



ENTREPRENEURIAL ECOSYSTEM INSIGHTS: A REVIEW

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ABSTRACT

An entrepreneurial ecosystem has emerged as a topic of research and debate amongst researchers and policymakers. Entrepreneurial ecosystems have captured the attention of nations in transforming their economies around the creation of innovative products and services, thereby leading to wealth creation and international competitiveness. The literature on entrepreneurial ecosystems is fragmented, and yet no studies have paid attention to integrating the available studies.

This paper aims to provide a review of the literature on entrepreneurial ecosystem in order to create the following contributions. Firstly, this paper provides an insight on entrepreneurial ecosystem studies. Therefore, this study is a systematic effort to map out the research gaps and loopholes on the topic of Entrepreneurial Ecosystem. Secondly, by identifying the knowledge gaps in the contemporary literature, we propose a route for future research on the entrepreneurial ecosystem. This study supports policymakers and scholars in development of new policies conducive to regional systems of innovation and entrepreneurship.

Keywords: Ecosystem; Entrepreneurship; Entrepreneurial Ecosystem; Literature review

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1. INTRODUCTION

Entrepreneurship as an independent scientific discipline deals with innovations, new businesses and corporate growth and has been put at the centre of numerous improvement programs over the previous years. Support of entrepreneurial thinking and acting is the point of financial governmental issues in numerous urban communities. As for the decent variety of business different methodologies infer their own specific condition and definitions. Of all the various possible insights of the topic entrepreneurship (e.g. starting a new business, creating

an effective supporting entrepreneurship ecosystem, growth of the business, innovation, exploiting and discovering opportunities), the initial two are most often used by various researchers throughout their volume and wide shape. The increasing attention paid to the topic entrepreneurship has been persistently showing up amid a decade ago.

Although the amount of literature on entrepreneurial ecosystems is growing, and recently it has attracted the attention of researchers (Mason & Brown 2014; Stam 2015; Zahra & Nambisan 2011), none of the studies have paid adequate attention to integrating the available literature on the entrepreneurial ecosystem. That is to say, the available research on entrepreneurial ecosystem is still small and fragmented. Therefore, this study attempts to fill this gap by categorizing the different articles that exist on the entrepreneurial ecosystem.

Accordingly, this paper aims to provide a review of the literature on entrepreneurial ecosystem in order to create the following contributions. Firstly, this paper provides a comprehensive review on entrepreneurial ecosystem studies. Therefore, this study is a systematic effort to map out the research gaps and loopholes on the topic of entrepreneurial ecosystem. Secondly, by identifying the knowledge gaps in the contemporary literature, we propose a route for future research on the entrepreneurial ecosystem and a way forward for researcher and potentially, guide policy makers to apply the concept more fruitfully.

2. DEFINING ENTREPRENEURIAL ECOSYSTEMS

There is no uniformly acknowledged explanation of entrepreneurial ecosystem, on the other hand numerous attempts have been made recently to define the concept and the definitions of the entrepreneurial ecosystems' domains depend on the research goals. Usually, definitions express the significance confined to a small area and interdependent relations between one-of-a-kind entrepreneurial actors as key elements riding the overall performance of entrepreneurial ecosystem. An entrepreneurial ecosystem is defined by as the interaction of the economic actors, their roles and the external factors that affect the economic activity and the venture creation of a territory (Spilling, 1996). Stam, (2015) offers a broad meaning of entrepreneurial ecosystem as a 'set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship'. Venkataraman, (2004) set out a more comprehensive definition of entrepreneurial ecosystem as, "the environment that fosters the emergence of new ventures, is an interconnected set of elements comprising risk takers, information brokers, resource providers, demand markets and enabling technologies that act together to form a virtuous cycle of wealth creation". Clearly, the dynamic and systemic nature of the concept encompasses multiple actors, institutions and processes.

