

Exploring the Idiosyncratic Nature of Entrepreneurial Ecosystems

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List of Abbreviations

ANDE	Aspen Network of Development Entrepreneurs
COO	Country of Origin
COR	Country of Residence
MNE	Multinational Enterprise
OECD	Organisation for Economic Co-operation and Development
RA	Research Assumption
RP	Research Proposition
RQ	Research Question

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Part 1: Introductory Paper

1 Introduction

1.1 Research Background

While entrepreneurship exists everywhere in the world, some regions generate significantly more start-up companies than others. In this regard, Silicon Valley is the epitome of innovation. No other region has created comparably high numbers of powerful start-ups impacting the lives of billions of people around the globe. The services of companies — such as Facebook, Google, Apple, Airbnb, Uber, and Tesla — have not only created completely new markets but have also contributed to the well-being of the San Francisco Bay Area. The success of Silicon Valley, which was estimated as having a value of 312 billion US-Dollar in 2019 (Startup Genome, 2019), illustrates the contributions of start-up activity to the prospering economy of a region. This example demonstrates that start-up companies are drivers of regional innovation causing related positive socio-economic effects. These include the generation of jobs and productivity and the formation of new industries, which leads to advantages in regional competitiveness, as well as wealth generation (Cunningham & O'Reilly, 2018; Morris, Neumeyer & Kuratko, 2015; Mason & Brown, 2014).

Inspired by Silicon Valley's success, policymakers around the globe have understood the potential of start-up companies for the development of the own region. Consequently, they have placed start-ups (defined as young, scalable, and innovative firms; Ripsas & Tröger, 2015) in the center of their political agendas for regional development (Mason & Brown, 2014). Despite the interest accorded, traditional policy attempts (such as granting tax incentives) turned out to be ineffective in engendering sustainable start-up company developments, which evoked debate among policymakers and scholars about the appropriate policy measures for supporting regional start-up activity (cf. Mason & Brown, 2014, Brown, Mason & Mawson, 2014).

Research contributed to the debate by suggesting taking a holistic approach when aiming at supporting start-up activity in a region. According to Moore (1993: 75), companies do not act in a “vacuum” but are embedded in a system consisting of diverse interrelations. Subsequently, the success of Silicon Valley is not attributed

to specific start-up companies but to the overall support environment for entrepreneurship in the Bay Area. Following these considerations, the research field of entrepreneurial ecosystems emerged, with the goal of illuminating the favourable regional environments for start-up activity.

While research on entrepreneurial ecosystems has grown mainly over the last decade, it is still in an infant stage, especially regarding taking a holistic view on interconnections between ecosystem elements and their mutual influences (Malecki, 2018; Maroufkhani, Wagner & Ismail, 2018; Alvedalen & Boschma, 2017). This status may be attributed to the complexity of the phenomenon, as entrepreneurial ecosystems are multiple-level phenomena consisting of several elements occurring on different interrelated ontological levels (cf. Cunningham, Menter & Wirsching, 2019). Previous studies have investigated various aspects of entrepreneurial ecosystems on three ontological levels: (i) structural, (ii) inter-actor, and (iii) actor.

- (i) The first level is related to the structure of entrepreneurial ecosystems. Research focusing on this level deals with the discussion around the development of conceptual models of entrepreneurial ecosystems that display the resources making up ecosystems (e.g., Isenberg, 2011; Spigel, 2017; Stam, 2015; WEF, 2013), their interconnections (Juling, Freiling & Harima, 2016; Mason & Brown, 2014), and their evolutions over time (Mack & Mayer, 2016).
- (ii) Research on the inter-actor level focuses on the inner ecosystem dynamics of interactions among mutual stakeholders (Ghio, Guerini & Rossi-Lamastra, 2019; Erina, Shatreovich & Gaile-Sarkane, 2017) and specific network structures (e.g., Hayter, 2016a; McAdam, Harrison & Leitch, 2019), as the interplay of actors is the driving force of ecosystem structure emergence (Colombo et al., 2019).
- (iii) The third level deals with studies concentrating on the actions and influences of individual actors and actor groups within entrepreneurial ecosystems (e.g., Bhawe & Zahra, 2019; Roundy, 2017; Spigel, 2016). While all actors in interplay are seen as drivers of ecosystem development (Mason & Brown, 2014), the question arises whether certain actors are more important than others regarding their contributions to ecosystem development. Therefore, ecosystem

research strives to identify which roles the various actors play in ecosystems and whether or not their contributions are universal or differ depending on the geographic context (Audretsch et al., 2019).

Rather than considering a multi-dimensional view on ecosystem inter-level element interconnections and their mutual influences (Malecki, 2018; Maroufkhani, Wagner & Ismail, 2018; Alvedalen & Boschma, 2017), the focus of prior research on aspects within these three different ontological levels has led to a contradictory development between policy recommendations of researchers and practitioner activities. Ecosystem research argues that entrepreneurial ecosystems are unique, due to specific regional prerequisites (Isenberg, 2011; Mason & Brown, 2014). Thus, ecosystems possess idiosyncratic natures which cannot be transferred among regions. As to the complexity of the ecosystem construct, few concrete implications on how to foster the emergence of sustainable ecosystems have been derived because of the relatively early stage research on the topic and the highlighted idiosyncratic nature of ecosystems. Despite these academic discussions, the willingness of policymakers to emulate Silicon Valley's success structure in their own region is evident (cf. Isenberg, 2011; Startup Genome, 2017). Building on first empirical results but neglecting their context specificity and preliminary statuses, policy consultants have developed overly general suggestions for ecosystem emergence, neglecting the influence of regionally specific factors, as criticized by Stam & Spigel (2017).

Previous research has played a part in this opposite development. The conceptual models developed have tried to make a simple overview of the relevant resources making up an ecosystem (e.g., Mazzarol, 2014; Isenberg, 2011; Neck et al., 2004). These models allow for an understanding of ecosystems as isomorph constructs whose elements could be transferred to other regions, as the factors and underlying mechanisms contributing to the idiosyncrasy of entrepreneurial ecosystems are invisible in these frameworks. Despite this conceptual shortcoming, ecosystem research emphasizes that understanding the regional uniqueness of entrepreneurial ecosystems is more important for policymakers and scholars than generalizing the phenomenon to derive a standardized approach (Mack & Meyer, 2016; Auerswald, 2015; Hechevarria & Ingram, 2014; Motoyama et al., 2014; Isenberg, 2010; Audretsch, 2015; Zacharakis, Shepherd & Coombs, 2003). While this position is

comprehensively argued, it lacks theoretical foundation and empirical evidence. While the research on entrepreneurial ecosystems is under-theorized in general (Audretsch et al., 2018; Stam, 2015), Brown & Mason (2017) highlighted the need to specifically provide a theory-based explanation of the idiosyncrasy argument of entrepreneurial ecosystems.

1.2 Research Aims and Questions

Addressing the research gaps discussed above, this thesis aims at contributing to founding the heterogeneity of entrepreneurial ecosystems theoretically and to exploring relevant dimensions with empirical inquiries. It will further develop the understanding of the entrepreneurial ecosystem construct by exploring the unique and idiosyncratic nature of entrepreneurial ecosystems. By carving out and explaining the defining factors of entrepreneurial ecosystem idiosyncrasy on the ecosystem structural level theoretically, and by giving empirical proof via detecting the influencing roles that the inter-actor level and the actor level play in ecosystem idiosyncrasy to consider the bottom-up emergence of ecosystems, this cumulative dissertation aims to answer the following two overarching research questions (RQ):

RQ 1: Which factors constitute the idiosyncrasy of entrepreneurial ecosystems?

RQ 2: How do the inter-actor and actor levels of entrepreneurial ecosystems contribute to creating the ecosystem's idiosyncratic nature?

1.3 Structure of the Introductory Paper

To respond to the research questions, the structure of the introductory paper is as follows. Chapter 2 introduces information on the conceptual background of entrepreneurial ecosystems. The concept will be briefly defined; relevant approaches, elements, inter-actor activities, and actors will be reviewed; and identified research gaps will be outlined. Three levels of entrepreneurial ecosystems –structural, inter-actor, and actor– are identified to pigeonhole previous research on the topic and to position the dissertation in the overall research field. A multiple-level conceptual

framework is developed in this process as an analytical tool for considering the holistic view on the topic, including all ontological levels of entrepreneurial ecosystems.

Chapter 3 gives an overview of the aims, methodological approaches, key findings, and contributions of the four articles considered for this dissertation. As each has its own research questions differing from the thesis's overarching ones, chapter 3 concentrates on summarizing the individual articles' contributions to ecosystem research. An overview of the articles, including information on the place of publication/submission and co-authorship, is given in Appendix 1 (p. VIII). Chapter 4 compiles the findings of the individual articles and explains the results in the context of the overarching research questions. Figure 1 illustrates the relationship between the dissertations' articles and the overarching research questions.

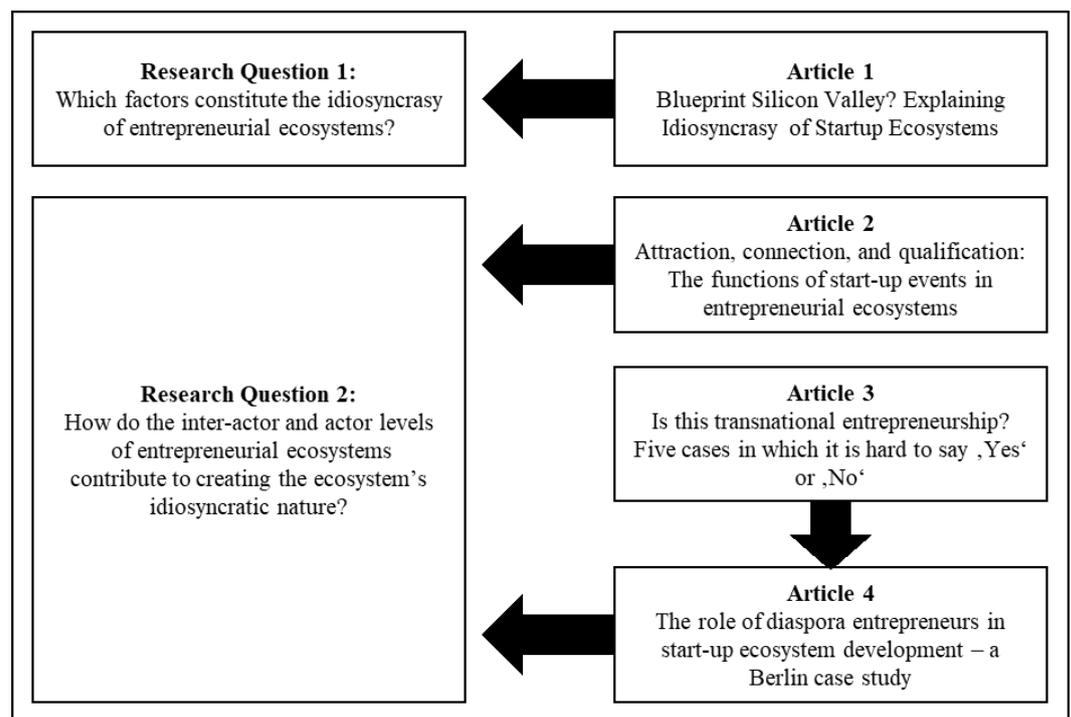


Figure 1: Overview of the articles.

Article 1: ‘Blueprint Silicon Valley? Explaining the Idiosyncrasy of Startup Ecosystems’ (Baron & Freiling, 2019) theoretically discusses the uniqueness of entrepreneurial ecosystems by employing resource-based approaches. The article develops research propositions concluding that ecosystems are idiosyncratic in their resource structure, actor composition, distinctive community cultures, and dynamic

developments over time due to working isolating mechanisms. Article 1 serves the function of the theoretical foundation of the dissertation and directly addresses RQ1.

After outlining the selection of ‘start-up events’ and ‘diaspora entrepreneurs’ as eligible factors to illustrate influences of the inter-actor and actor level on the idiosyncrasy of entrepreneurial ecosystems, Article 2 will be introduced. **Article 2: ‘Attraction, Connection & Qualification – The Functions of Start-up Events in Entrepreneurial Ecosystems’ (Baron, under review)** is based on empirical case studies on start-up events in Berlin and Bremen (Germany). Their identified roles contribute to the discussion on ecosystem idiosyncrasy addressing RQ 2.

Article 3: ‘Is this transnational entrepreneurship? Five cases in which it is hard to say ‘Yes’ or ‘No’ (Harima & Baron, forthcoming) prepares the actual investigation on the role of diaspora entrepreneurs in entrepreneurial ecosystems (Article 4). According to the *Global Startup Ecosystem Report (2019)* entrepreneurs with transnational backgrounds are relevant actors in these environments, due to their high presence in successful ecosystems. Due to the ambiguity of the term ‘transnational entrepreneurship’ in the status quo of research, Article 3 identifies suggested defining characteristics of transnational entrepreneurship from previous research and contrasts them with heterogeneous empirical data. While the article contributes to the terminological discussion by developing propositions regarding characteristics not considered in previous research, it cannot solve the terminological ambiguity. To still be able to detect the impacts of entrepreneurs with distinctive characteristics caused by their migration background and experiences, **Article 4: ‘The Role of diaspora entrepreneurs in start-up ecosystem development – a Berlin case study’ (Baron & Harima, 2019)** focuses on a clearly defined group of migrant entrepreneurs – the diaspora entrepreneurs (Safran, 1991) – to avoid difficulties with data collection. The article identifies them as auspicious co-creators of Berlin’s entrepreneurial ecosystem resource structure, thereby addressing RQ 2.

