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Chapter

Innovation and Entrepreneurial Ecosystems

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Abstract

Nowadays special attention is paid to ecosystem conditions that encourage innovation and entrepreneurship. This chapter provides a critical review and expands the understanding of the concepts of the innovation ecosystem and entrepreneurial ecosystem. The entrepreneurial ecosystem represents a collection of actors that interact within a geographically bound entrepreneurial environment and factors, which contribute to the development of productive entrepreneurship. Innovation ecosystems represent communities of interacting actors that support innovation processes and create technologies and innovations. The focus of the innovation ecosystem is on value creation through the creation of innovations, while the focus of the entrepreneurship ecosystem is on the development of entrepreneurship. There are differences between the two concepts, but also the relationships and interactions, which are revealed in the chapter. Also, there are highlighted the framework, components and features of both entrepreneurial and innovation ecosystems.

Keywords: system, entrepreneurship, entrepreneurial ecosystem, innovation, innovation ecosystem, networks, knowledge

1. Introduction

In current conditions of tough competition, technological advances, digitalization and exponential growth of knowledge, special attention is devoted to entrepreneurship and innovation. Entrepreneurship and innovation are considered the drivers of competitiveness, social and economic development.

Entrepreneurship is essential in amplifying innovation, creating jobs, satisfying customer demands and other economic impacts. It is well known that an important trait of entrepreneurs is their ability to innovate. Globally, people are searching innovative ways to capitalise on an idea, start a new venture and develop the business. At the same time, innovation is recognised as an important factor in fostering growth. In the attempt to improve the efficiency of operation with scarce resources, enterprises do not function in isolation but undertake entrepreneurial activity within a community of interdependent actors. The process of commercialising an idea encompasses numerous parties, and the creation of entrepreneurial and innovation ecosystems has been considered to be an effective way to nurture and support this process [1].

Innovation and entrepreneurial ecosystems are recent phenomenon phenomena that have attracted the increasing attention of policymakers, business practitioners and academics. Today, the ecosystem conditions that encourage entrepreneurial innovations and high-potential entrepreneurship became of great importance [2].

Nevertheless, according to J. Schumpeter, entrepreneurship and innovation have been strongly related [3], the innovation ecosystem and entrepreneurial ecosystem literature mainly evolve in parallel [4]. Nevertheless, there are a number of studies that discuss the main types of ecosystems, the literature suffers from a lack of development. There is little research that has considered the interactions between innovation and entrepreneurial ecosystems.

This chapter provides a critical review and expands the understanding of the concepts of the innovation ecosystem and entrepreneurial ecosystem, their commonalities and differences.

2. Introducing the concept of ecosystem

The term ecosystem (ecological system) has been adapted from biology, where it is seen as a community of living organisms interacting with various components of their environment [5]. Thus, the 'eco' is related to the environment and the 'system' implies a set of interrelated parts that operate as a unit.

J. Moore [6] translated the ecosystem metaphor into the management field. He drew a parallel between a biological system and business, stating that like organisms in nature, companies interact with each other and exist in a given business environment. Since then, the ecosystem literature has obtained increased popularity in academia, business, management and policy. In the last decades, different research streams have been developed: business ecosystem [6], followed by the innovation ecosystem, the entrepreneurial ecosystem, the knowledge ecosystem and others. These ecosystems mainly differ depending on the types of actors involved and the nature of the value proposition.

In business and management, the concept of an 'ecosystem' describes "collectives of heterogeneous, yet complementary organisations" who jointly generate an ecosystem-level output, thus extending beyond the outputs and activities of any individual participant of the ecosystem [7].

There are four commonalities that distinguish ecosystems from other organisational collectives: the system-level outcome, participant heterogeneity, nature of interdependence among ecosystem participants and coordination mechanisms [8]. The presence of one of them does not distinguish an ecosystem, but the combination of all four characteristics is unique to ecosystems. The system approach does not explain the relationship between stakeholders. Comparing to the concept of system, which is perceived as static, the ecosystem concept should not be perceived from a linear point of view, it has a dynamic perspective. Entrepreneurship is a complex process and every ecosystem comprises a unique set of actors and interactions, which determine its evolution and shape the present and future state of the ecosystem.

3. Entrepreneurial ecosystem

The entrepreneurial ecosystem concept consists of two aspects: ecosystem described earlier, and entrepreneurial. Entrepreneurial refers to the process of

entrepreneurship. The latter is defined as “the process of creating value by bringing together a unique combination of resources to exploit an opportunity” [9].

Entrepreneurial ecosystems have evolved as a result of the changing debates about entrepreneurship. In exploring entrepreneurship, the studies shifted the focus from the personality approach to the broader social and economic environment, where enterprises are located. Entrepreneurial ecosystems offer a more realistic representation of entrepreneurial activity.

E.J. Malecki states that entrepreneurial ecosystem emerged in the early 1990s, identifying contributions from Moore’s ‘business ecosystem’, Van de Ven’s ‘infrastructure for entrepreneurship’ and Spilling’s concept of a local ‘entrepreneurial system’ [10].

Some of the most influential studies, which have driven the popularity of the concept of the entrepreneurial ecosystem are publications of D. Isenberg [11], B. Feld [12], C. Mason and R. Brown [13], E. Stam [14], B. Spigel [15] and others, highlighting that the community and culture in a specific place can have a significant impact on entrepreneurship process. The components of the ecosystem and local context can influence the choices, entrepreneurs make and decisions they take.