Daniel Isenberg, driving the Babson Entrepreneurship Ecosystem Project, characterizes an entrepreneurship ecosystem as an arrangement of system of organizations with the target of helping the business person to experience every one of the phases of the procedure of new business creation (Isenberg 2010; Isenberg 2011). He similarly described an entrepreneurship ecosystem into four characters: (1) It consists of six domain names (policy, finance, culture, supports, human capital, markets) (Figure 1). (2) Every entrepreneurship ecosystem is unique - this is why Silicon Valley cannot be replicated. (3) Specifying familiar root causes of the entrepreneurial Ecosystem has restrained practical value because of multi-dimensional purpose-effect family members which might be not possible to tune down to one or two key roots. (4) Entrepreneurship ecosystems emerge as (notably) self-sustaining as soon as all six domain names are robust enough.



Figure 1 Isenberg's model of an entrepreneurship ecosystem

3. INSIGHTS OF ENTREPRENEURIAL ECOSYSTEMS

Actually, numerous insights on the ecosystem exist. The ecosystem can be described as a system that support and manage entrepreneurship (Isenberg, 2010). It features interconnections and exercises among a variety of stakeholders in an entrepreneurial society and the significance of the motivating forces encounter as they behave towards an entrepreneurship-friendly environment (Rodriguez-Pose, 2013) specially discuss fostering synergies between different stakeholders, building new institutional capabilities or stimulation of innovation. Similar topic in relation to the Entrepreneurial Ecosystem mentions (Carlson et. al., 2002).

The concept of entrepreneurial ecosystems is an intrinsically powerful one that acknowledges the significance of entrepreneurial tactics and intellectual conviction frameworks which support cooperation inside an economy. Just as there may be an evolutionary common sense to cluster formation (Feldman and Braunerhjelm, 2006), a few researchers observe that ecosystems are ‘an obviously evolving machine’ (Isenberg, 2010). Figure 1 presents the model of entrepreneurial ecosystem. The essential element of ecosystems are the actors, procedures and institutions which are not at once associated with start-ups, such as massive companies, universities, public bodies, health care structures, banks and stock markets (Mason and Brown, 2014). Entrepreneurial universities specially are broadly seen as vital entrepreneurial actors even as others take the view that their position has been over-said (Brown, 2016). The function of big present organizations, in evaluation, is regularly downplayed with the entrepreneurial environment literature. However, there's tremendous evidence which suggests that big incumbent groups regularly play a critical function in configuring a few ecosystems, as attractors of skilled labour .The incubation of marketers, the spill-over of records and as crucial initial (Eliasson, 2000). In some regions, big exogenous defence organizations play a principal position in shaping Entrepreneurial ecosystem (Adams, 2011). Those roles are pivotal in configuring the person of a nearby entrepreneurial context however will be predisposed to be not noted in a number of the Entrepreneurial atmosphere literature (wef, 2014; spigel, 2015).

3.1. Entrepreneurial Ecosystem pillars and their components

The World Economic Forum (WEF, 2013) thinks about eight pillars of the Entrepreneurial Ecosystems (Foster et al., 2013). Since real contrasts in entrepreneurial system can exist from one region to the next. Foster et al. (2013) examine in the WEF report these pillars and their importance and validity for the entrepreneurs.

Table 1 Entrepreneurial ecosystem pillars and their components

Pillar	Components
Markets	Domestic market: Large/medium/small companies as customers, governments as customer Foreign market: Large/medium/small companies as customers, governments as customer
Human capital	Technical talent, Management talent, Entrepreneurial company experience, Access to immigrant workforce Outsourcing availability,
Finance	Friends and family, Angel investors, Private equity, Access to debt, Venture capital
Supports	Mentors/advisors, Professional services, Incubators/Accelerators, Networks of entrepreneurial peers
Government Policy	Ease of starting a business, Tax incentives, Business-friendly legislation/policies, Access to basic infrastructure,
Education	Available workforce with pre-college education, Available workforce with university education, Entrepreneur-precise education
Universities	Promoting a culture of respect for entrepreneurship, Playing a key role in providing graduates to new corporations, Playing a key role in concept-formation for new ventures
Culture	Success stories/role models Tolerance for risk and failure, Preference for self-employment, Research culture, Positive image of entrepreneurship, Celebration of innovation