Chapter 5 draws a conclusion by outlining the dissertation’s research contributions and its limitations and implications, as well as considering future research perspectives.

2 Conceptual Background of Entrepreneurial Ecosystems

This chapter introduces the conceptual background of the thesis. After a terminological overview, previous research findings are briefly reviewed in line with three identified ontological levels of entrepreneurial ecosystems: the structural, inter-actor, and actor. Research gaps concerning each of the levels, which this thesis addresses, are carved out. By so doing, a multiple-level conceptual framework of entrepreneurial ecosystems considering these three levels is developed step-by-step as conceptual basis for the thesis.

2.1 Definition

The origin of the term ‘ecosystem’ stems from ecology science and emphasizes the interactions of organisms with their physical environment (Tansley, 1935). Since Valdez (1988) and Moore (1993) transferred the term to the business literature, the popularity of the concept has increased in different fields of business research, leading to an inconsistent picture of its underlying concept and usage (Audretsch et al., 2019). A rather new focus is the concept of entrepreneurial ecosystems. While a consensus on a shared definition of the term has not been established to date (Stam, 2015), the core idea refers to the ecological approach of the natural ecosystem in which organisms interact with each other and their environment in an interconnected manner which profits not only the ecosystem members through spillover effects but the outcome of the overall system. While existing definitions on entrepreneurial ecosystems vary in extent and input factors (Spilling, 1996; Mason & Brown, 2014; Stam, 2015; Mack & Meyer, 2016; Audretsch & Belitski, 2017; Roundy, Brockman & Bradshaw, 2017, Spigel, 2017), they all describe a holistic view on bounded environments consisting of resources and independent actors that act together to create favourable conditions for high-growth business emergence. Stam & Spigel (2017: 1) summarized these key aspects and defined an entrepreneurial ecosystem as a “set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory.” While the boundaries of entrepreneurial ecosystems are not clearly defined, due to the application of the concept on national scales (e.g., Acs et al., 2016; 2017; Autio et al., 2014), local scales (Cohen, 2006; Feld, 2012; Spigel, 2016) and micro scales, such as ecosystems

around universities (Miller & Acs, 2017; Hayter, 2016; Wrigth, Siegel & Mustar, 2017), a consensus can be noted on the output, described as the enablement of “productive entrepreneurship” (Stam, 2015: 1765).

Besides defining the entrepreneurial ecosystem concept, research on the topic contributed to delimitating entrepreneurial ecosystems from antecedent concepts such as industrial clusters and innovation systems (e.g., Spigel & Harrison, 2018; Stam & Spigel, 2017) to demonstrate the need for an independent research field. Contrasting the core of clusters and innovation systems by placing the entrepreneur in the middle of considerations instead of firms, by describing a community-led emergence, and by highlighting the absence of a specific sector focus, research explained the clear-cut differences of the entrepreneurial ecosystem approach (Spigel & Harrison, 2018; Acs et al., 2017; Spigel, 2016).

2.2 Research Areas

The ecosystem construct is per se complex, as it consists of various interconnected elements on different interrelated ontological levels (cf. Cunningham, Menter & Wirsching, 2019; Maroufkhani, Wagner & Ismail, 2018). Previous research has concentrated on capturing the entrepreneurial ecosystem construct with its relevant elements, explaining its inner dynamics, and investigating relevant actors and their roles in the overall context. Despite the call for taking a holistic view of the ecosystem phenomenon, previous research focused mainly on specific aspects within different ontological levels. The following sub-chapters review previous research findings and related research gaps on three identified levels of entrepreneurial ecosystems: the structural, inter-actor, and actor levels. Based on the review, a multiple-level model as conceptual basis for the dissertation is derived step-by-step to arrange previous research findings on the topic in a holistic manner, as well as to position the articles considered for this cumulative dissertation in the research field of entrepreneurial ecosystems and thus show their interrelations.

2.2.1 Structural Level: Elements and Conceptual Frameworks

A variety of conceptual pictures has been developed illustrating relevant regional resources making up an ecosystem (e.g., Spigel, 2017; Stam, 2015; WEF, 2013).

The underlying assumption of these models is that the presence of specific components determines whether a successful ecosystem emerges in a region (West & Bamford, 2005). Summarized in table 1 are the components identified by previous literature which show the resource categories needed in a region for sustainable ecosystem emergence, according to the authors cited.

Author(s) (Year)	Categories	Components
Neck et al. (2004)	Components	Culture, physical infrastructure, large corporations, talent pool, capital sources, professional/support service, government, university, informal networks, formal networks, incubator organizations, spin-offs
OECD (2007)	Determinants	Regulative framework, R&D and technology, entrepreneurial capabilities, culture, access to finance, market conditions
Isenberg (2011)	Domains	Policy, Finance, Culture, Supports, Human Capital, Markets
Suresh & Ramraj (2012)	Support Factors	Moral, Financial, Network, Government, Technology, Market, Social, Environmental
ANDE (2013)	Pillars	Accessible Markets; Human Capital Workforce; Funding and Finance; Mentors, Advisors, Support Systems; Regulatory Framework & Infrastructure; Education & Training; Major Universities as Catalysts; Cultural Support
Mazzarol (2014)	Components	Government policy, regulatory framework & infrastructure, funding & finance, culture, mentors, advisors, & support systems, universities as catalysts, education & training, human capital & workforce, local & global markets
Stam (2015)	Elements	Networks, Leadership, Finance, Talent, Knowledge, Support services / Intermediaries, formal institutions, culture, physical infrastructure, demand
Juling, Freiling & Harima (2016)	Capitals	Human capital, social capital, financial capital, infrastructure capital, political capital, economic capital, cultural capital, historical capital.
Spigel (2017)	Attributes	Cultural, Social, Material

Table 1: Components of entrepreneurial ecosystems according to the authors. (Source: Baron & Freiling, 2019).

Although the components are listed under differing category terms and vary in complexity, there are many overlaps. As relevant ingredients, all models consider cultural, financial, and market aspects and the relevance of human capital, networks, and policy, as well as formal and informal institutions. While the identification of these essential aspects contributes to the understanding of entrepreneurial ecosystem critical components, most of the concepts developed thereby are either built on practitioners' observations or lack a theoretical foundation (Audretsch et al., 2018; Brown & Mason, 2017; Juling, Freiling & Harima, 2016). Spigel (2017) applied a grounded theory approach for his conceptual model building to overcome these drawbacks, thus contributing to entrepreneurial ecosystem theory building. However, he classified resources and actors in his model on the same ontological level

under the three pillars of cultural, social, and material attributes. This grouping oversimplifies the complexity of the ecosystem construct and impedes a differentiation on the influences on ecosystem emergence through resources stemming from a co-creation by the interaction of ecosystem actors or from specific individuals.

Addressing these critiques, Juling, Freiling & Harima (2016) synthesized previous approaches to one conceptual model, which was theoretically backed by Freiling & Baron (2017). The authors employed arguments from the resource-based view (Barney, 1991; Freiling, 2004) and the related Austrian capital theory (Lachmann, 1978; Foss & Klein, 2012) to contribute to the development of a theoretical backed concept – the Capital Model of Entrepreneurial Ecosystems (Juling, Freiling & Harima, 2016). The model comprises eight capitals arranged in different layers, which in interplay make up an ecosystem and thereby acknowledge identified components of entrepreneurial ecosystems from previous conceptual models, while outpacing their weaknesses. Relevant resources are classified into categories which are termed – in the application of the Austrian capital theory – as *capitals*. (i) Human and (ii) social capital stand in the core of the model and represent the entrepreneur's experiences and skills (Becker, 1975) as well as their networks and social interactions (Adler & Kwon, 2002). Supportive elements for entrepreneurial activities are placed in the second layer and comprise (iii) financial capital, (iv) political capital, (v) economic capital, and (vi) infrastructure capital. The manifestation of these elements is influenced by the third layer, which constitutes the (vii) cultural capital or cultural aspects of the entrepreneurial local community, such as the perception towards entrepreneurship in general and failure in specific (Juling, Freiling & Harima, 2016). The fourth layer represents the (viii) historical capital which has affected the presence and emphases of the aforementioned capitals in a region (Juling, Freiling & Harima, 2016). Mason & Brown (2014) call attention to the fact that the presence of stand-alone ecosystem elements does not create a favourable environment for entrepreneurial activity. It is rather the combination and interaction of these elements which defines the evolution and strengths of the entrepreneurial ecosystems, their so-called 'capital structure' (Freiling & Baron, 2017: 71).

While the capital model and its theoretical underpinning highlights that ecosystem elements are co-created by several actors, its illustration is rather complex. Alvedalen & Boschma (2017) criticized that it is difficult to determine cause and effect in such complex frameworks, in which all elements influence each other. Maroufkhani, Wagner & Ismail (2018) added that conceptual models of ecosystems tend to be too complex. While the essential elements become clear and their interrelatedness is highlighted, the underlying processes of the element' interactions and resource combinations in regard to a capital structure are not captured, due to the model's static nature (Malecki, 2018; Alvedalen & Boschma, 2017). Maroufkhani, Wagner & Ismail (2018) suggested focussing on sub-systems of ecosystems and how they interact as a promising direction to develop the conceptual understanding further. Brown & Mason (2017) emphasized the need to consider both ecosystem structure and actors to acknowledge the complexity of ecosystems appropriately.

In line with the made suggestions by previous research, a multiple-level conceptual model of entrepreneurial ecosystems is developed step-by-step below. It reflects the three identified levels as sub-systems of ecosystems to capture the impacts of those actors' co-creation processes on ecosystem evolution. Following the capital approach (Juling, Freiling & Harima, 2016), due to the concepts' theoretical strengths, a different visualization of the concept is developed to reflect all identified levels and to acknowledge the previously made calls on concept development. Figure 2 shows the structural level of entrepreneur ecosystems as the first level of the further developed model and gives an overview of previous studies conducted on this level.

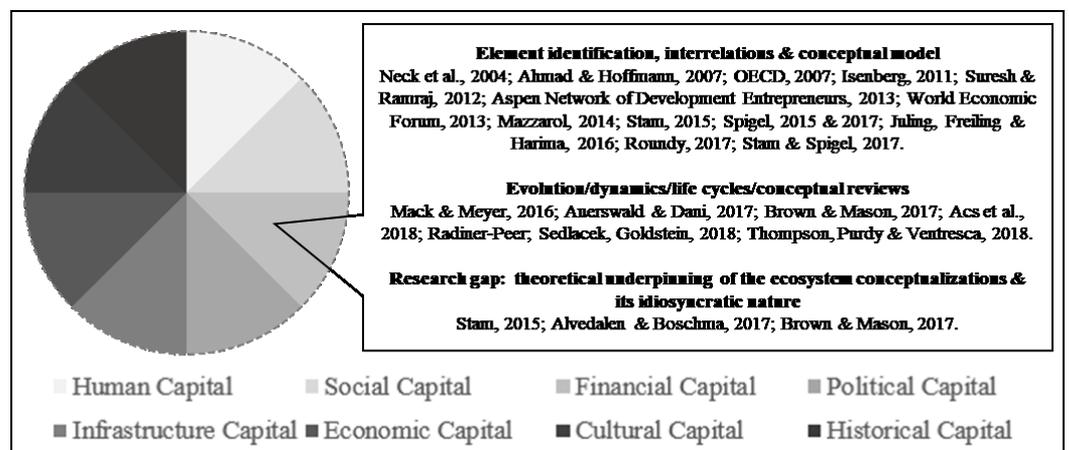


Figure 2: Structural level of entrepreneurial ecosystems
 (Source: own illustration, adapted from Juling, Freiling & Harima, 2016).

The model illustrates the eight identified capitals (Juling, Freiling & Harima, 2018), but positions them on the same layer to reflect the structural level of entrepreneurial ecosystems. All capital elements are connected and interrelated, with mutual impacts — as illustrated by the convergence of all capitals in the center of the model. Their combination on the same layer illustrates the capital structure (Freiling & Baron, 2017). The size of the single capitals is equal in the model. This aspect does not reflect the real-life of ecosystems; rather, it has a conceptual meaning. Each ecosystem undergoes its own developmental processes, which are impacted by its historical setting and its unique prerequisites (Isenberg, 2011); thus, the capital emphasis varies per region (cf. Startup Genome, 2017). The surrounding circle has a semi-permeable membrane to reflect the adaptive and open boundaries of ecosystems for newcomers (Roundy, Bradshaw & Brockman, 2018).