The ecological aspect of the entrepreneurial ecosystem has links to ‘economic gardening’, an entrepreneurial approach to local economic development [13]. Entrepreneurial ecosystems should create supportive environments that foster both new business start-ups and high-growth firms. Thus, there should be created an environment that promotes the creation of new ventures, including innovative start-ups, as well as the development of enterprises. Some practitioners view predominantly start-ups within entrepreneurial ecosystems, but ecosystems are not just about start-ups, the role of larger enterprises should not be diminished.

The entrepreneurial ecosystem is a recent notion with various definitions suggested, but there is not a widely shared definition yet. B. Spigel [15] sees the concept as a conceptual umbrella that comprises different perspectives on the geography of entrepreneurship rather than a coherent theory.

A list of main definitions of entrepreneurial ecosystem provided in the literature is presented in **Table 1**. Some definitions consider the role of the components (e.g. [13, 14]), while others emphasise the interaction among the elements (e.g. [4]).

The analysis of the main definitions allowed identifying main *characteristics of entrepreneurial ecosystem*:

- there are various actors and factors involved;
- interactions, interdependent relationships between different actors are essential in an ecosystem;
- the focus is on growth-oriented entrepreneurship;
- dynamic and systemic nature of the concept;
- there should be an element of spatiality/locality.

The entrepreneurial ecosystem implies a shift from traditional economic thinking focused mainly on companies and markets towards new thinking about people and networks. In all presented and other definitions, entrepreneurship does not occur in

Authors	Definition	Features
Isenberg, 2010	entrepreneurship ecosystem “consists of a set of individual elements—such as leadership, culture, capital markets, and open-minded customers—that combine in complex ways” [11].	The focus is on components of the ecosystem.
Acs et al., 2014	“dynamic, institutionally embedded interaction between entrepreneurial attitudes, ability, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures” [4].	Emphasis the allocation of resources as an outcome, and dynamic nature of the ecosystem.
Mason & Brown, 2014	entrepreneurial ecosystem is “a set of interconnected entrepreneurial actors (...), entrepreneurial organisations (...), institutions (...) and entrepreneurial processes (...) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment” [13].	The definition is quite comprehensive, nevertheless without specifying ecosystem outcomes.
Stam, 2015	entrepreneurial ecosystem is “a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship” [14].	Highlights productive entrepreneurship as the output of the ecosystem.
Mack & Mayer, 2016	entrepreneurial ecosystems “consist of interacting components, which foster new firm formation and associated regional entrepreneurial activities” [16].	Focus mainly on new ventures and regional aspect.
Audretsch & Belitski, 2017	entrepreneurial ecosystems defined as “institutional and organisational as well as other systemic factors that interact and influence identification and commercialisation of entrepreneurial opportunities” [17].	Emphasis the system-level context.
Bruns et al., 2017	entrepreneurial ecosystem represents a “multidimensional set of interacting factors that moderate the effect of entrepreneurial activity on economic growth” [18].	Highlights the role of interacting factors in entrepreneurial activity.
Spigel, 2017	entrepreneurial ecosystems are “combinations of social, political, economic, and cultural elements within a region that support the development and growth of innovative startups and encourage nascent entrepreneurs and other actors to take the risks of starting, funding, and otherwise assisting high-risk ventures” [15].	Emphasis the governance and the spatial constraint of the ecosystem, focusing on start-ups and high-risk ventures.
Spigel et al., 2020	entrepreneurial ecosystems defined as the “regional collection of actors (such as entrepreneurs, advisors, mentors, and workers) and factors (cultural outlooks, policies, R&D systems, and networks) that all contribute to the creation and survival of high-growth ventures” [19].	The definition involves a regional aspect and focuses on high-growth ventures.
Van Rijnsoever, 2020	entrepreneurial ecosystem is seen as “a set of actors that interact and exchange resources in a network under an institutional regime and an infrastructure” [20].	Implies a specific institutional regime and infrastructure.

Source: own elaboration.

Table 1.
Some of the main definitions of the entrepreneurial ecosystem.

isolation, at the centre of the entrepreneurial ecosystem are the actors with all their interactions and relationships. These relationships among actors support entrepreneurial activities.

Within the concept of the entrepreneurial ecosystem, many authors mainly consider the creation and activity of high-growth start-ups and scale-ups. E. Stam [14] introduced the concept of productive entrepreneurship, which is interpreted as an entrepreneurial activity that “creates aggregate welfare increases”, it is seen as an “outcome of successful ambitious entrepreneurship”. Ambitious entrepreneurs are those entrepreneurs who seek to get a higher performance of their ventures and to quickly scale-up [21]. Generally, the modern literature emphasis growth-oriented entrepreneurship. The ecosystem supports venture development and contributes to the determination of opportunities for collaboration and competition. A rich entrepreneurial ecosystem fosters entrepreneurship and therefore value creation, contributing to social and economic development.

A sustainable ecosystem cannot be instantly implemented, it takes decades of effort to achieve this. It should be noted that many studies have been focused on a static picture of entrepreneurial ecosystems. The dynamic perspective started to be considered recently in the literature. Entrepreneurial ecosystems are evolving through the interactions between actors. Also, the dynamics depend on factors of national and international order, as well as cultural specificities in a given locality. Thus, the entrepreneurial ecosystem represents a complex system, which evolves over time.