These pillars nicely show that the entrepreneurial ecosystems approach presents a shift from traditional economic thinking on firms and markets to new economic thinking about people, networks and institutions (the formal and informal). People are creating new value, organized with a variety of governance forms, enabled and constrained by particular institutional conditions. These entrepreneurial ecosystems approaches provide useful pointers for public policy; they even perceive the role of the government to be very central. They all also emphasize the role of intermediaries and support services (from the private sector) and cultural change, while most of them also explicitly recognize the role of talent and finance. However, they do not provide insights into the fundamental causes of entrepreneurial ecosystems (Acemoglu et. al. 2005) and the subsequent possibilities for public policy interventions. The WEF (2013) study for example concludes that accessible markets, human capital/workforce and funding & finance are most important for the growth of entrepreneurial companies. These are likely to be proximate causes, not fundamental causes of ecosystem success (e.g. human capital and funding is likely to depend on underlying institutions with respect to education and financial markets), and it is far from clear what the necessary and contingent conditions are for successful ecosystems, and what the role of the government and other public organizations is), especially in more fuzzy public-private arrangements. With respect to consequences, the evidence is even thinner: how do ecosystems perform with respect to entrepreneurship rates (as a proximate consequence, output) and more aggregate welfare (as a final consequence, outcome).

The recent popular literature on entrepreneurial ecosystems is directly aimed at the key stakeholders of the ecosystem, mainly entrepreneurial leaders and policymakers rather than an academic audience. The recent entrepreneurial ecosystem literature provides several lists of factors which are deemed to be important for the success of an entrepreneurial ecosystem. Naturally, entrepreneurs (being visible and connected) are considered to be the heart of a successful ecosystem, but successful entrepreneurial ecosystems have multiple attributes (Feld, 2012). Next to the key role of entrepreneurs themselves (in leading the development of the ecosystem and as mentors or advisors) the nine attributes by Feld (2012) emphasize the interaction between the players in the ecosystem (with high network density, many connecting events, and large companies collaborating with local start-ups) and access to all kind of relevant resources (talent, services, capital), with an enabling role of government at the background. Reviews of some of the literature on different regions with various approaches on entrepreneurial ecosystems provide are tabulated in Table-2 below.

Table 2 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 ecosystems 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).
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.
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 1. 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.

David B. Audretsch & Maksim Belitski	2016	<ol style="list-style-type: none"> 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) 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 1. To focus on Business stakeholders rather than the wider variety of players from government and university who also play a critical role. 	<ol style="list-style-type: none"> 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.
Petra Tausl Prochazkova	2016	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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.
Prem kumar Balaraman	2016	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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

4. AN ASSESSMENT OF ENTREPRENEURIAL ECOSYSTEM STUDIES

In spite of its fame, the entrepreneurial ecosystem concept is experiencing various shortcomings that make it as of now hazardous to apply both in earliest 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, with inputs such as economic structures or particular support policies. Qualitative approaches such as (Spigel, 2015) have employed in-depth interviews with entrepreneurs to examine the processes through which ecosystems develop, evolve, and provide resources and support to entrepreneurs. Qualitative approaches are more amenable for examining the complex connections between an entrepreneur and their regional economic social and economic environment because publicly available data cannot easily examine the social relations that make up ecosystems.

First, research on entrepreneurial ecosystem often has a tendency to recognise on a specific place or area to explain the specific features of entrepreneurial ecosystem. But it is not clear how the entrepreneurial ecosystem can explain such variations between regions. More in general, studies on entrepreneurial ecosystem lack a multi-scalar approach that

focuses on the relative importance of non-local versus local linkages, or what kind of institutions at different spatial scales matter in entrepreneurial ecosystem. Some scholars (e.g. Malecki 2011) have placed an emphasis at the significance of global connections among distinctive entrepreneurial ecosystem, because the potential to integrate worldwide understanding is considered crucial for companies to grow to be successful of their domestic entrepreneurial ecosystem. . Multinational firms (Mason and brown. 2014) are perceived the impression to attract skilled employees to the region, upgrade managerial talents of local firms, work as a supply for spin off firms (Neck et al. 2004), and provide enterprise opportunities for local enterprises to get right of entry to global markets.