While conceptual models on entrepreneurial ecosystems are criticised as being static (Malecki, 2018; Maroufkhani, Wagner & Ismail, 2018; Alvedalen & Boschma, 2017), the dynamic processes of these ecosystems are outlined in previous research (Mack & Mayer, 2016). The discussion on evolutionary changes of regional components over time resulted in the development of life cycle processes of entrepreneurial ecosystems (Colombelli, Paolucci & Ughetto, 2019; Auerswald & Dani, 2017; Startup Genome, 2017). Colombelli and colleagues (2019), for instance, explain the development of ecosystems in the phases (i) birth, (ii) transition, and (iii) consolidation. Startup Genome (2017) propose four ecosystem lifecycle phases of (i) activation, (ii) globalization, (iii) expansion, and (iv) integration. While life cycles per se suppose a dynamic view, the often made calls to consider the uniqueness of regions and their distinctive settings when developing policies (e.g., Audretsch, 2015; Isenberg, 2010) are not captured in the pure presentation of relevant ecosystem components in the related static models. These models allow an understanding of ecosystems as isomorph constructs whose elements could be copied from best practices to one's own regions. This understanding is reflected by the long lists of superficially generalized policies for supporting ecosystem development that policy consultants have developed, as criticised by Stam & Spigel (2017).

This occurrence might be traced back to the lack of theory-backed explanations of the ecosystem idiosyncrasy argument, which can be identified as one of the major

research gaps of entrepreneurial ecosystems on the structural level. Brown & Mason (2017) call for further theoretical and empirical examinations on the heterogeneity of the ecosystem phenomenon, as the ecosystem concept is in general under-theorized (Audretsch et al., 2018; Stam, 2015). To do so, Malecki (2018) emphasises going beyond the lists of factors and diving into the processes in ecosystems that, in accumulation, define the emergence of ecosystems.

2.2.2 Inter-Actor Level: Networks and Community Settings

Studies concentrating on the inter-actor level focus on the inner dynamics of the ecosystems and how these might support strengthening their structural levels. Based on identified core elements of ecosystems, the questions on how an entrepreneurial ecosystem – or rather its capital structure – emerges is addressed in current research. Two related approaches can be noticed: ‘top-down’ and ‘bottom-up’ (Colombo et al., 2019). While the former supposes that governments can define a strategy and provide relevant resources to build an entrepreneurial ecosystem from scratch artificially, the latter states that entrepreneurial ecosystems emerge unplanned through the self-interested behaviour of ecosystem actors (Colombo et al., 2019). In the latter understanding, the government can contribute to setting a positive regulative environment, but it cannot act as a dominant player or even decision-maker (Isenberg, 2011). Jacobides, Cennamo & Gawer (2018) support this later view and argue that neither hierarchy nor a formalized governance structure can be recognized.

Rather, it is all the multiple actors with their mutual interrelations that contribute to the emergence processes within an ecosystem in distinctive ways. Besides specific interrelations of mutual stakeholders (Ghio, Guerini & Rossi-Lamastra, 2019; Erina, Shatrevich & Gaile-Sarkane, 2017), concrete networks have also been set up. Such networks include the social networks among members of educational institutes (Bischoff, Volkmann & Audretsch, 2018; Hayter, 2016a), academic spin-offs (Hayter, 2016b), and entrepreneurial women (McAdam, Harrison & Leitch, 2019). Further, a more holistic view on the contributions of the overall start-up community (Roundy & Bayer, 2019; Markley, Lyons & Macke, 2015; Feld, 2012) and their social boundaries (Neumeyer, Santos & Morris, 2019) have been outlined. Theodoraki, Messeghem & Rice (2018) contributed to the discussion with a theory-backed article on

social capital by tracing the sustainability of ecosystems back to the effective functioning of the social capital dimensions, thus relating to the inter-actor level.

To capture these dynamics and impacts, figure 3 presents the inter-actor level of entrepreneurial ecosystems. The figure 3 illustrates the inter-actor level and the studies conducted on this level. The model maintains the structural level in the background to visualise the interconnectedness of the ecosystem levels. The inner layer shows the inner ecosystem dynamics with interconnected individuals of three different exemplified groups of actors (A, B, C) and their network ties.

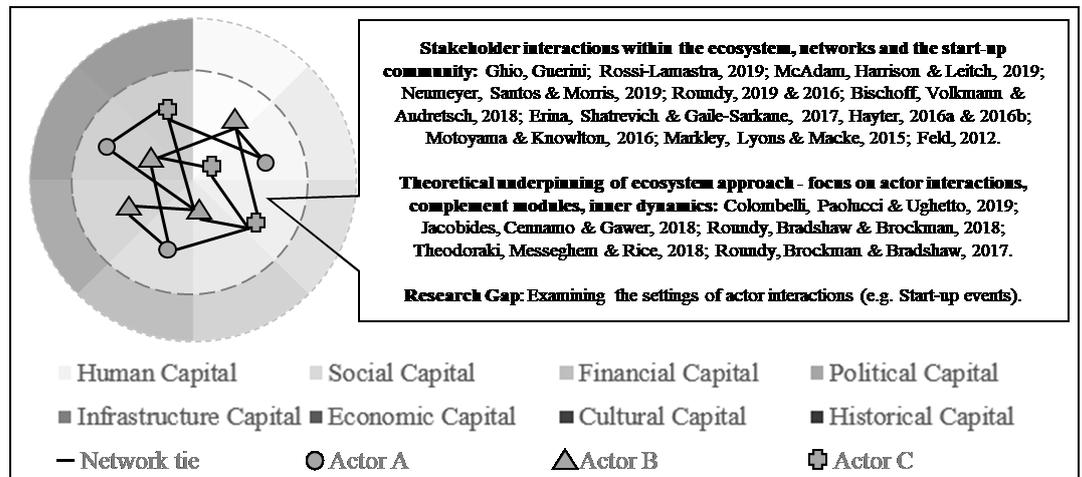


Figure 3: Inter-actor level of entrepreneurial ecosystems (Source: own illustration).

Ecosystem research agrees that actor interactions are the core of an ecosystem and that they create ecosystem dynamics (Stam, 2015; Mason & Brown, 2014; Isenberg, 2010). However, while the studies above give initial meaningful insights into the inter-actor level, understanding the impacts of actor interactions and network activities and their related outcomes within entrepreneurial ecosystems are still the main research gaps within entrepreneurial ecosystem research (Audretsch et al., 2018; Motoyama & Watkins, 2014). Little attention has been paid to the specificities of internal workings of ecosystems (Audretsch, 2015), to consequences of (missing) interactions (Mack & Mayer, 2016), or to the actual settings of these interactions. Start-up events are indicated as such settings. Feld (2012), Motoyama & Watkins (2014) and Startup Genome (2018) stressed the importance of start-up events for local start-up community building. According to Malecki (2018: 12), this approach enables “the understanding of an ecosystem through its events” and to learn about

the formation of entrepreneurial ecosystems as events offer platforms for community interactions, which is described as a prerequisite for ecosystem “environment creation” (Malecki, 2018: 11).

Despite these notes, the roles played by start-up events in ecosystems are not covered by previous research. Examining such settings of actor interconnections to reflect their impacts on the inner ecosystem dynamics can be noted as a research gap in previous entrepreneurial ecosystem research on the inter-actor level. Understanding such settings on the inter-actor level is highly relevant, as ecosystem actors create ecosystem capitals through their interplay (Mason & Brown, 2014).

2.2.3 Actor Level: Ecosystem Actors as Capital Architects

Apart from the focus on actor interconnections, the question of how specific actors or actor groups impact ecosystems is also discussed in previous research. Freiling & Baron (2017: 72) highlight that all ecosystem actors are ‘architects’ by providing varying degrees of resources to the emergence of the capital structure of entrepreneurial ecosystems. Hence, investigating the contributions of individual actor groups’ is of great importance to identify key actors of ecosystem emergence.

Setting regulative foundations for an entrepreneurship friendly environment, e.g. by fostering entrepreneurship education, public funding programs, and local institutional support infrastructure, and by promoting an entrepreneurship friendly culture, is the key role researchers have assigned to governments and policymakers (Fuerlinger, Fandl & Funke, 2015; Kantis & Federico, 2012, Isenberg, 2011). Cultivating entrepreneurial mindsets, educating entrepreneurship profiles, and setting foundations for innovations are aspects universities and research institutions can provide (Graham, 2014; Audretsch, Leyden & Link, 2017; Hooi & Ling, 2012). MNEs are found to add to ecosystems by knowledge spill-over effects leading to co-specialization and through an increase in the heterogeneity of entrepreneurial activities (Bhawe & Zahra, 2019). Research on accelerator programs describes that their presence and activities go hand in hand with an increase in regional funding possibilities (Hochberg, 2016), better firm performance (Breznitz & Zhang, 2019), and expanded social capital development (Brown et al., 2019), as well as an increase in stakeholder commitments to the ecosystem (Goswami, Mitchell & Bhagatula, 2018). They also

show the function of accelerators in the formation, structuring, and function of ecosystems (Roundy, 2017) such as providing start-ups with enhanced networks (Brown et al., 2019). Contributions of further actors within the ecosystem are detected for research spinoffs (Schillo, 2018), technology transfer offices (Sadek, Kleiman & Loutfy, 2015), investors (Colombo & Murtinu, 2017), entrepreneurship support organizations (Spigel, 2016), and serial entrepreneurs (Ensign & Farlow, 2016).

Figure 4 shows the actor level of entrepreneurial ecosystems. It sets the individual actors in focus, which is why the rest of the model is blurred. The structural and inter-actor levels remain visible in the figure 4 to make clear that actors in ecosystems do not act in a vacuum but are embedded in networks.

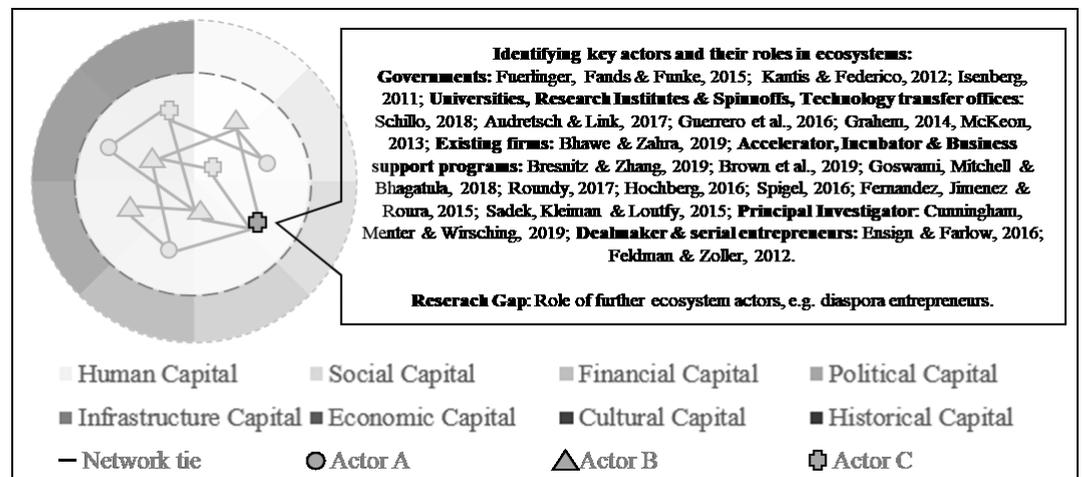


Figure 4: Actor level of entrepreneurial ecosystems (Source: own illustration).

While the summary above shows that the roles of several ecosystem actors have been covered by research, further empirical examination of the role of actor groups on the micro-level is still needed. Audretsch et al. (2019) pointed to the open questions of whether it is “the same group of individual actors that drives the development of ecosystems, irrespective of the geographical context?” and “what role do individuals play in shaping the creation, evolution, and sustainability of entrepreneurial ecosystems?” (Audretsch et al., 2019: 321). The researchers call attention to the fact that several actor groups’ roles are still uncovered, such as diaspora entrepreneurs. Research on diaspora entrepreneurship detected its auspicious role for regional economic development (Liu et al., 2010; Saxenian, 2002; Wright et al., 2008). A study on the role diaspora entrepreneurs play in the specific context of entrepreneurial ecosystems has not been conducted. However, the high share of diaspora

entrepreneurs among the entrepreneurs in successful ecosystems (Startup Genome, 2017) such as Silicon Valley (46%) and Berlin (43%) indicates that this actor group might be a key factor for ecosystem emergence.

2.3 Positioning of the Dissertation

In terms of its context specificity, as well as the underlying understanding of entrepreneurial ecosystems as being complex and consisting of three different ontological levels, the early stage of research calls for the deeper elaboration of these levels and their impacts on ecosystem idiosyncrasy. The dissertation aims at contributing to all three levels by (i) conceptually, (ii) theoretically, and (iii) empirically backing up this understanding and by addressing the following research gaps in ecosystem research:

- (i) *Conceptual*: The brief review of previous research illustrates that initial meaningful conceptual insights into the complex ecosystem construct have already been given. However, previous research lacks a holistic model that considers all of the above-identified ontological levels of entrepreneurial ecosystems and their interrelations. Furthermore, previous models do not acknowledge calls to develop a model which is theoretically backed (Audretsch et al., 2018; Stam, 2015), reduces complexity by focusing on key elements on sub-dimensions (Maroufkhani, Wagner & Ismail, 2018), considers ecosystem structure and actors (Brown & Mason, 2017), and considers inner-ecosystem dynamics (Malecki, 2018; Alvedalen & Boschma, 2017).
- (ii) *Theoretical*: Ecosystem research is under-theorized (Audretsch et al., 2018; Stam, 2015), and it specifically lacks theory-based explanations of the idiosyncrasy argument of entrepreneurial ecosystems (Brown & Mason, 2017).
- (iii) *Empirical*: The review above shows that the inter-actor level, as well as actor level activities, impact ecosystem emergence. Empirical evidence on the effects on ecosystem idiosyncrasy originating from these levels is rare in the context of the specific settings of actor interactions and from specific actor groups. Specifically, research lacks empirical insights on the roles played by

start-up events and diaspora entrepreneurs (Audretsch et al., 2018; Malecki, 2018).