Entrepreneurial ecosystems have a spatial dimension. Generally, they are geographically bounded, but there is no limitation regarding their geographic scale. The ecosystem emerges through successful interaction between the actors at different levels: university campuses, cities, regional and national levels [22]. Also, there might be links between different ecosystems [23].

Generally, we can conclude that an *entrepreneurial ecosystem* represents a collection of actors that interact within a geographically bound entrepreneurial environment and factors, which contribute to the development of productive entrepreneurship.

The entrepreneurial ecosystem is a complex system that focuses on entrepreneurship and facilitates venture development, leading to value creation in the community.

There is no universal model of an entrepreneurial ecosystem. The structure of entrepreneurial ecosystems is unique, it may vary in different geographic communities, but what is important is their ability to ensure systems-based support for entrepreneurial activity, enabling access to markets, finance, human and intellectual capital.

The dynamic and systemic nature of the entrepreneurial ecosystem involves various actors, institutions and processes.

There are specific components of the entrepreneurial ecosystem, which are necessary to sustain entrepreneurship in a given territory. Several models of the entrepreneurial ecosystem were suggested, for example, the model by D. Isenberg [11]; G. Foster et al. [24], P. Vogel [25]; E. Stam [26], T. Mazzarol [27], B. Spigel [15].

D. Isenberg identified six domains within the entrepreneurial system: a conducive culture, enabling policies and leadership, availability of appropriate finance, quality human capital, venture-friendly markets for products, and a range of institutional supports [28]. This model contains a totally 12 core components.

In comparison, the model suggested by J. Leendertsea, M. Schrijvers and E. Stam [29] emphasises causal relations and includes institutional arrangements (formal institutions, culture and networks of entrepreneurs), resource endowment elements (psychical infrastructure, demand, support services/ intermediaries, talent, knowledge, leadership and finance), outputs (productive entrepreneurship – an “entrepreneurial activity that creates aggregate welfare” [14]) and outcomes (value creation and economic growth). Besides the fact that the model reflects the importance of

different actors and their interactions within the entrepreneurial ecosystem, it also reveals how these conditions support the entrepreneurial activities and value creation, which over time feedback into the system conditions.

Presented models reflect the components of a successful entrepreneurial ecosystem. At the same time, it is important to understand how these ecosystems evolve over time. An example of evolutionary dynamics of entrepreneurial ecosystems was developed by E. Mack and H. Mayer [16], which contain phases of birth, growth, sustainment and decline (self-renewal).

Therefore, there are different approaches to identify components of the entrepreneurial ecosystem, main approaches are presented in **Table 2**.

We can conclude that there are essential components that overlap or are similar, specifically: culture, markets, infrastructure, government, etc. The entrepreneurial ecosystem components are mutually interdependent and co-evolved.

Further, we will consider the main components that are crucial for a successful entrepreneurial ecosystem. We elaborate on the model suggested by E. Stam [14] and complement it with two more relevant components: education and training, innovation (**Figure 1**).

Even though there are more *components* to consider, we will focus on the main ones:

Infrastructure. Entrepreneurs are dependent on physical infrastructure, transportation, energy, telecommunications and others.

Markets/demand. Accessible markets (local, global) are essential to any enterprise. Customers with their needs create opportunities for entrepreneurship.

Human capital. It is an important component in the entrepreneurial ecosystem. Accessible skilled labour is a driver of success in the modern knowledge economy. Workers should have skills, abilities and expertise that meet the specific demand of enterprises.

Education and training. It is mainly provided by higher educational institutions. Universities disseminate and commercialise the knowledge; they represent the main resource for talent and are significant in an ecosystem.

Finance. Along with human capital, of great importance is the access to finance. Both are necessary and traditional and alternative sources of finance: microloans, bank loans, business angels, seed investors, venture capital, fintech, etc.

Networks. The networks of entrepreneurs provide an information flow, enabling an effective distribution of knowledge, labour and capital [30].

Policy and governance. Entrepreneurship depends on a context that is shaped by governments. The policies may encourage or hinder entrepreneurs. Efficient policies facilitate the development of the ecosystem. Additionally, there should be paid attention to the political context.

Support services. It includes a range of different organisations, intermediaries that provide support to businesses, for example, professional services (legal, accounting, insurance, consulting, technical experts), associations, mentors, clusters, business incubators, etc.

Culture: It represents the attitudes towards entrepreneurship. The culture and the presence of success stories can motivate or discourage entrepreneurial activities.

Knowledge. It refers to theoretical foundations, tacit, specialised, formal/informal knowledge that are used and generated.

Innovation. This is one of the main forces in entrepreneurial activity and allows exploiting opportunities.

D. Isenberg [28]		G. Foster [24]	P. Vogel [25]	E. Stam [26]	T. Mazzarol [27]	B. Spiegel [15]
Human capital	Labor	Human capital/ Workforce	Entrepreneurial actors	Talent	Human capital and workforce	Worker talent
	Educational institutions	Major universities as catalysts	Entrepreneurial education		Universities as catalysts	Universities
Markets	Networks		Networks	Networks		Networks
	Early customers	Accessible markets	Markets	Demand	Local and global markets	Open markets
Finance	Financial capital	Funding and finance	Financing	Finance	Funding and finance	Investment capital
Culture	Societal norms	Cultural Support	Culture	Culture	Culture	Supportive culture
	Success stories					Histories of entrepreneurship
Policy	Leadership			Leadership		
	Government	Regulatory framework & infrastructure	Government & regulations	Formal institutions	Government policy	Policy and governance
Supports	Infrastructure		Infrastructure	Physical infrastructure	Regulatory framework & infrastructure	Physical infrastructure
	Support professions	Support system	Startup support	Support services, intermedia-ries	Mentors, advisors and support systems	Support services
	Non-governm institutions					mentors and role models
		Education & training			Education & training	
			Innovation			
			Geographic location			
			Visibility			
				New knowledge		

Source: own elaboration.

