, under the “umbrella” of a low taxation and financial support from financing tools ([thessinnozone](#)).

4.2. An Innovation Zone in Thessaloniki

However, an Innovation zone is established in specific regions which satisfy the requirements and the appropriate criteria. Thessaloniki is the second biggest city in Greece and the Capital of the region of Central Macedonia, which is located in Northern Greece. The capacity of Central Macedonia region is about 1.874.590 citizens (Topaloglou et al 2019, p. 5). Thessaloniki is located in a strategic position of Southeast Europe as it is a prominent landmark due to its port which is one of the biggest in Balkans and in Southeast Europe and an important trade center-gateway for the southeast Europe and Balkans (Topaloglou et al 2019, p. 5). In addition, in Thessaloniki, there is a great deal of Universities, educational organizations and research centers, most of them are some of the most important in Southeast Europe, additionally to the significant startups, SME's and large companies which are related to new technologies. Besides, the outputs of new technologies and research and development are the most important factors for the regional economic growth and their competitive status ([thessinnozone](#)).

4.3. The Alexander Innovation Zone S.A.

Alexander Innovation Zone S.A. (A.I.Z. S.A.) is a managing organization which promotes and organizes the Thessaloniki Innovation Zone. As an organization it was established at 2006 and it is supervised by the Greek Government, more specific by the Ministry of Interior Affairs. Since 2006, it has been achieved to create the Thessaloniki Smart Innovhub, which is an incubator that turns the business plans and innovative ideas into start-up companies. Moreover, for the investment and business plans which are created and implemented into Alexander Innovation Zone S.A., there is a 5% additional funding based on the recent investment law. As an organization which promotes, boosts and supports innovative ideas and business plans, Alexander Innovation Zone S.A. (A.I.Z. S.A.) collaborates and interacts with all the stakeholders of innovation ecosystem such as researchers, educational organizations and research organizations, founders and investors. However, the most important achievement and scope of the Alexander Innovation Zone S.A. (A.I.Z. S.A.) is its role as an “umbrella” organization and innovation hub for local clusters and synergies between innovative businesses, where they can create short and long term innovative actions based on their collaboration, supported by the State's funding tools. It was signed a Memorandum of Understanding between the top 16 innovative and research organizations of regional unit of Thessaloniki, for the successful implementation of this project ([thessinnozone](#)).

4.4. The vision of Alexander Innovation Zone S.A.

The vision of Alexander Innovation Zone S.A. (A.I.Z. S.A.) is to turn Thessaloniki, and its regional unit, one of the leaders of innovation hubs, an internationally recognized innovation zone and innovation center of the Southeast Europe, enhancing the regional financial growth by the implementation of new technologies in industry, based on the results of scientific research and knowledge (Topaloglou et al 2019, p. 2). Furthermore, the success of Alexander Innovation Zone's project, it could provide a social impact, especially in Thessaloniki regional unit, since the local scientists and specialists, especially the young one, should be operate their businesses in their home country and city, avoiding their immigration on abroad (Topaloglou et al 2019, p. 2).

4.5. Actions of Alexander Innovation Zone S.A.

Alexander Innovation Zone S.A is one of the most important, almost the most important, innovation center of the region of Central Macedonia, which provides a great impact in extroversion of the whole region in general. As an innovation center whose aim is the regional development and the regional economic growth, Alexander Innovation Zone S.A collaborates with the local Authorities such as local Municipalities, especially with the municipality of Thessaloniki, the Authority of the region of Central Macedonia, the Ministry of Macedonia and Thrace, the local educational organizations and research centers (Aristotle University of Thessaloniki, University of Macedonia, Thessaloniki's international University, the Centre for Research and

Technological Development Hellas (CERTH), South-East European Research Centre (SEERC), e.t.c.), Association of Information Technology Companies of Northern Greece (SEPVE), the Niarchos Foundation, CERTH, the OK Thess, Technopolis, KEPA, Incubator i4g, SEPVE e.t.c. (Topaloglou et al 2019, p. 14).