Figure 5 presents the multiple-level framework of entrepreneurial ecosystems as developed step-by-step in the previous sub-chapters along with the identified research gaps; it also shows which of the articles of this dissertation address which gap.

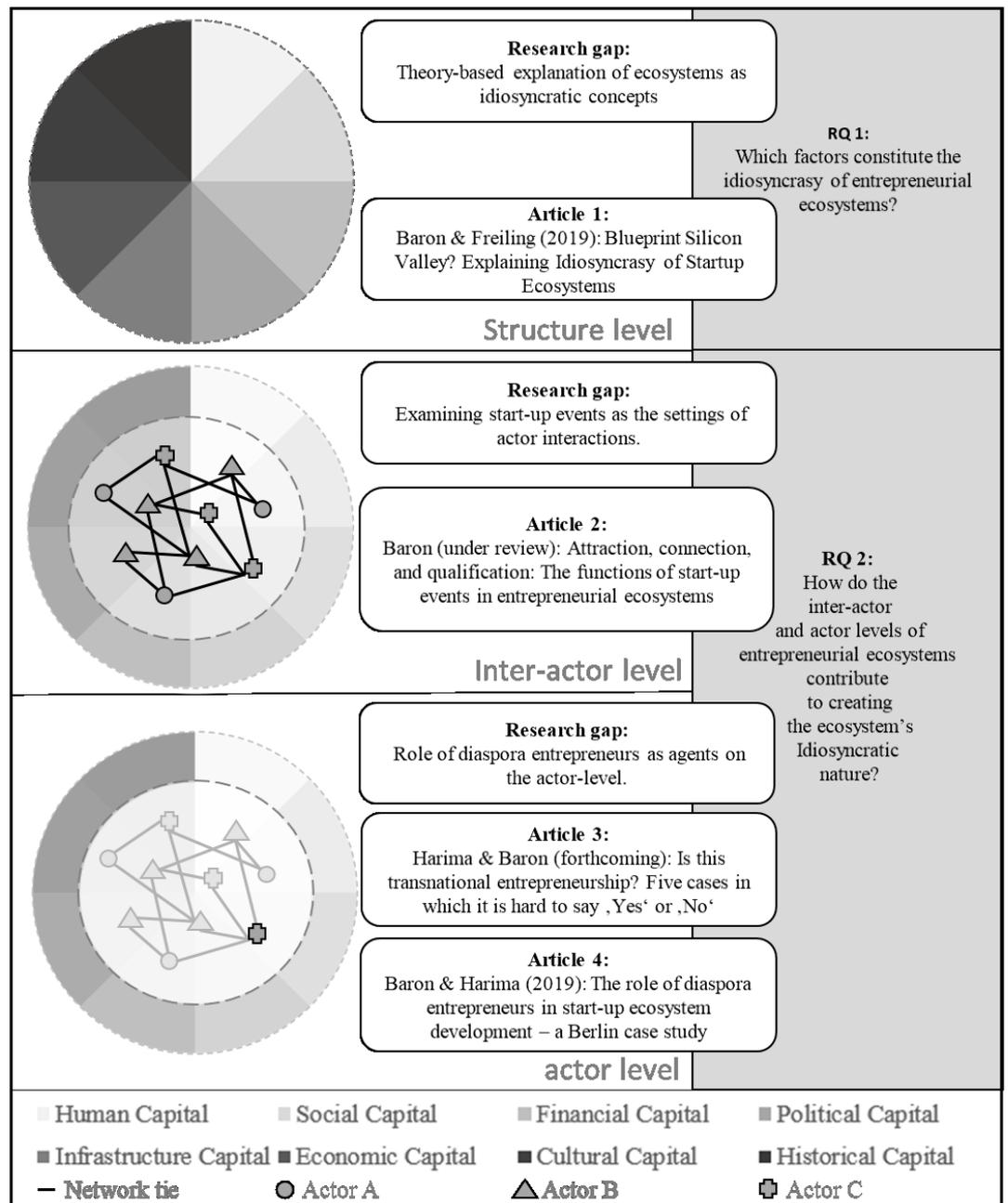


Figure 5: Three levels of entrepreneurial ecosystems and their relationship to the articles of the dissertation (Source: own illustration).

3 The Idiosyncrasy of Entrepreneurial Ecosystems

In this chapter, the backgrounds, methodological approaches, key findings and contributions of the four articles which are considered for the cumulative dissertation will be presented. As the articles have their own research questions other than the overarching research questions, chapter 3 focuses on the contributions the single articles make to the ecosystem research. The relation between each article's findings and the overarching research questions will be carved out in chapter 4.

3.1 Explaining the Idiosyncrasy of Entrepreneurial Ecosystems (Article 1)

3.1.1 Research Background

The positive impacts of thriving entrepreneurial ecosystems such as Silicon Valley on their regional economic development and related positive socio-economic outcomes have created attention among policymakers on the concept of entrepreneurial ecosystems (Autio et al., 2014; Mason & Brown, 2014), mainly in the hope of emulating the Silicon Valley success in the own region (Startup Genome, 2017). An interest of policymakers and researchers in understanding the success mechanisms of ecosystem emergence and reaching potential conclusions on how to support fostering such a development can be noticed (Stam & Spiegel, 2017; Mason & Brown, 2014). However, the early status of research, as well as the constructs' complexity, impede a clear, generalizable policy strategy for fostering the emergence of entrepreneurial ecosystem based on implications derived from success cases.

Neglecting the early state of research and the context specificity of previous research findings, the attempt of policymakers to blueprint Silicon Valley's apparent success structures is evident, as illustrated by the comparison of regions in question to the Silicon Valley case, as well as the existence of long lists of policy implications in practitioner reports (Startup Genome, 2017; Mazzarol, 2014; ANDE, 2013).

The question arises whether or not the application of such implications may lead to successful ecosystem emergence in the own region, especially as entrepreneurial ecosystem research questions this approach. Audretsch (2015) suggests that there is no standardized strategy that can be applied. Isenberg's call to "stop emulating Sil-

icon Valley” (Isenberg, 2011: 3) is also unambiguous in this regard. Further researchers follow these claims by emphasizing the need to consider the distinctive regional prerequisites and settings when developing policies (cf. Amerós, Mandakovic & Munoz, 2016; Mack & Meyer, 2016; Hechavarria & Ingram, 2014; Mason & Brown, 2014; Isenberg, 2010). However, these calls seem to be ignored, possibly because they lack a theoretical underpinning, due to the general lack of theoretical founded conceptual models of entrepreneurial ecosystems.

Accordingly, **article 1**, titled ‘**Blueprint Silicon Valley? Explaining Idiosyncrasy of Startup Ecosystems**’, aims at closing this research gap by analysing why each entrepreneurial ecosystem may be idiosyncratic in nature to provide the discussion with theoretical arguments.

3.1.2 Research Approach

The article builds on a literature review reflecting the findings in prior research, which takes the entrepreneurial ecosystem as a unit of analysis. Based on theoretical considerations and the application of resource-based reasoning, the article develops propositions deductively. Applying to the context of the entrepreneurial ecosystem the underlying core idea of the resource-based view that competitive advantages of a firm are constituted by firm-specific resource endowments (Freiling, 2004; Grant, 1991; Penrose, 1959), the idiosyncrasy of ecosystems’ resources rest on and are reinforced by isolating mechanisms (Dierickx & Cool, 1989; Rumelt, 1984; Teece, 1984; Penrose, 1959). ‘Idiosyncrasy’ in this context refers to the result of working isolating mechanisms leading to ecosystem heterogeneity.

The eight isolating mechanisms listed below are identified from the resource-based literature and reflected on discussions from the entrepreneurial ecosystem literature. The underlying presumption of this approach is that being able to identify and explain the existence of such working isolating mechanisms in entrepreneurial ecosystems would suggest that such ecosystems possess peculiar characteristics. The eight identified isolating mechanisms from the resource-based literature are discussed in article 1 in the four categories of entrepreneurial ecosystem (i) structure, (ii) actors, (iii) culture, and (iv) dynamics. These four categories are inductively developed

when analysing the content of the ecosystem literature regarding the following eight isolating mechanisms (Table 2).

Isolating mechanism	Authors, Year	Explanation
Asset interconnectedness	Dierickx & Cool, 1989	Asset interconnectedness implies that asset development not only relies on the existing asset stocks, but also on other asset stocks.
Social complexity	Barney, 1991	Social complexity points out that value creation within an organization takes place in complex relationships which internally lead to mutual understanding, shared conventions, and values. Outsiders of the firm cannot achieve an understanding about these complex internal settings (Freiling, 2004).
Causal ambiguity	Rumelt, 1984	Causal ambiguity explains that a firm's success cannot be directly related to specific resources employed. These cause-and-effect relations are difficult to explain, since they are based on firm-specific roots.
Asset mass efficiencies	Dierickx & Cool, 1989	Asset mass efficiencies describe that the strengths of asset accumulation can be actively influenced by the firm's initial asset stock.
Time compression diseconomies	Dierickx & Cool, 1989	Time compression diseconomies signifies the weaknesses of a firm's asset stock accumulation in regard to keeping pace with a competing firm over time.
Routines & tacit knowledge	Nelson & Winter, 1982; Pentland & Rueter, 1994; Nonaka, 1994.	Routines are "pre-structured grammars of action, enabling a group of people to adapt to tasks in a goal-directed way due to the underlying knowledge the routines refer to" (Freiling, 2004, p. 35). Firms build up tacit knowledge, which is routed in their own actions, cognitions, and its specific context.
(Intellectual) property rights	Freiling, 2004	(Intellectual) property rights restrict the use of certain assets/resources to the owning firm. In the case of developed property rights belonging to co-operating firms, the creation of these properties can only be developed in co-creation and not by a single firm.
Absorptive capacity	Cohen & Levinthal, 1990	Absorptive capacity is "the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990, p. 128).

Table 2: Isolating mechanisms applied in article 1 (Source: adapted from Baron & Freiling, 2019).

3.1.3 Key Findings

Article 1 suggests that entrepreneurial ecosystems are idiosyncratic entities. By carving out which isolating mechanisms affect the nature of ecosystems in detailed explanations, the article concludes that working isolating mechanisms lead to the fact that (i) the presence and meaning of resources differ among regions, (ii) the composition of actor groups in a region is idiosyncratic, (iii) each ecosystem's culture is unique, and (iv) evolution over time changes ecosystem structures in an idiosyncratic manner, based on system-specific drivers.

- (i) *Structure*: The article explains that the starting point of entrepreneurial ecosystem emergence differs with respect to the presence and emphasis of regionally available resources. When looking at the resource endowment of an ecosystem at a certain time, it has been affected by historical events and decisions made in the past which affect the possibility of regional combinations of resources to the complex capital structure. The regional agglomerations of specific resources can, for instance, be influenced by the influx of specific types of human capital triggered by policy decisions made in the past on supporting a specific industrial sector as well as the economic system. By outlining how working isolating mechanisms determine and affect this process, the article concludes that entrepreneurial ecosystems are idiosyncratic, due to the presence and meaning of their available regional resources.
- (ii) *Actors*: Ecosystem actors are co-creators and connectors of ecosystem resources (Freiling & Baron, 2017). By reviewing the entrepreneurial ecosystem literature regarding the impact of actor groups, the article summarizes that the composition, density, and diversity of actor groups and their interrelations in ecosystems are unique by themselves, with related effects on the entailed availability of resources and their complex combinations.
- (iii) *Culture*: How ecosystem actors behave and hence impact the combination of ecosystem resources depends on institutional settings. The article reviews the ecosystem literature and, by applying the isolating mechanism discussion to the context, explains that ecosystem culture is distinctive from region to region and affects the way ecosystem actors behave and interact. Hence, the article suggests that not only is the community culture in entrepreneurial ecosystems idiosyncratic, but it also acts as an isolating mechanism in ecosystems.
- (iv) *Dynamics*: While the previous discussion on ecosystem structure, actors and culture is static, the fourth proposition takes into account the evolutionary processes ecosystems undergo in their emergence. The article gives examples and reasons for changes in ecosystem actor group compositions and behaviours affecting the constitution of the capital structure of entrepreneurial ecosystems

over time. Thus, the article suggests that evolutionary processes and their related effects on the ecosystem resource structure are by nature idiosyncratic.

Table 3 summarizes the kinds of isolating mechanisms identified and applied to develop article 1's causal propositions (P) on the idiosyncratic nature of entrepreneurial ecosystems.

