

Entrepreneurial Ecosystems – A Review

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Abstract: The entrepreneurial ecosystem has emerged as a topic of research and debate among researchers and policy makers. Entrepreneurial ecosystems have captured the attention of nations in transforming their economies around the creation of innovative products and services, leading to wealth creation and international competitiveness. The literature on entrepreneurial ecosystems is fragmented, yet no study has paid attention to integrating the available studies. This paper aims to provide an overview of the entrepreneurial ecosystem literature in order to create the following papers. First, this article provides an overview of entrepreneurial ecosystem studies. This study is therefore a systematic effort to map the research gaps and gaps on the topic of Entrepreneurial Ecosystem. Second, by identifying knowledge gaps in the current literature, we suggest an avenue for future entrepreneurial ecosystem research. This study supports policy makers and researchers in developing new policies leading to regional systems of innovation and entrepreneurship.

Keywords: Ecosystem, Entrepreneurship, Entrepreneurial ecosystem, Literature review.

1. Introduction

Entrepreneurship as an independent scientific discipline deals with innovation, new ventures and corporate growth and has been placed at the center of a number of improvement programs in previous years. Promoting entrepreneurial thinking and action is the subject of financial government challenges in many urban communities. When it comes to a decent variety of business, different methodologies derive their own specific terms and definitions. Of all the different possible perspectives on the topic of entrepreneurship (eg, starting a new business, creating an effective supportive entrepreneurial ecosystem, growing a business, innovating, exploiting and discovering opportunities), the first two are most often used by various researchers throughout their volume and wide shape. The growing attention paid to the topic of entrepreneurship has been continuously manifested since ten years ago.

Although the body of literature on entrepreneurial ecosystems is growing and recently attracting the attention of researchers (Mason & Brown 2014; Stam 2015; Zahra & Nambisan 2011), none of the studies pay sufficient attention to the integration of the available literature on the entrepreneurial ecosystem. This means that the available research on the entrepreneurial ecosystem is still small and fragmented. This study therefore attempts to fill this gap by categorizing the various articles that exist on the entrepreneurial ecosystem.

Accordingly, this paper aims to provide an overview of the entrepreneurial ecosystem literature in order to make the following contributions. First, this article provides a comprehensive overview of entrepreneurial ecosystem studies. This study is therefore a systematic effort to map research gaps and gaps on the topic of the entrepreneurial ecosystem. Second, by identifying knowledge gaps in the current literature, we suggest an avenue for future entrepreneurial ecosystem research and a way forward for researchers and, potentially, policy makers to apply the concept more fruitfully.

2. Defining Entrepreneurial Ecosystems

There is no uniformly accepted explanation of the entrepreneurial ecosystem, on the other hand, numerous attempts have recently been made to define this term, and the definition of the domains of entrepreneurial ecosystems depends on the research objectives. Definitions typically convey the importance of a small area and the interdependent relationships between unique business actors as key elements influencing the overall performance of a business ecosystem. The business ecosystem is defined as the interaction of economic actors, their roles and external factors that influence economic activity and business creation in the territory (Spilling, 1996). Stam, (2015) offers a broad meaning of an entrepreneurial ecosystem as “a set of interdependent actors and factors coordinated in such a way as to enable productive entrepreneurship”. Venkataraman (2004) provided a more comprehensive definition of an entrepreneurial ecosystem as “the environment that supports the creation of new ventures is an interconnected set of elements including risk takers, information brokers, resource providers, demand markets and enabling technologies that together form a virtuous cycle of wealth creation”. Clearly, the dynamic and systemic nature of the concept involves multiple actors, institutions and processes.

