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## Introduction

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## 1 Introduction

The concept of entrepreneurial ecosystems has received increasing attention over the past decade as governments, private enterprises, universities, and communities have started to recognise the potential of integrated policies, structures, programs and processes that foster regional entrepreneurship activities and can support innovation, productivity and employment growth (Ács et al., 2015; Foster and Shimizu, 2013). A variety of local ecosystems projects has been launched in cities, regions, and countries around the world, particularly in mid-income and advanced economies (Mason and Brown, 2014). The active participation of various stakeholders has been identified as a key success factor for entrepreneurship ecosystem creation. Global surveys indicate that the interest in entrepreneurship ecosystems continues to grow as local public and private leaders feel increasing pressure to stimulate economic growth by supporting more and successful entrepreneurial activities in a given geography (Foster and Shimizu, 2013).

Since early ground-breaking studies of Silicon Valley and Route 128 (Saxenian, 1994), the phenomenon of entrepreneurship ecosystems has been investigated in a variety of different research streams (Hwang and Horowitz, 2012; Prahalad, 2005) focused on policy advice (Isenberg, 2011; Mason and Brown, 2014; World Economic Forum, 2014), as well as deeper academic understanding (Ács et al., 2014, 2015). The fundamental idea of an entrepreneurship ecosystem is to create a conducive environment to support innovation, the formation of new successful firms, and corresponding sustainable employment growth within a specific geographic region (Brekke, 2015; Garud et al., 2010).

The entrepreneurship ecosystem is a highly complex multi-level construct. At the regional field level, it includes stakeholders, such as political decision makers, government agencies, universities and industry associations (Isenberg, 2011; World Economic Forum, 2014). At the firm level, the activities of new start-up and existing small or larger firms represent the engine to spur innovation-based regional economic development. The relevant activities often spread across organisational boundaries as knowledge and resources are shared. Actually, the relevant firms may include firms that provide valuable services to entrepreneurial firms, such as patent law firms, venture capitalists, and others. At the group and individual level, individuals engage in micro-activities that determine any firm-level outcomes. In addition, this micro-level focus is crucial for any investigations of entrepreneurial activities that precede and eventually may lead to the creation of a new venture (Alsos and Kolvareid, 1998).

Based on the assessment of the prior literature and research, we argue that the concept of entrepreneurship ecosystem is underdeveloped in three ways. First, the concept of entrepreneurship ecosystem and the related empirical research have remained undertheorised. Consequently, opportunities persist for a better integration not only with the rapidly accumulating entrepreneurship research, but also with general organisational theory and research. Second, still little is known as to what factors and especially interactions of factors at various levels of analysis lead to desired economic development outcomes. Third, substantive conceptual disagreements remain with regard to what constitute desired outcomes of entrepreneurship ecosystems and how to capture them. Clearly, the objectives of the various stakeholders and actors in an entrepreneurship ecosystem differ, but may at the same time substantially overlap. Any focus on sustainable desired outcomes requires more comprehensive and long-term investigations than what we so far typically find in the related research. Finally, these issues also have methodological implications. Stronger theory development can enable more deductive empirical research focused at testing specific hypotheses. Recent improvements in multi-level research methodologies have created opportunities for more systematic investigation of cross-level effects and phenomena – such as entrepreneurship ecosystems. Sustainability ideas have broadened the perspective with regard to desired outcomes, which implies research capturing multiple outcomes and with a more long-term perspective.

The rest of the paper is organised as follows. First, we offer some thoughts on the current state of entrepreneurship ecosystem research – including comments on some recent developments. Then, we discuss how the studies included in this special issue contribute to our understanding of entrepreneurial ecosystems. Finally, we offer some additional thoughts related to the future progress of entrepreneurial ecosystem research.