Isolating Mechanism	(P1) Structure	(P2) Actors	(P3) Culture	(P4) Dynamics
Asset interconnectedness		x		
Social complexity		x		x
Causal ambiguity	x	x		
Asset mass efficiencies	x	x	x	x
Time compression diseconomies	x	x		x
Routines			x	
Tacit knowledge			x	
Property rights		x		
Absorptive capacity	x			

Table 3: Overview of isolating mechanisms causing idiosyncrasy of start-up ecosystems. (Source: Baron & Freiling, 2019)

3.1.4 Contributions

Article 1 tackles the need for theorizing the ecosystem approach. By giving explanations on the idiosyncratic nature of entrepreneurial ecosystems with resource-based reasoning, the article contributes to the theory building of entrepreneurial ecosystems. Following the understanding of ecosystems as capital structure (Freiling & Baron, 2017; Juling, Freiling & Harima, 2016), the article contributes to the further development of this conceptual understanding by including its core ideas in the theoretical discussion. Entrepreneurial ecosystems are highly idiosyncratic, due to regional differences in structure and inter-actor/actor levels. The findings add to taking a holistic view by identifying the actor and inter-actor level impacts as determinants of ecosystem idiosyncrasy.

3.2 Impact Factors on Idiosyncrasy in Entrepreneurial Ecosystems

Article 1 underpinned theoretically why entrepreneurial ecosystems are unique in nature. Their idiosyncrasy rests on working isolating mechanisms. According to the findings of article 1, ecosystem idiosyncrasy is reflected by the uniqueness of the underlying capital structure via the differing complex combinations of resources and

their creation. Resource creation and combination are influenced by ecosystem actors, which themselves are idiosyncratic in their composition in ecosystems, due to differing regional density and the diversity of actors, as well as their interrelations.

Building on the theoretically developed assumption that ecosystem actors impact the emergence of ecosystem capital structure, the dissertation strives to give empirical proof to validate or invalidate this assumption. As ecosystems are complex and deal with different ontological levels — such as the inter-actor level (e.g., start-up community, networks, etc.) as well as the actor level, such as the single actors — two impact factors should be set in focus: start-up events and migrant entrepreneurs.

As comprehensively outlined in chapter 2, a research gap on the role of start-up events in entrepreneurial ecosystems is evident on the inter-actor level as well as on the role of diaspora entrepreneurs on the actor level. Focusing on these two factors allows this dissertation to address these gaps and to capture the holistic view on ecosystems by considering all ecosystem levels for the discussion on the overarching research questions on ecosystem idiosyncrasy in chapter 4, where the relations of the different levels with their influencing processes will be set into focus.

3.2.1 Impact of Start-up Events (Article 2)

3.2.1.1 Research Background

Various studies have illuminated the contributions of entrepreneurial ecosystems for regional prosperity (Cunningham & O'Reilly, 2018; Morris, Neumeier & Kuratko, 2015; Mason & Brown, 2014; Startup Genome, 2012). Inspired by the potential outcomes of having a successful ecosystem in their own region, policymakers show an increasing interest in understanding the success mechanisms of ecosystems (cf. Autio et al., 2014). While previous research has made great efforts in detecting relevant elements (e.g., OECD, 2007; Stam & Spigel, 2017) and actors (e.g., Kantis & Federico, 2012; Audretsch, Leyden & Link, 2017, Bhawe & Zahra, 2019) of ecosystems, scarce attention has been paid to the scenarios of actual (f)actor interactions such as start-up events, even though these settings are indicated as important sites in entrepreneurial ecosystems, especially for community building (Feld, 2012; Motoyama & Watkins, 2014; Startup Genome, 2018). With the exception of this indi-

cation, the role played by start-up events in entrepreneurial ecosystems is not covered by previous research. Considering the high number of such events and their diverse formats in practice (e.g., pitch competitions, networking events, start-up weekends, and start-up fail nights) suggests a much more extensive functionality of these settings than the mere building of connections.

The aim of the **article 2: “Attraction, connection, and qualification: the functions of start-up events in entrepreneurial ecosystems”** will close this research gap by identifying the fields in which start-up events benefit entrepreneurial ecosystems to illustrate the role they play. The study sought to develop causal propositions on the functions of start-up events based on empirical evidence. Due to the limited knowledge on them in the context of entrepreneurial ecosystems, the following broad research question guided the study, as the early research status on the topic requires fundamental research:

RQ: What are the functions of start-up events in entrepreneurial ecosystems?

3.2.1.2 Methodology

Article 2 employs a qualitative, inductive research design in the form of multiple case studies (Yin, 2009; Ghauri, 2004). As this approach enables one to grasp new and deep insights while maintaining a holistic view (Yin, 2009), it is adequate for this early stage of research (Eisenhardt, 1989). Semi-structured, in-depth interviews were conducted with 17 entrepreneurs: five would-be entrepreneurs and seven event organizers in Berlin and Bremen. While the author conducted the interviews in Berlin by himself, 12 of 15 interviews on the Bremen case constitute secondary data, which were collected in a student research project the author supervised on the role of events in the Bremen ecosystem. As the data reveal relevant information on the topic, the author decided to consider these interviews, with the permission of the interviewees and interviewers. Considering the different actor types should enhance the variety of data sources and add to the validity of the findings. The tables in article 2 (pp. 140, 141) give an overview on the data collection.

The selection of interview partners among the current and would-be entrepreneurs was assigned according to the snowball sampling method (Marshall, 1996) by at-

tending start-up events, as this form of data access was a feasible option in connection with the field observations. Event organizers were selected via theoretical sampling (Glaser & Strauss, 1967) according to their involvement in the local start-up scene. While the goal was not to compare event functions in Berlin and Bremen, these two localities were chosen because they represent ecosystems in different developmental stages (cf. Kollmann et al., 2018), thus capturing a broader perspective on the topic reflecting the different institutional backgrounds. Further data on the nature of events and their contents, as well as participant interactions, were collected via field studies at 26 start-up events in Berlin and eleven in Bremen. The data collection took place between 2015 and 2019. The diversity of data sources was chosen to increase the study findings' validity through data triangulation (Denzin, 1970).

The data analysis process was inspired by suggestions made by Charmaz (2014). Her three-step coding process (initial, selective, and theoretical) was applied as shown in the appendix (p. 142) and was technically supported by MAXQDA and Microsoft Excel. The findings were interpreted in a cross-case analysis, which led to the derivation of causal propositions.

3.2.1.3 Key Findings

By describing and interpreting interview data intensively, while reflecting on them with explanations from previous research, article 2 derived a set of nine research propositions (RP) on the role start-up events play in entrepreneurial ecosystems. They are summarized below (see figure 6). Building on these propositions, the study reveals four functions of start-up events in entrepreneurial ecosystems. They act as (i) attraction factors for outside human capital, (ii) settings for community building, and (iii) platforms for knowledge sharing. As a result, start-up events are (iv) conducive environments for the (further) development of entrepreneurial human capital.

3.2.1.4 Contributions

Article 2 contributes to the understanding of the role of start-up events in entrepreneurial ecosystems. It identifies them as relevant settings for actor interactions and offers rich empirical insights into the inter-actor level of entrepreneurial ecosystems. The article demonstrates clear interconnections between actors through their building and cultivating of networks at start-up events, as well as through their

knowledge-sharing procedures. The findings demonstrate that start-up events are more than suitable platforms for connecting relevant stakeholders. The study not only confirms these previously made suggestions on the importance of start-up events for community building but extends the previous knowledge by detecting how start-up events contribute to the attractiveness of an ecosystem as well as to the (further) development of participants' human capital. The article contributes to identifying and describing the roles of start-up events in entrepreneurial ecosystems and, thereby, addresses the calls for detecting the role of these platforms in entrepreneurial ecosystems (Malecki, 2018), as well as the general need to uncover the internal workings of ecosystems (Audretsch, 2015).

<p><i>(i) Start-up events as factors of human capital attraction</i></p> <p>RP1: Start-up events influence the attraction of outside human capital by affecting an ecosystem's visibility and image construction, as well as by displaying entrepreneurial ecosystem characteristics.</p>
<p><i>(ii) Start-up events as access points to an ecosystem's community network</i></p> <p>RP2-A: Start-up events allow newcomers to access an entrepreneurial ecosystem's local start-up community by providing an eligible environment that supports networking activities and connection building among diverse actors of the ecosystem's community.</p> <p>RP2-B: Start-up events help newcomers draw attention to themselves and establish a sense of belonging, which are conducive conditions for networking activities.</p>
<p><i>(iii) Start-up events as platforms for knowledge sharing</i></p> <p>RP3-A: Start-up events profit newcomers via relevant information on the ecosystem and general business-related topics that offer conducive platforms for social capital building and result in knowledge sharing among participants.</p> <p>RP3-B: Start-up events help newcomers reach a legitimate status among the start-up community members by adapting to the community rules so as to be perceived as trustworthy, thus enabling their receipt of information.</p>
<p><i>(iv) Start-up events as conducive environments for the (further) development of entrepreneurial human capital</i></p> <p>RP4-A: Start-up events contribute to (would-be) entrepreneurs' entrepreneurial inspiration and motivation sustainment through the sharing of business ideas and opportunities, the practising of entrepreneurship, and the receipt of inspiration from role models.</p> <p>RP4-B: Start-up events contribute towards transferring entrepreneurial mindset attributes by addressing aspects such as openness, mutual support, and a rather positive perception towards failure.</p> <p>RP4-C: Start-up events help attendees develop and practise entrepreneurial skills and competences, such as business knowledge, pitching skills, and networking skills.</p>

Figure 6: The functions of start-up events in entrepreneurial ecosystems; research propositions (RP) of article 2 (Source: Baron, under review).

3.2.2 Impact of Ecosystem Actors

Chapter 2 outlined how transnational entrepreneurs' high presence in successful ecosystems makes them a relevant actor group within these environments. Due to their unique backgrounds and emigration experiences, migrant entrepreneurs are presumed to contribute differently to ecosystem emergence. Through their mixed embeddedness (Kloosterman, Van der Leun & Rath, 1999) in their home and host country contexts, they possess distinctive network structures and access to resources that may be unavailable to native founders (Aliaga-Isla & Rialp, 2012). Therefore, a study on migrant entrepreneurs' impact on ecosystem emergence will be undertaken.

When preparing a study on the roles of migrant entrepreneurs in entrepreneurial ecosystems, it became visible that several terms focusing on different aspects are used to describe the business activities of migrants, such as 'ethnic entrepreneurship' (e.g. Koning & Verver, 2013), 'immigrant entrepreneurship' (e.g. Moyo, 2014), 'returnee entrepreneurship' (e.g., Phuong et al., 2019), 'diaspora entrepreneurship' (Elo et al., 2018; Riddle & Brinkerhoff, 2011) and 'transnational entrepreneurship' (e.g., Drori, Honig & Wright, 2009; Lundberg & Rehnfors, 2018). A clear focus was required to overcome this issue. Focusing on the transnational character for the role of migrants in entrepreneurial ecosystems seemed to be promising at first glance, as the focus on this group of entrepreneurs might give indications about impacts on ecosystem development in countries of origin and residence at the same time. However, at second glance, the term 'transnational entrepreneur' seemed to be improperly defined and used ambiguously. Thus, as for data selection, a clear-cut definition would contribute to the reliability of the research. Therefore, the decision for a terminological digression was made to prepare data selection.

3.2.2.1 Terminology for Transnational Entrepreneurship (Article 3)

3.2.2.1.1 Research Background

In the early 2000s, the term 'transnational entrepreneurship' began to pop up in entrepreneurship research. The concept built on discussions by anthropologists in 1990. In contrast to the dominant understanding of migrants at that time (as obsequious actors to their host countries; Kwak & Hiebert, 2010), researchers started to

detect the duality of immigrants in the entrepreneurial context. Due to their embeddedness in at least two countries, migrants have the potential to create value through cross-border activities (Drori, Honig & Wright, 2009). While the new terminology supported the understanding of this upcoming phenomenon more holistically, the concept has remained vague in defining clear cut characteristics. Further, the distinctive features of transnational entrepreneurship that a few studies have identified seem to be partly obsolete, due to the rapid enhancements of transportation and communication technologies over the last few years. These advancements facilitate staying in contact with the country of origin and residence (Bagwell, 2008). They also reduce barriers to travel and to access cross-border information, which affects conducting businesses — and, hence, the initial characterization of transnational entrepreneurship.

Titled “Is this transnational entrepreneurship? Five cases in which it is hard to say ‘Yes’ or ‘No,’ Article 3 aims to contribute to a clearer understanding of the transnational entrepreneurship concept. To do so, it critically reviewed the previous literature on the topic to identify the characteristics defining transnational entrepreneurship. In a further step, the article presents cases of real-life migrant entrepreneurs from the present and challenges the current understanding of transnational entrepreneurship with the heterogeneity these empirical cases provide to further develop a state-of-the-art understanding of the issue and to contribute to diminishing the conceptual ambiguity.

The underlying research questions guiding the article 3 study are as follows:

RQ1: Which roles does transnationalism play in the entrepreneurial activities of modern migrants?

RQ 2: Which dimensions should be considered in the further development of the transnational entrepreneurship concept?

To provide answers to these research questions, a literature review was first conducted on the antecedent streams ‘migrants’ entrepreneurial activities’ and ‘international entrepreneurship’. Its purpose was to position transnational entrepreneurship

in the field of entrepreneurship by illustrating the similarities and distinctive differences of these related concepts.

In a second step, previous definitions of transnational entrepreneurship (Portes, Guarnizo & Haller, 2002; Saxenian, 2002; Drori, Honig & Wright, 2009) were reviewed to detect the following research assumptions (RA) developed by previous scholars to characterize transnational entrepreneurship (figure 7).