Daniel Isenberg, head of the Babson Entrepreneurship Ecosystem Project, characterizes an entrepreneurial ecosystem as the arrangement of a system of organizations to help an entrepreneur experience each of the stages of the process of starting a new business (Isenberg 2010; Isenberg 2011). . Similarly, he described the business ecosystem into four features: (1) It consists of six domain names (policy, finance, culture, support, human capital, markets) (Figure 1). (2) Every entrepreneurial ecosystem is unique – therefore Silicon Valley cannot be replicated. (3) The specification of known root causes

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of an entrepreneurial ecosystem is of limited practical value due to the multidimensional members of the purpose-effect family that may not be fine-tuned to one or two key roots. (4) Entrepreneurial ecosystems will emerge as (mainly) self-sustaining once all six domain names are robust enough.

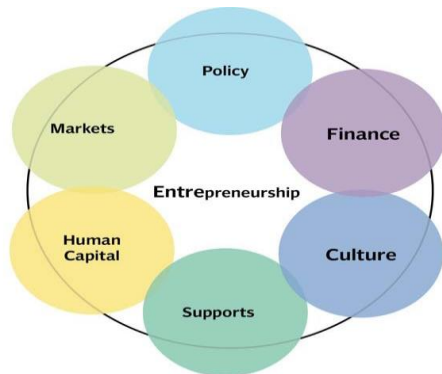


Fig. 1. Isenberg's model of an entrepreneurship ecosystem

3. Insights of Entrepreneurial Ecosystems

In fact, there is a lot to know about the ecosystem. An ecosystem can be described as a system that supports and manages a business (Isenberg, 2010). It presents the connections and exercises between different stakeholders in an entrepreneurial society and the importance of the motivational forces they encounter when they behave in a business-friendly environment (Rodriguez-Pose, 2013), especially discussing the promotion of synergies between different stakeholders, building new institutional abilities. or stimulating innovation. He mentions a similar topic in relation to the Business Ecosystem (Carlson et al., 2002).

The concept of entrepreneurial ecosystems is an intrinsically powerful concept that recognizes the importance of entrepreneurial tactics and frameworks of intellectual belief that support collaboration within the economy. Just as there may be evolutionary common sense for cluster formation (Feldman and Braunerhjelm, 2006), several researchers observe that ecosystems are “apparently an evolving machine” (Isenberg, 2010). Figure 1 presents a model of the business ecosystem. The essential element of ecosystems are actors, practices and institutions that are not simultaneously associated with start-ups, such as massive companies, universities, public bodies, health care structures, banks and stock markets (Mason and Brown, 2014). Entrepreneurial universities, in particular, are widely regarded as vital business entities, although others argue that their position has been exaggerated (Brown, 2016). The function of large contemporary organizations is regularly downplayed in the literature on the business environment. However, there is overwhelming evidence to suggest that large incumbent groups regularly play a critical function in configuring several ecosystems as attractors of skilled labor. In some regions, large exogenous defense organizations play a major role in shaping the entrepreneurial ecosystem (Adams, 2011). These roles are central to configuring a person's proximate business context, yet they will be prone to not being mentioned in much of the business climate literature (wef,

2014; spigel, 2015).

A. Entrepreneurial Ecosystem Pillars and their Components

The World Economic Forum (WEF, 2013) considers eight pillars of entrepreneurial ecosystems (Foster et al., 2013) because real contrasts in the business system can exist from one region to another. Foster et al. (2013) examines these pillars and their importance and validity for entrepreneurs in a WEF report.

Table 1
Entrepreneurial ecosystem pillars and their components

Pillar	Components
Accessible markets	Domestic market: large/medium/small companies as customers and governments as customer Foreign market: large/medium/small companies as customers and governments as customer
Human capital/workforce	Management talent, technical talent, entrepreneurial company experience, outsourcing availability and access to immigrant workforce
Funding & finance	Friends and family, angel investors, private equity, venture capital and access to debt
Support systems/mentors	Mentors/advisors, professional services, incubators/accelerators and networks of entrepreneurial peers
Government & regulatory framework	Ease of starting a business, tax incentives, business-friendly legislation/policies, access to basic infrastructure, access to telecommunications/broadband and access to transport
Education & training	Available workforce with pre-university education, available workforce with university education and those with entrepreneurship-specific training
Major universities as catalysts	Promoting a culture of respect for entrepreneurship, playing a key role in idea-formation for new companies and playing a key role in providing graduates to new companies
Cultural support	Tolerance for risk and failure, preference for self-employment, success stories/role models, research culture, positive image of entrepreneurship and celebration of innovation

Source: World Economic Forum (2013, pp. 6–7).