## **2 Entrepreneurship ecosystems**

The concept of entrepreneurship ecosystem refers to a network of relationships that enables interactions between a wide range of institutional and individual stakeholders to foster entrepreneurship, innovation, and regional economic growth (Isenberg, 2010, 2011). The term entrepreneurial ecosystem was used by Prahalad (2005) and Cohen (2006) to describe conditions in which the individual, business, governments, civil society, and development partners come together regionally to support entrepreneurial activities with the objective to generate economic wealth and prosperity. The antecedents of earlier work relates to regional agglomeration (Fujita and Thisse, 2002), innovative regional clusters (Saxenian, 1994), industry clusters (Feldman et al., 2005; Porter, 1990), national innovation systems (Lundvall, 1992), and business ecosystems (Moore, 1993).

Entrepreneurs are most successful when they have access to the human, financial, and professional resources they need, and operate in an institutional environment in which norms and policies encourage and safeguard entrepreneurs. Entrepreneurship flourishes in ecosystems in which multiple stakeholders play key synergistic roles, which often requires multi-stakeholder collaboration (Van de Ven, 1993). Stakeholders are any entity that has an interest, actually or potentially, to support and encourage more

entrepreneurship in a specific geographic region. Stakeholders may include among others: government agencies, universities, business associations, private sector organisations, investors, banks, entrepreneurs, social leaders, research centres, labour representatives, lawyers, cooperatives, private foundations, and international aid agencies. Multi-stakeholder collaboration requires the formal and informal exchanges of information in order to conduct joint activities and enable coordination of activities among various stakeholders. Hence, the formation of entrepreneurship ecosystems implies that the involved stakeholders collaborate to create local conditions that foster entrepreneurial activities. This notion implies that all stakeholders and actors work together to support entrepreneurs to help them develop and grow new businesses. Prior research indicates that the combinations observed differ across regions that have evolved organically for years depending on the social, economic, political, cultural, and geographic conditions (Cohen, 2006; Kshetri, 2014). The entrepreneurs and their firms are a key ingredient and an outcome of successful entrepreneurship ecosystems (Isenberg, 2011).

The interdependent and multilevel nature of entrepreneurial ecosystems and their components implies the notion of potentially crucial synergistic effects of systems components including cross-level interactions (Isenberg, 2011; Prahalad, 2005; Spigel, 2015). The current research on entrepreneurship ecosystems, however, has primarily focused on determining the presence and effects of single entrepreneurship components and investigations focused at a single level of analysis. In general, dynamic interdependencies between the various system components have received limited research attention. Hence, entrepreneurship ecosystem research is still in its early stages and much additional, especially empirical, work still needs to be conducted. Beyond a better understanding of interaction effects between the activities of the various stakeholders and actors, the evolutionary dynamics of entrepreneurial ecosystem development and the identification of corresponding stages of entrepreneurship ecosystems development deserve research attention. Finally, the identification of fundamentally different types of entrepreneurship ecosystem configurations represents a promising field for future explicit and systematic research investigations – especially, considering the substantial context differences across different countries and regions.

### **3 Contributions of this special issue**

The papers included in this special issue are extended versions of papers presented at the 6th Indonesia International Conference on Innovation, Entrepreneurship, and Small Business (IICIES) held on the island of Bali from August 12th to August 14th, 2014. The conference was organised by the School of Business and Management, Bandung Institute of Technology. This school has pioneered the first undergraduate entrepreneurship degree program in South-East Asia in 2013, which requires students to start a business before they graduate. The school has created an ecosystem that supports students to become young entrepreneurs.

The IICIES conference attracted over 200 abstract submissions of which 80 were accepted for presentation. Around 200 researchers from universities in Indonesia and more than 15 other countries attended the conference. The authors of ten presented papers

were invited to submit extended versions of their papers to this special issue. Each paper was peer-reviewed by at least two reviewers and the editors. Finally, six papers were accepted for publication in this special issue based on their quality, originality, and theory contribution.

Overall, this special issue contributes to a more comprehensive understanding of the opportunities and challenges associated with entrepreneurship ecosystems. An effective entrepreneurship ecosystem depends on the integration of activities of various stakeholders at three different levels, namely the strategic level (policy making), the institutional level (support institutions), and the enterprise level (entrepreneurs and business entities). The papers included in this special issue cover three different levels of analysis. Mirzanti et al. investigate issues of policy setting for entrepreneurship ecosystems. Mayangsari et al. and Rustiadi address community-level issues. Fukuyo, Harsanto and Roelfsema, and Indrawati et al. focus on issues directly related to the enterprise level of analysis.