Table 2.
 Synthesis of the main approaches to identify components of entrepreneurial ecosystem.

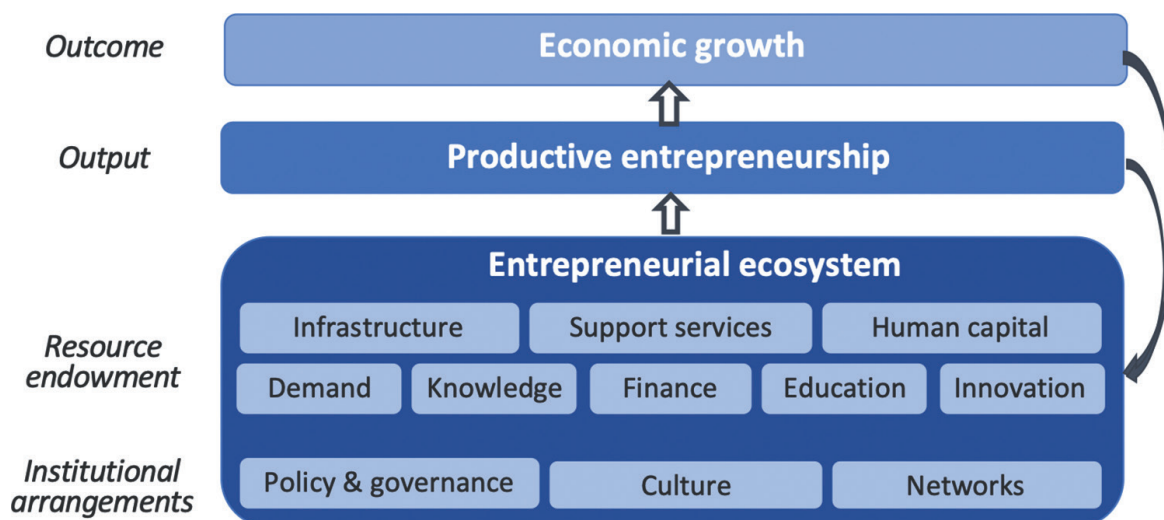


Figure 1. Key elements, outputs and outcomes of the entrepreneurial ecosystem. Source: adapted from ref. [29].

Main *actors* in an entrepreneurial ecosystem are entrepreneurs, public sector, service providers (marketing, legal, etc.), financial institutions, academia, investors, non-government organisations, media, etc.

At the same time, it should be kept in mind, that there is no one key factor of success. There are multiple components, which vary in the different entrepreneurial ecosystem, each ecosystem will have its unique structure.

4. Innovation ecosystem

Literature on the innovation ecosystem, similar to the other concepts of the ecosystem in management, experienced significant growth in recent years. Predecessors of the innovation ecosystem are considered the innovation system and the business ecosystem.

Before defining the innovation ecosystem, we will take a look at the innovation aspect of the concept. According to Tidd et al., innovation is “a process of turning opportunity into new ideas and of putting these into widely used practice” [31]. Another definition states that innovation represents “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” [32]. At the same time, the concept ‘new’ could mean new to the world, new to a nation, new to a firm, etc.

The concept of innovation ecosystem became more widely used after the publication of a Harvard Business Review article by R. Adner. He defined an innovation ecosystem as “the collaborative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution” [33]. Some definitions of the innovation ecosystem are presented in **Table 3**.

A more recent and quite comprehensive definition was provided by O. Granstrand, and M. Holgersson: an innovation ecosystem is “the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors” [37].

This definition highlights five components: actors, activities, relations (collaborative, competitive), artefacts (products and services, tangible and intangible resources, technological and non-technological resources, and other types of system inputs and outputs, including innovations) and evolution.

Authors	Definition
R. Adner, 2006	innovation ecosystems are “the collaborative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution” [33].
D. Jackson, 2011	defines an innovation ecosystem as the “complex relationships that are formed between actors or entities whose functional goal is to enable technology development and innovation” [34].
S.Nambisan & R. Baron, 2013	innovation ecosystems refer to “a loosely interconnected network of companies and other entities that coevolve capabilities around a shared set of technologies, knowledge, or skills, and work cooperatively and competitively to develop new products and services” [35].
E. Autio, 2021	an innovation ecosystem is “a community of hierarchically independent, yet interdependent heterogeneous participants who collectively generate a coherent, ecosystem-level output and related value offering targeted at a defined user audience” [36].
O. Granstrand, & M. Holgersson, 2020	an innovation ecosystem is “the evolving set of actors, activities, and artefacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors” [37].

Source: own elaboration.

Table 3.
Some of the main definitions of innovation ecosystem.

Innovation has evolved beyond the boundaries of single companies towards a more network-based approach [38]. This is because innovations are implemented through a system with complex networks, where organisations interact with each other to foster innovation.

While innovation systems can be governed by public policies, being static concepts, innovation ecosystems are perceived as self-organised, dynamic structures, which evolve along with changing market conditions. Similar to an entrepreneurial ecosystem, a successful innovation ecosystem is the result of a long process of evolution and may have different stages of maturity.