These pillars nicely show that the entrepreneurial ecosystem approach represents a shift from traditional economic thinking about firms and markets to a new economic thinking about people, networks and institutions (both formal and informal). People create new values, organized by different forms of governance that are enabled and constrained by specific institutional conditions. These business ecosystem approaches provide useful indicators for public policy; they even perceive the role of government as very central. All also emphasize the role of facilitators and support services (from the private sector) and cultural change, with most also explicitly acknowledging the role of talent and finance.

However, they do not provide insight into the underlying causes of business ecosystems (Acemoglu et al. 2005) and the subsequent possibilities of public policy interventions. For example, the WEF (2013) study concludes that available markets, human capital/labour and funding and finance are most important for the growth of entrepreneurial companies. These are likely to be proximate causes rather than root causes of ecosystem success (e.g. human capital and funding are likely to depend on core institutions in terms of education and financial markets), and it is far from clear what the necessary and contingent conditions are for successful ecosystems and what is the role of the government and other public organizations), especially in the more unclear arrangements of the public and private sectors. In terms of consequences, the evidence is even weaker: how ecosystems perform with respect to the degree of entrepreneurship (as an immediate consequence, output) and greater overall well-being (as a final consequence, outcome).

Recent popular literature on entrepreneurial ecosystems is directly aimed at key ecosystem stakeholders, primarily business leaders and policy makers, rather than an academic audience. Recent entrepreneurial ecosystem literature provides several lists of factors that are considered important to the

success of an entrepreneurial ecosystem. Naturally, entrepreneurs (being visible and connected) are considered the heart of a successful ecosystem, but successful entrepreneurial ecosystems have multiple attributes (Feld, 2012). In addition to the key role of the entrepreneurs themselves (in leading the development of the ecosystem and as mentors or advisors), the nine attributes according to Feld (2012) emphasize the interaction between the players in the ecosystem (with a high network density, many connecting events and large companies collaborating with local start-ups) and the approach to all kinds of relevant resources (talent, services, capital), with the enabling role of government in the background. An overview of some of the literature on different regions with different approaches to entrepreneurial ecosystems is shown in Table 2.

4. An Assessment of Entrepreneurial Ecosystem Studies

Despite its fame, the entrepreneurial ecosystem concept

suffers from various shortcomings that make it risky to apply it today in both early academic and policy circles. Empirical studies of entrepreneurial ecosystems are still in their infancy. Quantitative approaches such as (Acs et al. 2014) and (Guzman and Stern, 2015) have focused on linking outcomes such as the number of high-growth firms or firm survival to inputs such as economic structures or specific support policies. Qualitative approaches such as (Spigel, 2015) use in-depth interviews with entrepreneurs to explore the processes through which ecosystems develop, evolve and provide resources and support to entrepreneurs. Qualitative approaches are more amenable to exploring the complex linkages between an entrepreneur and its regional economic social and economic environment, as publicly available data cannot easily explore the social relationships that make up ecosystems.

First, entrepreneurship ecosystem research often tends to identify a specific location or area to explain specific features