RA1: Scholars assume that frequent travel between home and host countries is a significant prerequisite for transnational entrepreneurship.

RA2: Transnational entrepreneurs need to engage in business activities in the home and host country simultaneously. Ideally, entrepreneurs register their businesses in each country, which are interrelated to create transnational entrepreneurial values.

RA3: Transnational entrepreneurs are commonly seen in bi-lateral country contexts between home and host countries. While some researchers acknowledge the potential outcomes of circular migration in the entrepreneurial context, it seems to be a common belief that transnational entrepreneurs have deep embeddedness mainly in the constitutional contexts of their countries of origin and residence and that the role of other countries in immigrants' cross-border entrepreneurial activities remains unknown.

RA4: As indicated in Saxenian's definition, many studies highlight the entrepreneurial activities of migrants with higher educational or vocational qualifications, taking the assumption for granted that transnational entrepreneurship is a privilege for highly educated migrants.

Figure 7: Research assumptions (RA) developed in article 3 on characteristics of transnational entrepreneurship (Source: Harima & Baron, forthcoming).

3.2.2.1.2 Methodology

The study aimed at demonstrating the role transnationality plays in the entrepreneurial activities of migrants. The article applies a multiple case study approach (Yin, 2009), as this enables diverse dimensions of this phenomenon to be explored. The authors carefully selected five cases from the data set they had collected for their prior research projects based on theoretical sampling (Patton, 2002). The authors discussed their cases and purposely selected extreme cases in which transnationality played an unconventional role. Their goal was to demonstrate the heterogeneity of real-life migrant entrepreneurs and to challenge the previous assumptions, preferably with opposite cases. Data consist of in-depth-interviews with migrant entrepreneurs and stakeholders, as well as field observations and secondary data (e.g., social media), all of which were collected between 2015 and 2016. The high variety of data selection enabled the authors to dive deep into individual cases and was used for the sake of data triangulation (Saltmarsh, 2013; Zhang, Albrecht & Scott, 2018).

Except for one case, all interviews were audio-recorded and transcribed verbatim. The remaining case consists of field observations and an expert interview. Table 4 gives an overview of the entrepreneurs of the cases.

Entrepreneur	COO	COR	Business(es)
Entrepreneur A	Japan	Philippines	Language courses Human resource agency Manufacturing Health-care
Entrepreneur B	Japan	Guatemala	Online Spanish language lessons
Entrepreneur C	Croatia	Germany	Encrypted collaboration platform for communications and file sharing
Entrepreneur D	Afghanistan	Germany	Online platform for IT support Outsourcing service for IT projects Debugging platform for software
Entrepreneur E	Tajikistan	Russia	Mobile car repairmen service

Table 4: List of cases (Source: Harima & Baron, forthcoming).

Both authors analysed the data descriptively in an individual manner. They were guided by the classifications given by the identified assumptions of prior research on transnational entrepreneurship characteristics. The authors discussed the individual interpretations for the sake of investor triangulation, as suggested by Denzin (1970). A within-case analysis was followed by a cross-case analysis to extract further findings related to the dimensions identified based on the previous assumptions.

3.2.2.1.3 Key Results

The article presents the five cases and reflects the transnational characteristics of the entrepreneurs with the previously identified assumptions. The empirical data contradict the previous assumption in many cases. Describing the real-life cases and reflecting them with literature, research propositions (RPs) challenging the previous research assumptions (RAs) were derived as a result of the article (figure 8, p. 33).

3.2.2.1.4 Contributions

The article contributes to the terminological discussion on transnational entrepreneurship by illustrating the weaknesses of the concept and by making suggestions as to how the existing dimensions could be extended or even changed to capture the actuality of modern transnational entrepreneurship.

While the article contributes to a better understanding of the nature of transnational entrepreneurship, it cannot offer clear-cut dimensions that characterize transnational entrepreneurs. This shortcoming impedes focusing on these specific groups when looking at the impact of migrant entrepreneurs in entrepreneurial ecosystems.

To overcome this issue, the authors decided to focus on diaspora entrepreneurs, as they are more clearly defined and, due to their definition, they are closely connected to their home country institutions. Based on these criteria, the authors consider this distinctive group as the most appropriate one to examine migrant entrepreneurs' impacts on entrepreneurial ecosystems, according to the initial idea.

RA1: Frequent Business Travel between Home and Host Country

RP1-a: Due to the technological advancement in ICT, transnational entrepreneurs maintain their connections in different countries not only through physical travels but also through digital connections.

RP1-b: The diversification of human mobility in modern society creates the necessity to reconsider the meaning of home and host countries for transnational entrepreneurs.

RA2: Simultaneous Entrepreneurial Engagement in the Home and Host Countries

RP2: What determines the characteristics of transnational entrepreneurs is not simultaneous entrepreneurial engagement in home and host countries, but the way they compose resources from different nations to create transnational entrepreneurial value.

RA3: Deep Embeddedness in Home and Host Institutional Environments

RP3: Migrants increasingly pursue circular migration paths, which drive them to follow a rather cosmopolitan lifestyle. Therefore, transnational entrepreneurial activities should be understood in multilateral contexts, rather than as being a bilateral relationship between home and host countries.

RA4: Highly Educated Migrants

RP4: Transnationalism can create unique entrepreneurial values, even when entrepreneurs are not highly educated.

Figure 8: Results of article 3: Developed research propositions (RP) challenging previous research assumptions (RA) regarding the characteristics of transnational entrepreneurship. (Source: Harima & Baron, forthcoming).

3.2.2.2 Impact of Diaspora Entrepreneurs (Article 4)

3.2.2.2.1 Research Background

Understanding the dynamic processes ecosystems undergo whilst emerging has become of major interest for policymakers. Ecosystem researchers agree that all ecosystem actors in interplay make up the favourable environment for start-up companies to flourish and grow (cf. Mason & Brown, 2014). Even though the actions of

ecosystem actors are highlighted as fundamental drivers of ecosystem emergence, the detection of relevant actor roles is still in a rather early stage.

A few studies indicate that diaspora entrepreneurs might play a distinctive role in ecosystem development (Liu et al., 2010; Saxenian, 2002; Wright et al., 2008). ‘Diaspora entrepreneurship’ signifies migrant entrepreneurs maintaining strong emotional relations with their country of origin (COO) (Safran, 1991). Distinctive characteristics of diaspora entrepreneurs are their dispersal, homeland orientation, and boundary maintenance (Brubaker, 2005). The mixed embeddedness (Kloosterman, Van der Leun & Rath, 1999) in at least two socio-cultural backgrounds enhances access to multiple networks (Kuznetsov, 2008) and, by this, to information and knowledge, which is not accessible for pure domestic entrepreneurs (cf. Aliaga-Isla & Rialp, 2012; Dalziel, 2008). The migration experience diaspora entrepreneurs go through enriches them with the ability to assess information from different perspectives, which may be a source of entrepreneurial opportunity recognition (Rouse, 1992). This ‘bi-focality’ (Vertovec, 2004) and the mixed embeddedness (Kloosterman, Van der Leun & Rath, 1999) might be causes of distinctive contributions that diaspora entrepreneurs might deliver to ecosystem emergence. However, previous research on diaspora entrepreneurs has mainly focused on their contributions to homeland development (e.g., Freinkman, 2000; Riddle & Brinkerhoff, 2011) and not on their contributions to host country development. This is specifically true for the entrepreneurial ecosystem context. The high presence of diaspora entrepreneurs in successful entrepreneurial ecosystems such as Silicon Valley (46%) and Berlin (43%) (Startup Genome, 2017), however, indicates that this actor group might be a relevant factor for ecosystem emergence.

Article 4 aims to fill this research gap and to detect the role diaspora entrepreneurs play in the creation of the capital structure of entrepreneurial ecosystems via their distinctive characteristics. The research question for this study is as follows:

RQ: How do diaspora entrepreneurs contribute to the development of a start-up ecosystem through their unique backgrounds, resources, and characteristics?

Based on a literature review on conceptual models of entrepreneurial ecosystems and diaspora entrepreneurship research, the authors adjusted the capital model of

entrepreneurial ecosystems (Juling, Freiling & Harima, 2016) to the context of diaspora entrepreneurs, which should serve as an analytical tool for the study (see p. 230). Based on the literature review, we developed the following two underlying research assumptions regarding the impact of diaspora entrepreneurs on the development of the capital structure of entrepreneurial ecosystems (see figure 9).

RA 1: Diaspora entrepreneurs may enhance existing ecosystem capitals mainly through their advanced educational backgrounds and their experiences in the COO-context (human capital). They may also foster entrepreneurship culture through their strong entrepreneurial mindsets, which are triggered by their bi-focality (cultural capital).

RA 2: We assume that diaspora entrepreneurs play an important part in the capital interweaving process, as they may possess diverse networks in host, homeland, and international contexts (social capital). They may use such networks to acquire financial funding (financial capital), to expand markets (economic capital), or to access infrastructural and governmental support (infrastructural and political capital).

Figure 9: Underlying research assumptions (RA) of article 4 concerning the impact of diaspora entrepreneurs in the development of the capital structure of entrepreneurial ecosystems. (Source: Baron & Harima, 2019).

3.2.2.2 Methodology

The study employed a single case study (Eisenhardt, 1989) with the Berlin entrepreneurial ecosystem as the unit of analysis. Employing a single case study is useful, as entrepreneurial ecosystems develop in unique ways (Isenberg, 2010). Hence, investigations need to be context-specific. Berlin was chosen because in the last few years it has been among the most dynamic ecosystems globally and is characterized by one of the highest shares of diaspora entrepreneurs among the entrepreneurs (Startup Genome, 2015). Between 2015 and 2016, eight in-depth interviews were conducted with four diaspora entrepreneurs and four experts of Berlin’s start-up scene. Table 5 summarizes information on the interviewees.

Interviewee	COO	Business	Age
Entrepreneur 1	Croatia	Messenger application	40–49
Entrepreneur 2	Syria	Cloud & tool-provider for data management	30–39
Entrepreneur 3	Australia	Online language tandem program	20–29
Entrepreneur 4	Norway	Online recruiting platform for start-ups	30–39
Expert 1	Germany	Venture capital company	—
Expert 2	Germany	Corporate accelerator/incubator	—
Expert 3	Germany	Manager of an electronic commerce company	—
Expert 4	Germany	Berlin Development Bank	—

Table 5: Overview of interviewees (Source: Baron & Harima, 2019).

Interviewees were selected via theoretical sampling (Glaser & Strauss, 1967). One criterion for entrepreneur selection was their relatively early stage of business development, as this enables investigating the kind of resources the entrepreneurs mobilize for their business activities. We intentionally selected diaspora entrepreneurs from different COOs to consider the heterogeneous backgrounds of this phenomenon and to take into account their multiple realities (Starke, 2010). The selection criteria for the experts were their duration and involvement in the local start-up scene. Further data were collected by field studies and reviewing secondary data.

In the analysis process, data were coded based on the categories of the adjusted capital model, which served the study as an analytical toolkit. Sub-order categories were derived by the authors independently and inductively. They were then discussed afterwards until a unified result scheme developed.

3.2.2.2.3 Key Results

The case study identifies diaspora entrepreneurs as important co-creators of entrepreneurial ecosystems. By describing various examples of how the diaspora entrepreneurs influence the development of Berlin’s ecosystem capital, their impact on the ecosystem development is seen to be two-fold. Diaspora entrepreneurs (i) reinforce capitals and (ii) interweave existing capitals in new ways.

Capital reinforcement

In the Berlin case, an influence of the diaspora entrepreneurs on the reinforcement of ecosystem capitals could be identified in regard to human capital, social capital, and cultural capital, as exemplified in table 6.

Capital	Examples of capital reinforcement
Human Capital	<ul style="list-style-type: none"> • Diaspora entrepreneurs transfer to Berlin their own human capital, which they have acquired in their COO or in another international context (brain gain). • Diaspora entrepreneurs attracted and moved external human capital to Berlin.
Social Capital	<ul style="list-style-type: none"> • Diaspora entrepreneurs acquire financial funding from their COO through their social networks and invest it in their Berlin-located business activities. • Diaspora entrepreneurs feed their own financial resources into the ecosystem (invest their own money in their own business activities or act as investors for other companies).

Cultural Capital	<ul style="list-style-type: none"> • The high number of foreign entrepreneurs defined the language of the Berlin start-up scene (English). • Diaspora entrepreneurs enrich entrepreneurial culture such as the perception towards failure.
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Table 6: Capital reinforcement by diaspora entrepreneurs.
(Source: own illustration, adapted from Baron & Harima, 2019).

Capital interweaving

Capital interweaving could be identified, but it differs among individual cases. Diaspora entrepreneurs in the conducted cases combine ecosystem capitals through their transnational social capital. While the study found that diaspora networks do not play a dominant role in the business activities of the entrepreneurs, the study identified that their transnational ties contribute to the ecosystem by sharing and opening the transnational networks to the community, which fertilizes capital combinations. The article illustrates several of such combinations of ecosystem capitals.