Due to the involvement in the network, each ecosystem participant is symbiotic to and co-evolves with other participants [39]. Fast changes in the business environment and increasing uncertainty determine organisations both to compete and to cooperate in order to achieve success. All actors in an innovation ecosystem contribute to the co-creation of the value of a whole ecosystem, which would be hardly possible to produce by a single firm.

Differing from innovation systems, innovation ecosystems involve collaborative activities in the innovation process. In an ecosystem, information, knowledge and tangible resources move around the network. Technology is the main resource of innovation, at the same time, not every technology leads to innovation. In order an idea to become an innovation, it should be implemented. In a successful innovation ecosystem, innovation outputs are commercialised. Therefore, the innovation ecosystem encompasses both R&D and commercial areas.

Ecosystems represent networks of organisations that combine efforts to produce and implement innovations. Ecosystems “do something to create value for someone” [36]. In contrast to business ecosystems, which focus on value capture, innovation ecosystems focus on value creation [40].

Some important *features of innovation ecosystem* are:

- an innovation ecosystem is dynamic and flexible;
- is characterised by complex relationships between actors;
- interdependence between actors;
- openness;
- network effect;
- co-evolution;
- co-creation of value in the ecosystem.

The innovation ecosystem model is related to various spatial levels, ranging from company, city, regional, to national and even global levels. Ecosystems have also been considered at non-spatial levels of analysis, meaning that the focal firm and its complementors and suppliers are not necessarily located in the same region, as long as they belong to the same sector [7].

Innovation ecosystem consists of interacting actors, relationships, resources and conditions that either enable or impede innovation (**Figure 2**).

Main *actors* in the innovation ecosystem are: entrepreneurs, government, academia (both educational and R&D institutions), industry (various associations), supporting institutions (institutions that provide specialised, professional assistance), financial system (e.g. financial institutions, investors, business angels, venture capitalists) and civil society (non-government organisations, media, etc.) [41]. Innovation ecosystem includes the following main *elements*: human capital,

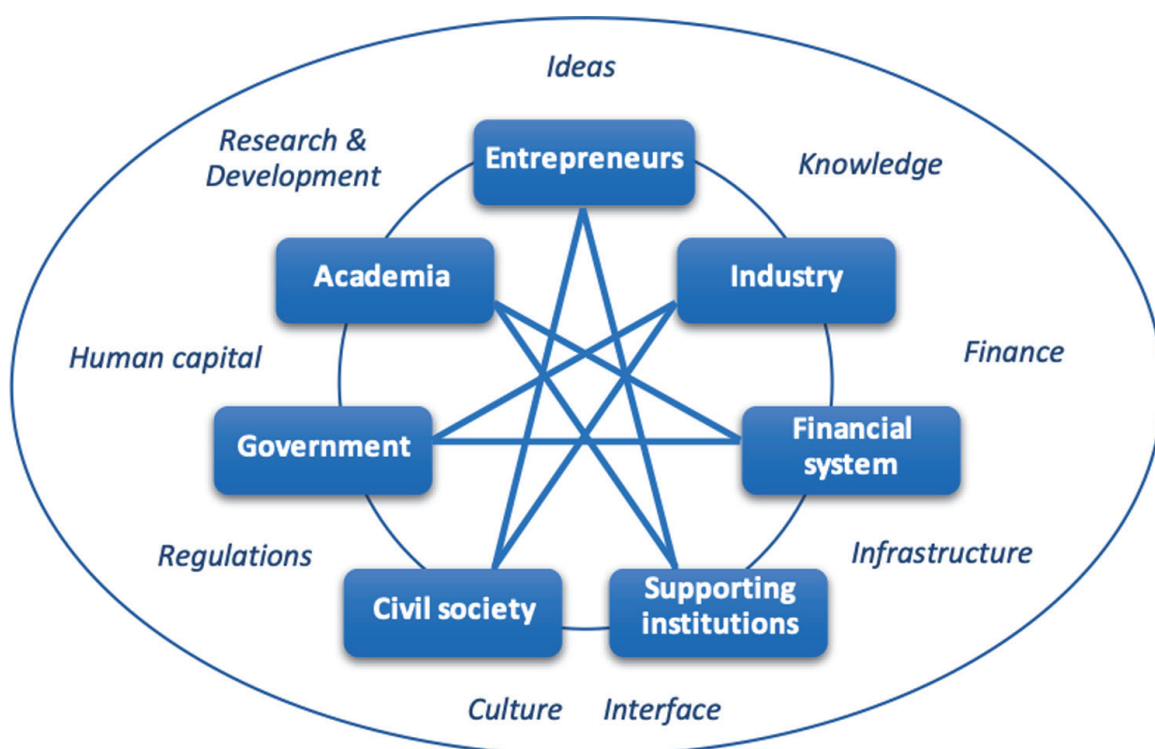


Figure 2.
Innovation ecosystem. Source: own elaboration.

knowledge, infrastructure, regulations, ideas, finance, research and development, the interface between actors, culture.

Therefore, innovation ecosystems represent communities of interacting actors that support innovation processes and create technologies and innovations. By using the infrastructure and resources, better ways of doing things are developed and implemented.

5. Similarities and differences between innovation ecosystem and entrepreneurial ecosystem

The concept of ecosystem became widely used in the field of innovation and entrepreneurship by academics, policymakers and practitioners. The entrepreneurial and innovation ecosystems evolved to understand why some places grow, while others stagnate and therefore to explain successful socio-economic development in a particular geographical area. They share closely related issues and have many similarities, being at the same time different in various aspects.