Table 1
Literature with various approaches on entrepreneurial ecosystems

Author/s	Year	Objectives	Methodology Used & Findings
Boyd Cohen	2004	1. To gain insights into the applicability of the entrepreneurial ecosystem's literature to the potential for the development of a sustainable entrepreneurial ecosystem	The literature review & few of the local success stories suggests that Victoria leadership position within Canada as the Place to start a sustainable venture.
Jayshree Suresh & R. Ramraj	2012	1. To develop a conceptual framework of the ecosystem that would motivate individuals to start new businesses.	1. The qualitative case was developed to test the ecosystem factors. 2. A theoretical framework has been developed for regional ecosystem
Carlos Arruda	2013	1. To investigate the actors composing the Brazilian entrepreneurship ecosystem and role Played. 2. To identify the characteristics, strengths and weaknesses of the Brazilian entrepreneurship environment focusing on the development of startups, becoming a relevant tool to steer the progress of entrepreneurial practice in Brazil.	1. A qualitative research comprised of in- depth interviews with different actors in the Brazilian entrepreneurship was carried out 2. The analysis was set up as of the six entrepreneurship determinant categories defined by the Organization of Economic Co-Operation and Development (OECD).
Yagoub Entezari	2015	The main purpose of this article identifies Knowledge- Based Entrepreneurial Ecosystem (KBEE) and analyzing the linkage and interactions of its elements of IRAN	1. Carried exploratory study of literature and interviews with experts 2. The analyses of elements of KBEE demonstrates that among the actors, scholars, researchers and scientists play entrepreneur role, entrepreneurial universities have incubator role; and government plays a supportive and key role in the KBEE.
Erik Stam	2015	To critically investigate the emerging literature on entrepreneurial ecosystems.	1. This work provides a review of the multiple definitions of ecosystems found within the literature, and discusses the relationships between ecosystems and allied concepts such as industrial districts, clusters, and innovation systems. 2. It also provides a framework for analyzing the interactions between the elements within the ecosystem.
David B. Audretsch & Maksim Belitski	2016	1. To develop a model capturing both regional and local systemic factors to better understand and explain variations in entrepreneurial activity. 2. This study focused on regional entrepreneurial ecosystems and offers a complex model of start-ups, Regional Entrepreneurship and Development Index (REDI)	1. Utilized perception survey and random telephone interviews & hypotheses testing 2. Hypotheses related to various aspects of the quality of life in their city were supported
Giselle Rampersa	2016	1. To focus on Business stakeholders rather than the wider variety of players from government and university who also play a critical role.	1. Extensive literature reviews on studies involving public sector networks (i.e., networks lead by government agencies) namely framing, activating, mobilizing, and synthesizing. 2. A case study of the Tonsley entrepreneurial ecosystem formed the basis of this study.
Prem kumar Balaraman	2016	1. The main objective of the paper is to assess the entrepreneurship ecosystem in changing global scenario, identify the major Entrepreneurship hurdles and also gain insights from success stories of sector specific cases.	1. The paper is descriptive and qualitative in nature, 2. Through Entrepreneurial literature identified major insights on the evolution of entrepreneurship, entrepreneurial models and success factors of entrepreneurial ecosystem
Petra Tausl Prochazkova	2016	1. This paper explores how various regional members inside of the ecosystem are helping in spreading the entrepreneurial thoughts and shifting individuals and the general opinion from managed economy towards an entrepreneurial society.	1. Through literature review, first the understanding of ecosystem and its dimensions are conceptualized. 2. Then a case study is provided. The case study examines regional activities of several ecosystem players. 3. The findings highlight several aspects regarding the entrepreneurial ecosystem and activities fostering its flourishing.

of the entrepreneurship ecosystem. However, it is not clear how the entrepreneurial ecosystem can explain such differences between regions. It focuses on the relative importance of non-local versus local linkages, or what kind of institutions at different spatial scales matter in an entrepreneurial ecosystem. Some scholars (e.g., Malecki 2011) emphasize the importance of global linkages between a distinctive business ecosystem, as the potential to integrate global understanding is seen as key for companies to grow to be successful in their domestic business ecosystem. Multinational firms (Mason and brown. 2014) are perceived to attract skilled employees to the region, increase the managerial talent of local firms, work as suppliers for spin-off firms (Neck et al. 2004) and provide business opportunities for local firms and the businesses to gain access to global markets.

Second, the entrepreneurial ecosystem literature has been criticized for using a static framework that describes family members in the entrepreneurial environment without considering their evolution over the years. More generally, empirical research on network dynamics in entrepreneurship research remains uncommon, despite its extensive hobby appeal. Scholars have argued that business climate factors will change in meaning and context as they evolve (Mason and Brown 2014; Mack and Mayer 2015). This kind of dynamic framework of the entrepreneurial ecosystem wishes to specify which factors and family members depend to what extent and how they influence each other over the years.