Mirzanti et al. conducted a descriptive study of governmental entrepreneurship policy implementation in Indonesia. The objective of ecosystem policy is to improve the environment in which entrepreneurs and other stakeholders operate. However, it is not obvious whether and how specific government interventions promote the emergence of entrepreneurial ecosystems and stimulate key processes that support start-ups and spin-offs. The researchers apply content analyses to information about government policies targeted at the micro, meso, and macro level. As a first result, they identify 12 distinct government programs targeted at supporting entrepreneurship and offer a comprehensive overview of these various government programs. This information provides policy makers with valuable information for a better coordination and potentially prioritisation of the numerous programs. From an academic perspective, this research offers a rich case study of a single country's broad governmental efforts to support entrepreneurship and the creation of entrepreneurship ecosystems. It raises important questions about the opportunities related to more customised and structurally coordinated entrepreneurship policy.

Mayangsari et al. approach an entrepreneurship ecosystem as a viable value-creation model. Their study analyses Batik Solo industrial cluster as an entrepreneurship ecosystem with a collective goal. The authors propose an 'ideal' performance structure so that all subsystems internally accomplish their function and at the same time co-achieve the goal of empowering the ecosystem externally. To that purpose, the viable system model (VSM) introduced in this study promises guidance for program development, evaluation and improvement from fundamental operations all the way to policy management. It builds on the concept of value co-creation from service science perspective – including opportunities for collaborative innovation with customers. Overall, the authors argue for a stronger focus on customers as the crucial element determining entrepreneurial firm success. The VSM offers an industry model that identifies and captures various factors and roles from a viable value co-creation perspective. This model contains five key functional and complementary elements labelled:

- 1 operation
- 2 coordination
- 3 integration

4 intelligence

5 brain.

The study further highlights how in the case of the Batik Solo industrial cluster the dominant and connecting role of the government caused a bottleneck that constrained entrepreneurial activities in the batik Solo industrial cluster.

Rustiadi presents the findings from an in-depth investigation of the development of creative industries in the Indonesian City of Bandung with a particular focus on identifying implications for the education system. The authors conducted interviews with creative industry participants, representatives of arts organisations and involved government officials. In their analyses, the researchers applied three fundamentally different well-established schools of thought to explore how education system is addressing key fundamental educational issues. On a practical level, the research offer side as and recommendations to various stakeholders on how to design and implement better strategies for the development of educational systems that support creative industries.

Fukuyo investigates changes in attitude and behaviour related to renewable energy sources after the Japanese nuclear power disaster in 2011. A two-wave online survey conducted in 2012 and 2013 indicates that more than half of the Japanese population, enhanced their awareness of energy conservation and became more interested in the renewable energy after the 2011 disaster. Interestingly, this effect is especially strong among individuals, who already use photovoltaic systems. This study is primarily descriptive in nature and its results are consistent with expectations about increased interest in renewable energy. At the same time, the study also raises some important more general issues with regard to the relevance and potential integration of customers as stakeholders into entrepreneurship ecosystems. For example, customers may turn entrepreneurs or their creative and innovative response to challenges may affect and change an entrepreneurship ecosystem. Energy customers therefore can be conceptualised as playing an integral part and role in entrepreneurship ecosystems. Observed changes in customer attitude and behaviour have the potential to not only change the demand for current technology, but also affect and reshape the entrepreneurship ecosystem and its outcomes in more fundamental ways over time.

Indrawati et al. explored how entrepreneurial companies deal with environment uncertainty. Environment uncertainty implies that entrepreneurs have to frequently adapt their activities in response to unanticipated environmental conditions. The contribution of this research to the entrepreneurship ecosystem literature is to reinforce the importance of micro-level psychological processes as an underlying fabric of entrepreneurial ecosystems. Based on data from 26 start-up SMEs in a large Indonesian city, the authors argue that environmental complexity and entrepreneurial self-efficacy clearly affect entrepreneurial alertness. The authors also report an unexpected relationship between entrepreneurial alertness and entrepreneurial commitment that deserves future investigations. In general, this study highlights and reinforces the importance of the entrepreneurial alertness construct for the identification and exploitation of business opportunities.