3.2.2.2.4 Contributions

Article 4 contributes to the ecosystem and diaspora research by identifying diaspora entrepreneurs' contributions to the country of residence. Since previous studies on diaspora entrepreneurs have focused on contributions they make to home countries (e.g., de Haas, 2006; Minto-Coy, 2011, 2016), this study provides a new perspective. It identifies them as auspicious co-creators of Berlin's ecosystem capital structure and describes the various impacts emanating from this actor group. Diaspora entrepreneurs strengthen and interweave Berlin ecosystem capitals by adding resources acquired through their distinctive backgrounds and transnational links outside of the ecosystem. The article addresses the calls made to focus on this specific actor group and their contributions to ecosystems (Audretsch et al., 2019) and contributes to the conceptual understanding of actor impacts by proposing an analytical toolkit reflecting resource sources through transnational linkages (see figure p. 230).

4 Discussion

As the articles for this cumulative dissertation have their own research questions, which do not in all cases give answers directly to the overarching research questions of this thesis, this chapter reflects the articles' key findings in line with it. While the findings of article 1 help to answer research question 1, the findings of articles 2, 3, and 4 contribute to answering research question 2. The overall findings are summarized below and applied in chapter 4.2 to the conceptual framework developed in this thesis to show the relations of the four articles' contributions to the discussion of idiosyncrasy.

4.1 RQ 1: The Idiosyncratic Nature of Entrepreneurial Ecosystems

Research question 1:

Which factors constitute the idiosyncrasy of entrepreneurial ecosystems?

Article 1 addresses this research question directly and gives a detailed answer (see article 1, pp. 74ff). The dissertation builds on the idea that firms possess competitive advantages by unique and firm-specific resource endowments from resource-based literature (Freiling, 2004; Grant, 1991). The competitive advantages of firm-specific, heterogeneous resources rest on isolating mechanisms (Freiling, 2001), which are forces “that limit the extent to which a competitive advantage can be duplicated or neutralised” (Rebernik & Mulej, 2000: 1135). In their “relational view,” Dyer & Singh (1998) have shown that the understanding of competitive advantages can be extended to contexts outside of firms. Article 1 transfers this understanding to the ecosystem context, and suggests that entrepreneurial ecosystems are idiosyncratic, as distinctive regional ecosystem resource structures rest on and are reinforced by isolating mechanisms (Dierickx & Cool, 1989; Rumelt, 1984; Teece, 1984; Penrose, 1959).

While the original resource-based literature proposes that the creation of firm-specific resources is governed by the decision making of entrepreneurs and managers, the ecosystem literature points out that ecosystems are “not hierarchically managed” (Jacobides, Cennamo & Gawer, 2018: 2255). This distinction allows one to raise the

question of whether or not the isolating mechanism discussion can be applied in the context of entrepreneurial ecosystems as the creation of regional distinctive resources cannot be traced back to strategic decisions made by a central decision maker. Ecosystem research argues that ecosystems possess an heterarchical informal governance structure in the form of network interactions and power relationships among institutions (Colombelli, Paolucci & Ughetto, 2019). Hence, ecosystem resources are created by the interplay of ecosystem actors (Mason & Brown, 2014) in the absence of hierarchy. A regional boundedness of ecosystems' interacting organizations is caused "by the non-redeployability of their collective investment elsewhere" (Jacobides, Cennamo & Gawer, 2018: 2255). Consequently, despite the absence of a focal decision maker, the internal processes of entrepreneurial ecosystems create isolating mechanisms in the form of intangible barriers to imitation, leading to ecosystem idiosyncrasy and, thus, allowing the concept's application.

This dissertation supports this understanding. In summary, article 1 detects four aspects in which entrepreneurial ecosystems differ from each other due to regional distinctive trajectories. By identifying which isolating mechanisms affect the uniqueness of entrepreneurial ecosystems, the article concludes that each entrepreneurial ecosystem is unique in (i) the presence and meaning of its regional resource endowment, (ii) the composition of its actor groups, (iii) and its ecosystem culture, while the (iv) evolution over time continuously changes the three aforementioned aspects in an idiosyncratic manner. While the article describes the mechanisms leading to the uniqueness of these four aspects from previous literature, it concludes that the idiosyncrasy of the aspects 'resource endowments', 'actors', 'culture' and 'evolution' result inevitably in an idiosyncratic ecosystem structure as they are an ecosystems constituting elements. While this explanation offers a first theory-backed understanding of ecosystem idiosyncrasy, it merely explains why the four identified aspects are idiosyncratic themselves. The community-led, bottom-up emergence processes of entrepreneurial ecosystems (Colombo et al., 2019) — and, thereby, the manner in which ecosystem actors and their interactions influence the idiosyncratic structure of entrepreneurial ecosystems — has been neglected and therefore will be addressed below.

4.2 RQ 2: Actor and Inter-Actor Level Effects on Entrepreneurial Ecosystem Idiosyncrasy

While the answer to research question 1 shows that an entrepreneurial ecosystem is idiosyncratic, due to the idiosyncrasy of its resources, actors, culture and evolution over time, the underlying mechanisms on the actor and inter-actor level influencing the emergence of an ecosystem's idiosyncratic capital structure have not been addressed. However, understanding the mechanisms in the actor and inter-actor levels are important, as the literature argues that ecosystems emerge in a bottom-up approach, through the interplay of their actors (Mason & Brown, 2014). Therefore, research question 2 is:

How do the inter-actor and actor levels of entrepreneurial ecosystems affect the ecosystem's idiosyncratic nature?

This section argues how the empirical findings of articles 2, 3, and 4 respond to this research question. Due to the aim of exploring the emerging nature of ecosystem idiosyncrasy, the following sections introduce the identified mechanisms on the actor and inter-actor levels of entrepreneurial ecosystems that contribute to the idiosyncrasy of an ecosystem's capital structure in two ways: through capital reinforcement of the ecosystem and capital interweavement processes.

This thesis understands **capital reinforcement** as strengthening resources classified within the capitals of entrepreneurial ecosystems. Based on the considerations made in article 1, entrepreneurial ecosystems are unique in the presence and strengths of regional resources. Reinforcing ecosystem capitals lead to changes in the structural composition, and therefore make the entrepreneurial ecosystem structure idiosyncratic, with related effects on its further development ('Asset mass efficiencies' and 'time compression diseconomies', Dierickx & Cool, 1989).

Capital interweavement signifies in this thesis the combination of ecosystem resources in diverse manners contributing to the idiosyncratic nature of the capital structure of entrepreneurial ecosystems. Interwoven ecosystem resources act in combination, and thereby become region specific, which makes them inimitable and unique. Capital interweavement displays the accessibility of ecosystem resources

though community members, as well as the dynamics of community activity and their social complexity (Barney, 1991). The more members have access to ecosystem resources, the more complex the interweavement processes of ecosystem capital structure become. Interweavement processes lead to capital structure complexity, which impedes the understanding of cause-and-effect relations (“causal ambiguity,” Rumelt, 1984) and reflects ecosystem asset interconnectedness (Dierickx & Cool, 1989). Interweaved resources strengthen the capital structure, as resources become regionally bound.

The identified mechanisms on the actor- and inter-actor levels causing the entrepreneurial ecosystem’s idiosyncratic resource structure through idiosyncratic capital reinforcement and interweavement processes are illustrated in figure 10 (p. 42) and explained below.

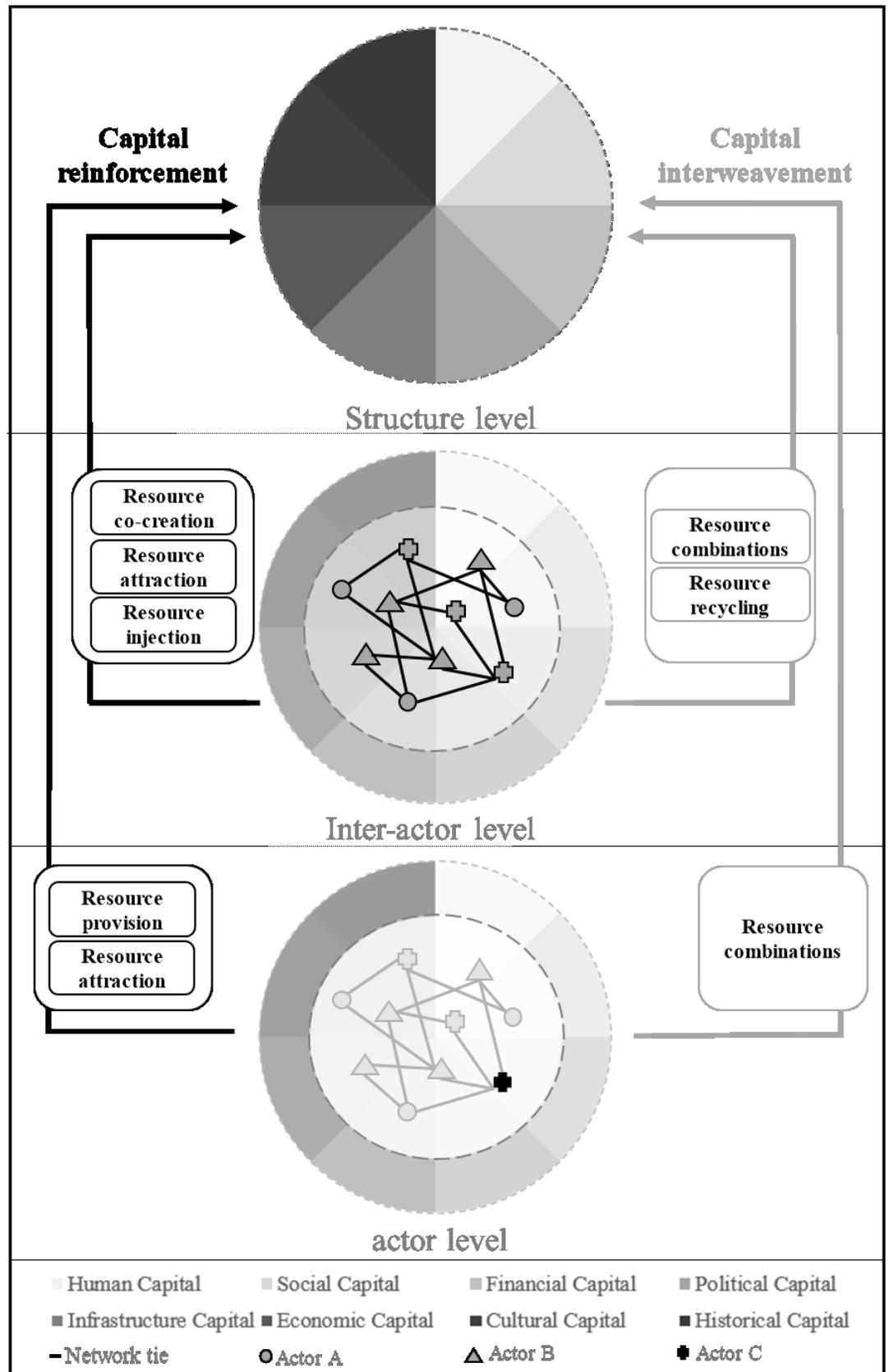


Figure 10: Mechanisms on actor- and inter-actor levels of entrepreneurial ecosystems causing the ecosystem's idiosyncratic resource structure through idiosyncratic capital reinforcement and interweavement processes (Source: own illustration).

4.2.1 Actor-Level Effects on the Idiosyncratic Capital Structure of Entrepreneurial Ecosystems

4.2.1.1. Capital Reinforcement Mechanisms on the Actor Level

Actors in entrepreneurial ecosystems are shown to reinforce ecosystem capitals in two ways, through (i) resource provision and (ii) resource attraction.

4.2.1.1.1 Resource Provision

The complex capital structure of entrepreneurial ecosystems encompasses the resources that are created by ecosystem actors in interplay as well as the resources provided by individual actors (Spigel & Harrison, 2018). Consequently, individual characteristics and activities lead to distinctive resource agglomerations in a region, which strengthen the capital of entrepreneurial ecosystems in idiosyncratic ways.

Article 4 gives various examples of how diaspora entrepreneurs contribute through their unique backgrounds and characteristics, especially to an ecosystem's human, financial, and cultural capital. This finding on the individual provision of resources to a region is supported by previous literature. Previous studies have detected further examples of actors providing resources to an ecosystem, such as human capital provision by educational and research institutes (Graham, 2014; Hooi & Ling, 2012) and MNEs (Bhawe & Zahra, 2019), social capital provision by accelerator programs (Brown et al., 2019; Goswami, Mitchell & Bhagatula, 2018) and serial entrepreneurship (Ensign & Farlow (2016), and financial capital provision by venture capital investors (Colombo & Murtinu, 2017), governments (Fuerlinger, Fandl & Funke, 2015) and accelerator programs (Hochberg, 2016). Contributing to strengthening an ecosystem's infrastructure capital is a function assigned to entrepreneurship support organizations (Spigel, 2016) and universities (Graham, 2014). The government is shown to strengthen political capital and cultural elements (Fuerlinger, Fandl & Funke, Isenberg, 2011). Cultural capital is also enhanced by the activities of universities (Graham, 2014; Hooi & Ling, 2012) and technology transfer offices (Sadek, Kleiman & Loutfy, 2015).

The resource provision of actors in ecosystems adds to reinforcing the ecosystem's capital structure. As the actors themselves are highly heterogenic (even when classified within the same actor group, as outlined by article 3), each actor's contribution

is unique. Thus, the provision of resources through the activities of the diverse unique actors leads to the presence and meaning of idiosyncratic capitals within the capital structure of entrepreneurial ecosystems.