Third, the entrepreneurial ecosystem literature seeks a clean analytical framework that explains what purpose is and what is effect (Stam and Spigel 2016). Essentially, this literature has created significant arrangements of elements that improve business. These lists of elements have been explored in the entrepreneurship literature before, raising doubts about what the costs of introducing a new concept like the Entrepreneurial Ecosystem are in the first place. And while these elements are delivered as a complicated environment where all factors are perceived to interact, as is often the case in entrepreneurial ecosystem writing, it turns out to be wonderfully confusing to decipher what causes it.

Fourth, the ecosystem framework presented as a system or network that includes many interconnected components without clear relationships. Motoyama and Watkins, (2014) criticized the entrepreneurial ecosystem literature that deals with facility factors without paying due attention to the connections between them, treating all components as equally important. In addition, the entrepreneurial ecosystem literature suggests that component networks at the combined level of the entrepreneurial ecosystem, but also considers networks as one component as part of a larger entrepreneurial ecosystem. And sooner or later, community literature is almost never referred to, both in theoretical and analytical phrases. The entrepreneurship ecosystem literature has not yet yielded a comprehensive systems approach that could reveal insight into, for example, a key exploration of why some entrepreneurship ecosystems can form crucial associations while other entrepreneurship ecosystems neglect to do so (Ter Wal et al. 2016).

5. Further Research Agenda

This study provides insights that have emerged in earlier research on highly rated papers on entrepreneurial ecosystems. In addition, this paper contributes to knowledge generation and provides further directions for future studies. Regarding the conventional dimensions of ecosystems, most works suggest that entrepreneurs need to form strong networks and collaborate to build a thriving environment (Autio et al. 2014; Etzkowitz 2013; Kshetri 2014; Levie 2014; Overholm 2015; Shepherd & Patzelt 2015; Zahra & Nambisan 2012;) The entrepreneurial ecosystem approach has proven to be a supportive environment for ecosystem members to undertake their entrepreneurial activities for further development. Each ecosystem has different members with different characteristics. As a result, creating successful entrepreneurial ecosystems requires a deep understanding of culture and environmental features (Audretsch, D. B., 2015). In addition, it is a key element for leaders to use metrics to find and assess the strengths and weaknesses of actors in ecosystems, to know whether and how to intervene, and to control the effectiveness of the business process (Bell-Masterson, J., & Stangler, D. 2015).

There is a need to create a model capturing both local and nearby systemic components in order to better understand and clarify the varieties in the entrepreneurial movement. Methodologically, it is necessary to create a measurement with regard to the final goal to decide on the qualities and shortcomings of the territorial organization of the enterprise and the connection between each space of the framework so that it is possible to examine most of the usable parts. (Mason and Brown 2012).

Given the generous level of public and private investment in business ecosystems, there is a need to ensure that they are managed in a viable manner so that attractive business outcomes are assured. More research is therefore needed to examine effective governance involving different actors. (Stangler, D., & Bell-Masterton, J. 2015) argue “that a holistic understanding involving the exploration of the perspectives of all actors involved in commercialization networks is often lacking, so researchers should explore the perspectives of different network actors.” Therefore, call for further research of how diverse actors can be organized.

6. Conclusion

The entrepreneurial ecosystem approach has emerged to be a supportive environment for the members of an ecosystem to take entrepreneurial activities for further development. Every ecosystem has different members with different characteristics. As a result, creating a successful entrepreneurial ecosystem demands a deep understanding of the culture and features of an environment. This is one the main duties of policy makers or organizational leaders, to pay attention to these dissimilarities, because without receiving support from the members of the environment, developing an entrepreneurial ecosystem will ultimately fail. Since entrepreneurship is one of the main factors in economic development, we need to continuously improve its effectiveness by identifying different criteria and measures.

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