Harsanto and Roelfsema focused on the important role of entrepreneurs as firm founders, key decision makers and organisational leaders. They focus on the interdependence of leadership style of senior management, entrepreneurial orientation of the firm, and firm performance. Based on data from 209 small and medium sized

companies in the Greater Bandung Area in Indonesia, they found that traditional leadership styles that stress liberal laissez-faire attitudes are more effective than transformational leadership. Positive effects of transformational leadership on sales growth required the context of an entrepreneurial firm. This later finding suggests that certain leadership approaches might be more appropriate in the context of entrepreneurial ecosystems where entrepreneurial firms are the norm rather than the exception.

#### 4 Conclusions and future research

In the era of increasing attention to broader and more comprehensive approaches to entrepreneurship, the concept of entrepreneurship ecosystems has proven a promising field of research that helps capture interdependent entrepreneurial activities at various levels of analysis and involving a variety of quite heterogeneous stakeholders and actors. Obviously, related more comprehensive and broader causal models imply substantial theoretical and empirical challenges. The studies contained in this special issue address some of the related issues empirically, but in the process also raise a multitude of additional interesting questions for future research. Hence, the field of entrepreneurial ecosystems is still in the early and emerging stages – and future research is urgently needed to advance our understanding of this promising approach to economic development.

As indicated earlier, we believe this future research would benefit from a stronger theory orientation and from considering some emergent methodological opportunities. For a stronger theory orientation, there are of course a multitude of alternative theories available that researchers may draw on. Beyond theories that have been developed in other fields of research focused on single levels of analysis, researchers should also consider drawing on theories specifically suited for the investigation of dynamic cross-level interdependent activities within organisational fields and communities of heterogeneous actors. For example, the management field has now accumulated an impressive body of research on what Levitt and March (1988) have labelled *ecologies of learning*. In these ecologies, learning processes occur at the individual, group, organisation, and industry level with the potential to affect organisational emergence, performance and survival. This approach highlights that organisational learning often embedded in the actions of many other learning entities within a community of organisations and institutions, and that these entities are simultaneously learning and changing at multiple levels of analysis (Miner et al., 2003; Miner and Anderson, 1999; Levinthal, 1997). So far the research on ecologies of learning has remained highly fragmented – however, the developed conceptual frameworks hold substantial promise for better theory-guided investigations of ongoing cross-level learning processes in entrepreneurship ecosystems and for a deeper understanding of resulting economic development patterns. Hence, future researcher should strongly consider drawing on ecologies of learning or similar theory-based frameworks that conceptualise dynamic interdependent and nested learning and other activities by multiple organisations and stakeholders.

From a methodological perspective, progress in the field of entrepreneurship ecosystems will depend heavily on the accumulation of evidence across studies and studies with a variety of different research questions and research methodologies. The

phenomenon is simply too complex and our current understanding too limited, to enable any very specific guidance of the type of investigations that are most likely to lead to important insights. It seems, however, relatively safe to argue that scholars should not shy away from both deeper investigations of very specific issues and research questions as well as broader and more comprehensive investigations that try to capture effects in their interdependence. Beyond single case studies, we believe comparative case studies (Eisenhardt and Graebner, 2007) remain an under used emerging research methodology. For example, studies comparing not only the actions of multiple firms within the same ecosystem, but also comparative studies across and between entire ecosystems. Process research (Langley et al., 2013) represents another currently emerging research methodology with substantial potential for advancing entrepreneurship ecosystems. These methodologies provide guidance for more systematic investigation of dynamic emergence and learning processes not only on the individual and firm level, but also on the ecosystem community level.

As the accumulated prior research and the studies included in this special issue clearly indicate, the complexity and heterogeneity of the entrepreneurship ecosystem construct suggest that future academic research is most likely to benefit not only from a greater number of studies, but also from a greater variety of serious systematic empirical investigations – drawing both on well-established, as well as, recently emerging theories and research methodologies.

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