Ensuring growth depends on the social and economic environment for innovation and entrepreneurship. Entrepreneurial and innovation ecosystems represent complex systems with the following common features: self-organisation, complex components, interdependent relationships between different actors, non-linearity, i.e. dynamic nature, adaptability. Both concepts have their roots in the ecosystemic foundation, thus are characterised by non-linearity and include a multitude of actors and factors, interacting at many levels. In an ecosystem, a key feature is that firms do not just compete with each other using their own resources, but cooperate, interact and use shared resources, knowledge, networks, infrastructure and support to co-create value. Both ecosystems encompass collaboration between new, small ventures and large organisations. Also, innovation is considered to be central to innovation ecosystems as well as entrepreneurial ecosystems. Innovation represents one of the main motive forces of entrepreneurial ecosystems [42].

However, there are a number of differences between the analysed concept, particularly in the units of analysis used, context mechanisms, roles of individual agents in regional economic development [43].

Although there is some relation between the concepts of entrepreneurship and innovation, it should be mentioned that not all entrepreneurs innovate, as well as not all innovations are about entrepreneurial opportunities [44].

In general, both analysed ecosystems involve similar actors, the difference is in the role they play in the respective ecosystem. In terms of the components, there are some components that are essential for both ecosystems, for example, human resources, finance, infrastructure, governance, etc. At the same time each ecosystem includes a number of components that are mainly characteristic to them, for example, ideas, research and development to the innovation ecosystem, and visibility, innovation, markets to entrepreneurial ecosystems (**Figure 3**).

Innovation ecosystem represents a network of legally independent economic agents of different line-ups who can be direct competitors, but collaborate to create a comprehensive value proposition for customers. On the other hand, in an entrepreneurial ecosystem, there is no value offering targeted at a defined audience. Instead, it implies a network of interrelated economic agents from a specific area and results in the creation of new ventures and stimulation of regional development [45]. The proximity of all actors is essential in an entrepreneurial ecosystem, which is place-based,

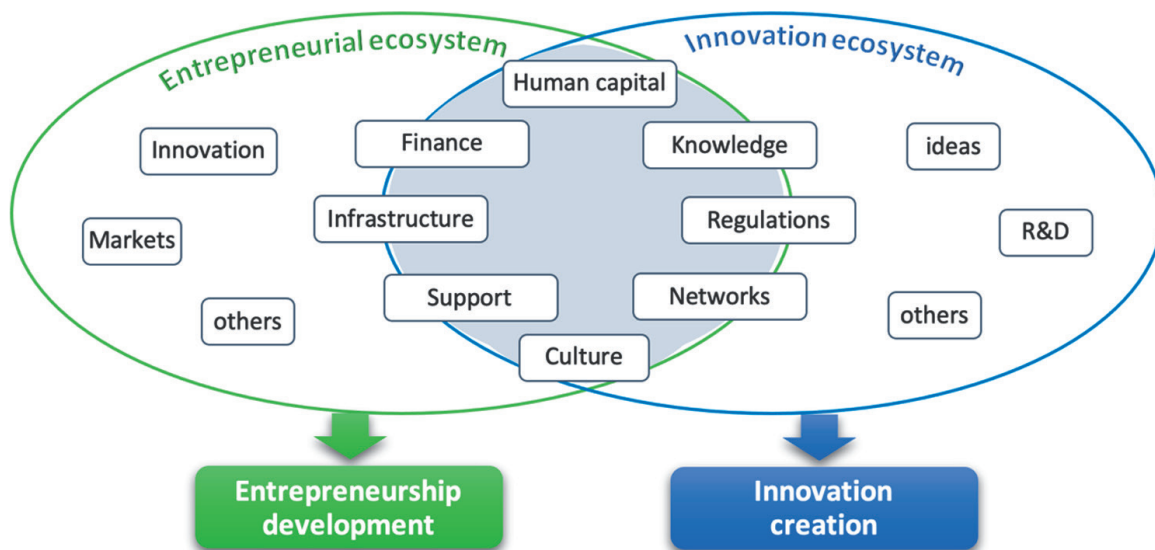


Figure 3.
Entrepreneurial ecosystem vs. innovation ecosystem. Source: own elaboration.

but it is more flexible in an innovation ecosystem, which is non-location specific with a possible virtual presence.

Another difference between innovation ecosystem and entrepreneurial ecosystem refers to various emphases: it is on innovation and entrepreneurs correspondingly. Innovation ecosystems focus on value creation through innovation creation, while entrepreneurial ecosystems focus on entrepreneurship development. Entrepreneurial activity, as an output of the entrepreneurial ecosystem, creates opportunities for innovation. While innovation, in turn, contributes to new value creation, which is the outcome of an entrepreneurial ecosystem [21]. The output of collaboration in the innovation ecosystem may be in form of various innovations, innovative technologies, products, services, it supports processes of innovation. The output of the entrepreneurial ecosystem is the entrepreneurial activity and entrepreneurship development, where the interactions between actors and the infrastructure create conditions for new ventures creation.

6. Conclusions

The chapter expanded the understanding of the concepts of the entrepreneurial ecosystem and innovation ecosystem. Different approaches to defining entrepreneurial and innovation ecosystems, as well as determining their structures were considered.

Innovation and entrepreneurial ecosystems are a recent phenomenon that evolved in an attempt to determine what leads to the success of socio-economic development.