According to Topaloglou et al (2019, p. 16), Alexander Innovation Zone S.A should also be “coordinator” and a “manager” of all the region’s initiatives, enhancing and supporting the cooperation and synergies among the businesses which are under its umbrella, supplementary to the collaboration between the other stakeholders of regional development such as local government, educational institutes, research centers and companies which are based in Thessaloniki and its regional unit. An another remarkable point is the collaboration between the USA Embassy in Thessaloniki and Alexander Innovation Zone S.A concerning the promotion of investing in Thessaloniki, in addition to boosting the growth of local startups, with an extroverted orientation and the “brand” of Thessaloniki as an investments’ friendly destination (Topaloglou et al 2019, p. 14).

For the success of all these fundamental actions and initiatives the organization should be autonomous concerning to its resources, decisions, management and operation (Topaloglou et al 2019, p. 17). Supplementary to the above, according to Topaloglou et al (2019, p. 18), “International experience shows that such ecosystems should not be spatially enclosed but functionally linked to the urban space, ensuring an environment of dynamic interaction and synergies between enterprises and innovative research outcomes”. Unfortunately, one of the most serious problems of Greek reality concerning to public services, is the bureaucracy which is a detrimental issue and obstacle for the successful processing and acceleration of services.

V. INSTEAD OF EPILOGUE

Innovation occupies a prominent place in both the National Strategic Reference Framework (NSRF) 2007 - 2013 and the Framework Partnership for Growth (NSRF) 2014 - 2020. In the NSRF 2007 - 2013 the development effort to some extent is based on its promotion and interconnection of innovation, research and entrepreneurship (Delitheou V., 2018, p. 472). Accordingly, in NSRF 2014-2020, the first of the eleven (11) thematic objectives is to support Research, Technological Development and Innovation, which belongs to the category of Smart Development (Delitheou V., 2018, p. 479). This category along with Objective 4, which is to reduce carbon use, need particular emphasis (Delitheou V., Podimatas E., Michalaki E., 2017, p.p. 218-219). Initially, it was found that the application of innovative and new technologies was found either in start-ups or large-scale enterprises. For the sake of development, and especially regional development, it is not enough for the companies to apply the new technologies individually, but they need to transfer the technological know-how and work closely together.

In addition, it is proposed to support start-ups through mechanisms such as incubators, accelerators, universities and company clusters. In the above ways, startups receive IT and technological support, while at the same time offering consulting services to them, minimize costs related to facilities and administrative support. In Greece, such support mechanisms need to be rapidly developed, as their appearance is very limited. Moreover, in order to increase the competitive edge of a country's business, government at the state level should provide tax incentives to boost Smart Specialization and reduce bureaucracy, which is a hindrance to the implementation of a new business concept. Information and Communication Technologies (ICT) must also be implemented in Public Administration with the main aim of modernizing the services offered and the functionality of the public sector.

Unfortunately, although Greece has already made some efforts to create an Information Society, it is still unable to keep up with developments and address the problems that arise, such as the development of e-government. To address the specific weakness of public administration bodies, there should be immediate information and training of civil servants in managing and exploiting the full potential of the e-government system.

In addition, universities and research institutes can enhance Regional Development through the transfer of their technological expertise to businesses. Also, co-operation involving local government and local industry will have to be established and the approach adopted by the R&D departments to adapt to market demands must be changed.

From the case study by Alexander Innovation Zone SA (AIZSA) it is shown that it is a very important innovation center for the Region of Central Macedonia, as well as for Southeast Europe, with a view to Regional and Economic Development. In order to achieve this, it has created many synergies and partnerships. However, as this venture is the result of a dynamic effort, it is very important that it is constantly evolving and that requires constant and expanded involvement of all the actors and partnerships it has achieved.

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