Second, the entrepreneurial ecosystem literature has been criticized for using a static framework that describes members of the family in Entrepreneurial surroundings without considering their evolution over the years. More in general, the empirical research of the dynamics of networks in entrepreneurship research remains uncommon, regardless of the truth that, it has attracted extensive hobby. Scholars have claimed that the factors of Entrepreneurial atmosphere will shift in significance and of their connections as they evolve (Mason and Brown 2014; Mack and Mayer 2015). This kind of dynamic Entrepreneurial ecosystem framework desires to make specific which factors and family members depend wherein degree, and the way they influence every other over the years.

Third, the entrepreneurial ecosystem literature is searching for clean analytical framework that explains what purpose is and what is effect (Stam and Spigel 2016). This literature has essentially created considerable arrangements of elements that improve entrepreneurship. These lists of elements were investigated within the entrepreneurship literature earlier than, which makes it rather doubtful what the cost incurred in introducing a new concept like Entrepreneurial Ecosystem is in the first vicinity. And whilst these elements are supplied as a complicated surroundings wherein all factors are perceived to influence each other, as frequently occurs in the entrepreneurial ecosystem writing, it turns out to be amazingly perplexing to unravel what causes what.

Fourth, the ecosystem framework presented as a system or network that includes many interrelated component with no clear relationships. Motoyama and Watkins, (2014) criticised the entrepreneurial ecosystem literature have addressing the factors of the device without giving right attention to the connections among them, and treating all components as equally important. Moreover, the entrepreneurial ecosystem literature suggests that networks of components on the combination level of entrepreneurial ecosystem, but also considers networks as just one component is part of a bigger entrepreneurial ecosystem. And sooner or later, nearly no reference is made to the community literature, both in theoretical and analytical phrases. The entrepreneurial ecosystem literature has not yet delivered an exhaustive system approach that could reveal insight, for example, on the pivotal inquiry why some entrepreneurial ecosystem can make crucial associations while other entrepreneurial ecosystem neglect to do so (Ter Wal et al. 2016).

5. FUTURE RESEARCH AGENDA

This study provides reviews that have been emerged in the earlier research of high-ranked contributions about entrepreneurial ecosystems. Additionally, this paper contributes to knowledge generation and provides further directions for future studies. Concerning the conventional dimensions of the ecosystems, most papers suggest entrepreneurs need to create strong networks and collaborate to build a prosperous environment (Autio *et al.* 2014; Etzkowitz 2013; Kshetri 2014; Levie 2014; Overholm 2015; Shepherd & Patzelt 2011; Stam 2015; Zahra & Nambisan 2012;) The entrepreneurial ecosystems 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 Ecosystems demands a deep understanding of the culture and features of an environment (Audretsch, D. B., 2015). Furthermore, a key element is for leaders to use metrics to find and assess the strengths and weaknesses of actors in ecosystems to know if and how to interfere, and to control the effectiveness of the entrepreneurship process (Bell-Masterson, J., & Stangler, D. 2015).

There is a need to build up a model catching both local and nearby systemic components to better comprehend and clarify varieties in entrepreneurial movement. In doing as such, methodologically it is essential to create measurements keeping in mind the end goal to decide the qualities and shortcomings of a territorial arrangement of business enterprise and the connection between every space of the framework, so that most applicable parts can be surveyed and focused on (Mason and Brown 2012).

Given the generous level of both public and private investment into entrepreneurial ecosystems, there is an increased need to ensure that they are viably administered so attractive entrepreneurial results are in certainty accomplished. More research is therefore needed to examine the effective governance involving diverse actors. (Stangler, D., & Bell-Masterton, J. 2015) argue “that a holistic understanding involving the examination of all involved actors' perspectives on networks for commercialisation is often missing, so researchers should investigate the perspectives of divergent network actors.” Therefore call for more research on how diverse actors can be orchestrated.

6. CONCLUSIONS

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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