An entrepreneurial ecosystem represents a collection of actors that interact within a geographically bound entrepreneurial environment and factors, which contribute to the development of productive entrepreneurship.

On the other hand, innovation ecosystems represent communities of interacting actors that support innovation processes and create technologies and innovations.

It was identified that entrepreneurial and innovation ecosystems are complex systems with the following common features: self-organisation; encompass complex components; interdependent relationships between different actors; non-linearity,

i.e. dynamic nature; adaptability. Innovation is considered to be central to both innovation and entrepreneurial ecosystems, innovation ecosystems representing an important context for entrepreneurship. However, there are a number of differences between the entrepreneurial and innovation ecosystems, particularly in location, the main focus, context mechanisms, roles of individual actors, the output of the ecosystem. Both analysed ecosystems involve mainly similar actors, the difference is in the role they play in the respective ecosystem. It was stated that innovation ecosystems focus on value creation through the development of innovations, while entrepreneurial ecosystems on entrepreneurship development.

Nevertheless, further research is needed to identify the direction of strengthening entrepreneurial and innovation ecosystems, which will contribute to economic growth and social development.


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References

- [1] Xu Z, Maas G. Innovation and entrepreneurial ecosystems as important building blocks. In: Maas G, Jones P, editors. *Transformational Entrepreneurship Practices*. Cham: Palgrave Pivot; 2019. pp. 15-32. DOI: 10.1007/978-3-030-11524-1_2
- [2] Guerrero M, Martínez-Chávez M. Aligning regional and business strategies: Looking inside the Basque Country entrepreneurial innovation ecosystem. *Thunderbird International Business Review*. 2020;**2020**(62):607-621. DOI: 10.1002/tie.22162
- [3] Schumpeter J. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, MA: Harvard University Press; 1934
- [4] Acs ZJ, Autio E, Szerb L. National systems of entrepreneurship: Measurement issues and policy implications. *Research Policy*. 2014; **43**(3):476-494. DOI: 10.1016/j.respol.2013.08.016
- [5] Tansley AG. The use and abuse of vegetational concepts and terms. *Ecology*. 1935;**16**(3):284-307
- [6] Moore JF. Predators and prey: A new ecology of competition. *Harvard Business Review*. 1993;**71**(3):75-86
- [7] Thomas LDW, Autio E. *Innovation Ecosystems in Management: An Organizing Typology*. In: *Oxford Research Encyclopaedia of Business and Management*. Oxford: Oxford University Press; 2020
- [8] Autio E, Thomas LDW. Researching ecosystems in innovation contexts. *Innovation & Management Review*. 2021;1-14. DOI: 10.1108/INMR-08-2021-0151
- [9] Stevenson HH, Jarillo Mossi JC. Preserving entrepreneurship as companies grow. *Journal of Business Strategy*. 1986;**7**(1):10-23
- [10] Malecki EJ. Entrepreneurship and entrepreneurial ecosystems. *Geography Compass*. 2018;**12**:e12359. DOI: 10.1111/gec3.12359
- [11] Isenberg DJ. How to start an entrepreneurial revolution. *Harvard Business Review*. 2010;**88**(6):40-50
- [12] Feld B. *Startup Communities: Building an Entrepreneurial Ecosystem in your City*. New York: Wiley; 2012
- [13] Mason C, Brown R. *Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship*. Paris: Final Report to OECD; 2014. <http://lib.davender.com/wp-content/uploads/2015/03/Entrepreneurial-ecosystems-OECD.pdf>
- [14] Stam E. Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*. 2015;**23**(9):1759-1769. DOI: 10.1080/09654313.2015.1061484
- [15] Spigel B. The relational organization of entrepreneurial ecosystems. *Entrepreneurship Theory and Practice*. 2017;**41**(1):49-72. DOI: 10.1111/etap.12167
- [16] Mack E, Mayer H. The evolutionary dynamics of entrepreneurial ecosystems. *Urban Studies*. 2016;**53**(10):2118-2133. DOI: 10.1177/0042098015586547
- [17] Audretsch DB, Belitski M. *Entrepreneurial ecosystems in cities:*

Establishing the framework conditions. *Journal of Technology Transfer*. 2017;42(5):1030-1051. DOI: 10.1007/s10961-016-9473-8 Available at <https://centaur.reading.ac.uk/61156/>

[18] Bruns K, Bosma N, Sanders M, et al. Searching for the existence of entrepreneurial ecosystems: A regional cross-section growth regression approach. *Small Business Economics*. 2017;49:31-54. DOI: 10.1007/s11187-017-9866-6

[19] Spigel B, Kitagawa F, Mason C. A manifesto for researching entrepreneurial ecosystems. *Local Economy*. 2020;35(5):482-495. DOI: 10.1177/0269094220959052

[20] Van Rijnsoever FJ. Meeting, mating, and intermediating: How incubators can overcome weak network problems in entrepreneurial ecosystems. *Research Policy*. 2020;49:103884. DOI: 10.1016/j.respol.2019.103884

[21] Spigel B, Stam E. Entrepreneurial ecosystems. In: Blackburn R, De Clercq D & Heinonen J (eds). *SAGE Handbook of Entrepreneurship and Small Business*. London: 21, SAGE; 2018. DOI: 10.4135/9781473984080.n21

[22] Fredin S, Liden A. Entrepreneurial ecosystems: Towards a systemic approach to entrepreneurship? *Geografisk Tidsskrift-Danish Journal of Geography*. 2020;120(2):87-97. DOI: 10.1080/00167223.2020.1769491

[23] Wurth B, Stam E, Spigel B. Toward an entrepreneurial ecosystem research program. *Entrepreneurship Theory and Practice*. March 2021:1-50. DOI: 10.1177/1042258721998948

[24] Foster G, Shimizu C, Ciesinsik S, et al. *Entrepreneurial Ecosystems around the World and Company Growth*

Dynamics, Industry Agenda. Geneva, Switzerland: World Economic Forum; 2013

[25] Vogel P. The employment outlook for youth: Building entrepreneurship ecosystems as a way forward. In: *Conference Proceedings of the G20 Youth Forum*. St. Petersburg, Russia: G20 Youth Forum; 2013. pp. 443-449

[26] Stam E. *The Dutch Entrepreneurial Ecosystem*. Utrecht: Birch Research; 2014. pp. 1-41. DOI: 10.2139/ssrn.2473475

[27] Mazzarol T. Growing and sustaining entrepreneurial ecosystems: What they are and the role of government policy. In: *White Paper WP01-2014*. Australia: Small Enterprise Association of Australia and New Zealand (SEAANZ); 2014

[28] Isenberg D. *The entrepreneurship ecosystem strategy as a new paradigm for economic policy: Principles for cultivating entrepreneurship*. Babson Park, MA: Babson Entrepreneurship Ecosystem Project, Babson College; 2011

[29] Leendertse J, Schrijvers M, Stam E. Measure twice, cut once: Entrepreneurial ecosystem metrics. *Research Policy*. 2021:1-27. DOI: 10.1016/j.respol.2021.104336

[30] Malecki EJ. Entrepreneurs, networks, and economic development: A review of recent research. In: Katz JA, editor. *Advances in Entrepreneurship, Firm Emergence, and Growth*. Greenwich, CT: JAI Press; 1997

[31] Tidd J, Bessant J, Pavitt K. *Managing Innovation: Integrating Technological, Market and Organizational Change*. 3rd ed. Chichester: John Wiley & Sons Ltd; 2005

[32] *Oslo Manual. Guidelines for Collecting and Interpreting Innovation*

Data. 3rd ed. A joint publication of OECD and Eurostat. Paris: OECD; 2005

[33] Adner R. Match your innovation strategy to your innovation ecosystem. *Harvard Business Review*. 2006;**84**(4):98-107

[34] Jackson DJ. *What Is an Innovation Ecosystem*. Arlington, VA: National Science Foundation; 2011

[35] Nambisan S, Baron RA. Entrepreneurship in innovation ecosystems: Entrepreneurs' self-regulatory processes and their implications for new venture success. *Entrepreneurship Theory and Practice*. 2013;**37**(5):1071-1097. DOI: 10.1111/j.1540-6520.2012.00519.x

[36] Autio E. Orchestrating ecosystems: A multi-layered framework. *Innovation*. 2021;1-14. DOI: 10.1080/14479338.2021.1919120

[37] Granstrand O, Holgersson M. Innovation ecosystems: A conceptual review and a new definition. *Technovation*. 2020;**90-91**:1-12. DOI: 10.1016/j.technovation.2019.102098

[38] Bittencourt BA, Santos DAG, Mignoni J. Resource orchestration in innovation ecosystems: A comparative study between innovation ecosystems at different stages of development. *International Journal of Innovation - IJI*, São Paulo. 2021;**9**(1):108-130. DOI: 10.5585/iji.v9i1.18076

[39] Thomas LDW, Sharapov D, Autio E. Linking entrepreneurial and innovation ecosystems: The case of AppCampus. In: Carayannis EG, Dagnino GB, Álvarez S, Faraci R, editors. *Entrepreneurial Ecosystems and the Diffusion of Startups*. Cheltenham: Edward Elgar Publishing; 2018. pp. 35-64. DOI: 10.4337/9781784710064.00008

[40] de Vasconcelos Gomes LA, Facin ALF, Salerno MS, Ikenami RK. Unpacking the innovation ecosystem construct: Evolution, gaps and trends. *Technological Forecasting and Social Change*, Elsevier. 2018;**136**(C):30-48

[41] Rabelo RJ, Bernus P. A holistic model of building innovation ecosystems. *IFAC-Papers OnLine*. 2015;**48**(3):2250-2257. DOI: 10.1016/j.ifacol.2015.06.423

[42] Bouncken RB, Kraus S. Entrepreneurial ecosystems in an interconnected world: Emergence, governance and digitalization. *Review of Managerial Science*. 2021;**16**:1-14. DOI: 10.1007/s11846-021-00444-1

[43] Belitski M, Godley A. The synergy approach to understand entrepreneurship and innovation ecosystem taxonomy. In: Tsvetkova A, Schmutzler J, Pugh R, editors. *Entrepreneurial Ecosystems Meet Innovation Systems: Synergies, Policy Lessons and Overlooked Dimensions*. Cheltenham, UK: Edward Elgar Publishing; 2020. pp. 152-169

[44] Feldman M, Siegel DS, Wright M. New developments in innovation and entrepreneurial ecosystems. *Industrial and Corporate Change*. 2019;**28**(4): 817-826. DOI: 10.1093/icc/dtz031

[45] Burda YD, Volkova IO, Gavrikova EV. Meaningful analysis of innovation, business and entrepreneurial ecosystem concepts. *Russian Management Journal*. 2020;**18**(1):73-102. DOI: 10.21638/spbu18.2020.104