4.2.1.1.2 Resource Attraction

The second way in which ecosystem actors reinforce ecosystems' capital is attracting resources to an entrepreneurial ecosystem. Article 4 has illustrated examples of how diaspora entrepreneurs attract investors and further sources of financial capital, as well as human capital, to an ecosystem via their transnational networks, in the form of highly skilled specialists from former countries of residence. The attraction of resources to a place by regional ecosystem actors is a mechanism, which has also been indicated by previous ecosystem literature. Previous studies add to this finding by detecting that governments engage in creating an entrepreneurship-friendly environment by strengthening such a culture (Kantis & Federico, 2012), or by reforming legal, bureaucratic, and regulative environments to attract entrepreneurs and talent to a region (Isenberg, 2010). As found by Hochberg (2016), the presence of accelerator programs goes hand in hand with regional funding possibilities, thus, attracting investors to a region. The attraction of transnational entrepreneurs through accelerator programs is also evident (Brown et al., 2019). Spigel & Harrison (2018) add that the success of an entrepreneur entails the attraction of talent, workers, and other firms to a region.

The attraction of further actors to an ecosystem reinforces ecosystem capital through individual contributions of the newcomers to regional resource endowments by their resource provisions (cf. 4.2.1.1.1.)

4.2.1.2. Capital Interweavement Mechanisms on the Actor Level

Ecosystem actors contribute to the interweavement of ecosystem capital by combining ecosystem resources in diverse manners. To conduct business, entrepreneurs use a variety of regional resources, many of which they can activate via their social capital (cf. Adler & Kwon, 2002). The cases of the entrepreneurs in this dissertation illustrate several examples. For instance, when finding investors, employees, or customers in start-up events, entrepreneurs combine the related financial, human, and economic capital via social capital. Since each actor has his or her own demands

and goals, the way individual actors use and interweave ecosystem resources is unique in each case, reflecting the heterogeneity of resource functions (Lachman, 1978) — thus, contributing to ecosystem capital structure idiosyncrasy. The interweavement process binds resources locally, as these act in combination only, as ‘complementary goods’ (Lachman, 1978), and therefore are difficult to detach from the region.

Besides ecosystem resource combinations, article 4 has extended this understanding by identifying that not only regional bounded resources are inserted and combined for successful business creation in ecosystems: resources from outside are as well. For instance, article 4 shows that diaspora entrepreneurs possess a distinctive feature over many other actors: expanded transnational network ties with unique effects on inter-regional capital interweavement. By making use of their transnational networks, diaspora entrepreneurs interweave various ecosystem capitals from different regions in COR, COO, and transnational contexts. Thus, they are identified as auspicious co-creators of ecosystem capital structures. Due to their transnational backgrounds and multiple embeddedness in different institutional contexts (Kloosterman, van der Leun & Rath, 1999), transnational entrepreneurs not only expand the social capital within an ecosystem, but they also create linkages between different ecosystems. A recently published study by Brown and colleagues (2019) supports this finding by identifying that transnational entrepreneurs in the context of accelerator programs are highly focused on exploiting such multiple networks to maximize opportunities. Interweaving ecosystem resources with resources from diverse regions outside an ecosystem extends the possibility of resource combinations and thus makes a capital structure far more complex and idiosyncratic.

4.2.2 Inter-Actor Level Effects on the Idiosyncratic Capital Structure of Entrepreneurial Ecosystems

While individual actor contributions on capital reinforcement and the interweavement processes of ecosystem capitals affecting ecosystem idiosyncrasy are evident as outlined above, the findings of the dissertation’s articles show that the reinforcement and interweavement processes occur in particular on the inter-actor level.

4.2.2.1. Capital Reinforcement Mechanisms on the Inter-Actor Level

The findings of the articles for this dissertation show that capital reinforcement of ecosystem capital occurs through three underlying mechanisms on the inter-actor level: (i) resource co-creation, (ii) resource attraction, and (iii) resource injection.

4.2.2.1.1 Resource Co-Creation

While the entrepreneurial ecosystem literature argues that ecosystem capital is co-created by inter-actor level activities (cf. Colombo et al., 2019; Jacobides, Cennamo & Gawer, 2018), the underlying processes are rarely covered by previous research. The examples identified and described within the articles of this dissertation give meaningful insights into how inter-actor activities co-create ecosystem resources and hence reinforce ecosystem capital.

Articles 2 and 4 show various examples of how actors in entrepreneurial ecosystems engage in networking activities. Building and cultivating network ties with community members, as well as opening one's own network to other ecosystem actors, is a common behaviour among start-up community members, with related effects on inter-actor resources and knowledge flows (cf. Van Weele, Steinz & Van Rijnsoever, 2018). Thus, inter-actor level activities predominately reinforce the social capital of an ecosystem. The dissertation identified start-up events as eligible settings for ecosystem social capital co-creation, as suggested by Startup Genome (2018) and Feld (2012). Studies on accelerator programs (Brown et al., 2019; Goswami, Mitchell & Bhagatula, 2018; Roundy, 2017) imply that these settings provide similar platforms for ecosystem social capital reinforcement. The knowledge transfer occurring through established network ties leads to the fact that other ecosystem capital is also strengthened. For instance, the co-creation of an ecosystem's human capital, in the form of professional entrepreneurship-related knowledge, reinforces the overall human capital of the ecosystem, as more individuals within it 'professionalise' through inter-community learning. Learning from peers is common in start-up communities (Motoyama & Watkins, 2014). It concerns not only the reinforcement of an ecosystem's human capital, but also the cultural capital, as inter-acting activities transfer, for instance, entrepreneurial mindset attributes, as outlined in article 2. Such a peer learning process is reflected in educational studies, defined as "the acquisition of

knowledge and skill through active helping and supporting among status equals or matched companions” (Topping, 2005: 631).

The selected examples above show that ecosystem capital is co-created and thus reinforced through inter-actor activities. Actor-interplay is grounded on an ecosystem’s social capital. Thus, ecosystems’ social capital can be understood as the ‘generative resource’ (Somers, 2005: 9) of the ecosystem’s idiosyncratic capital structure.

4.2.2.1.2 Resource Attraction

Another mechanism leading to the reinforcement of ecosystem capital through inter-actor-level activities is the attraction of resources to a region. Article 2 illustrated examples of how outcomes of inter-actor level activities attracted interested stakeholders to an ecosystem, such as would-be entrepreneurs and investors. Inter-actor-level behavior (such as the language spoken) displays the cultural attributes of an ecosystem to outsiders; thus, it affects an ecosystem’s image regarding its openness, specifically towards international talent. Isenberg’s (2010) descriptions imply that the way a community reacts to business success as well as failure also adds to the attraction of a place for outsiders, which is also result of a community culture that has been developed in inter-actor interplay.

The attraction of newcomers is accompanied by a change in the resource endowment of an ecosystem’s capital structure. Attracted newcomers add further types of capital to the existing asset stock of the ecosystem, and thereby reinforce the ecosystem capital. For instance, articles 2 and 4 illustrate that newly arrived entrepreneurs bring their individual human capital in the form of education, prior experiences, and knowledge to the ecosystem, thereby reinforcing the ecosystem’s human capital. In the case of investors, the strengthening of the ecosystem’s financial capital is also evident. Attracting human capital through inter-actor level activities leads to increasing the density of actor groups in a region. Hence, by the attraction of further actor groups, the composition of actors changes and social complexity increases, with related idiosyncratic effects on the ecosystem’s capital structure.

The attraction of actors to a region through ecosystem inter-actor activities is an important finding regarding the attraction factors of entrepreneurial regions. Regional studies examining the attraction of places have identified several physical and infrastructural factors, along with knowledge, technology, and quality of life as the main factors of talent attraction (Ewers, 2007). The gravitational pull of ecosystem communities in attracting newcomers, with related effects on regional capital reinforcement, is a rather new consideration in this regard.

4.2.2.1.3 Resource Injection

Interestingly, the dissertation shows that not only do actors from inside the ecosystem affect the reinforcement of ecosystem capitals, but outside actors do so as well, through network linkages into the ecosystem or temporal activities on the inter-actor level. For instance, article 2 has shown that actors from outside an ecosystem who are only temporarily present in an ecosystem (for instance, when participating in start-up events) add to an ecosystem's resource endowment. Saxenian (2001, 2004) supports this finding and offers further examples of such linkages between ecosystems. By sharing knowledge or by giving feedback to others, outside actor resources are transferred to individuals in the start-up community, thus contributing to ecosystem capital reinforcement. Investors from other regions who invest in companies of an ecosystem are another example of outsiders' injection of resources (Roundy, Bradshaw & Brockman, 2018).

Since ecosystem actors not only operate within the boundaries of an ecosystem but also possess ties to the outside sphere (Startup Genome, 2017), they are able to learn and acquire resources outside the ecosystem. Through their engagement in inter-actor-level activities within the ecosystem, they insert the acquired resources into the ecosystem and may even make them available to other ecosystem actors through knowledge-sharing activities. As an example, article 2 has shown that diaspora entrepreneurs possess strong transnational connections to their former countries of residence or origin. By maintaining their connections, diaspora entrepreneurs receive support from several outside ecosystem actors. This includes knowledge on markets and funding programs. Sharing this knowledge within the local community injects these resources into the ecosystem's capital structure. Startup Genome (2017) proved that ecosystems are connected to each other through actor activities and

showed that a regular exchange of ideas and global markets emerges in these processes.

Acquiring and adding outside resources to the capital structure of an ecosystem relates to the discussions of Spigel (2017) and Roundy, Bradshaw & Brockman (2018) on resource injection. As ecosystems have open boundaries and are adaptive systems, resource injections from outside of them affect ecosystem emergence (Roundy, Bradshaw & Brockman, 2018) regarding reinforcing ecosystem capital.

4.2.2.2. Capital Interweavement Mechanisms on the Inter-Actor Level

Capital interweavement on the inter-actor level occurs in two ways, through (i) resource combinations and (ii) resource recycling.

4.2.2.2.1 Resource Combinations

Inter-actor level activities combine ecosystem resources in diverse ways because ecosystem resources are bounded in the social networks of a start-up community (Spiegel & Harrison, 2018). Since ecosystems emerge via co-creation by ecosystem actors, their interactions lead to diverse interweavement processes (e.g., through mutual sharing of knowledge and cultural attributes). The use of these resources is limited to actors who have access to the local ecosystem community. The findings of articles 2 and 4 show various examples of how actors in entrepreneurial ecosystems engage in network activities by building and cultivating network ties to access the local start-up community and its resources. However, article 2 has shown that building networks alone is not enough for sufficient resource combination activities. Building trust to overcome barriers of liabilities of newness (Singh, Trucker & House, 1986) as a prerequisite to accessing community resources has been described in detail in article 2 and is in line with the legitimacy discussion raised by DiMaggio & Powell (1983). The dissertation identifies start-up events as eligible settings supporting participants to overcome these barriers through the functions described in article 2, thereby exemplifying how the human, cultural, and social capital of an ecosystem is interwoven. The article delineated several further examples of diverse combinations of ecosystem capital. Sharing information and expertise, as well as practicing cultural elements, was a common behavior reflecting the combination of several aspects of human, market, cultural, and social capital.

As mentioned above, start-up events are a platform for bringing ecosystem stakeholders together, not only from within the ecosystem but also from outside of it. While previous research noticed the resource injection from outside an ecosystem and the effects on ecosystem emergence (Spigel, 2017; Roundy, Bradshaw & Brockman, 2018), the mechanisms of how internal and external resources are combined remained unclear. Article 2 suggests that start-up events are one of the mechanisms through which external resources are integrated into an ecosystem, by inserting them into the interweavement processes of inter-actor-level activities.

4.2.2.2.2 Resource Recycling

The second mechanism identified through which inter-actor-level activity interweaves the capital of an ecosystem is through resource recycling processes. This aspect is visible in previous research.

Mason & Harrison (2016) explain that successful entrepreneurs who sell their companies have gained expanded networks and business experiences in addition to their financial wealth. Many of them do not leave an ecosystem but engage in further business activities as serial founders, business angels, or advisors (Mason & Harrison, 2006). While the successful entrepreneurs themselves can recombine ecosystem capital for new business activities, mentorship or business angel activities go in hand with networking activities and experience sharing, which lead to various capital interweavements through resource recycling processes. Article 4 described an example of how a successful entrepreneur combined various ecosystem resources through his inter-actor-level activities as business angel, advisor, speaker at events, and host of events.

Resources are not only released by successful entrepreneurs but also by failure. For instance, failed businesses release workers, who become part of the workforce in other companies (Toft-Kehler, Wennberg & Kim, 2014; Mason & Harrison, 2006).

These examples illustrate that business successes and failures release resources to an ecosystem which can be recycled by inter-actor activities, thus leading to various interweavement processes and making capital structures idiosyncratic.

5 Conclusion

5.1 Research Contributions

This dissertation examines the idiosyncratic nature of entrepreneurial ecosystems. Based on resource-based reasoning, it initially identified several isolating mechanisms causing ecosystem idiosyncrasy. In summary, such idiosyncrasy is displayed on a structural level of entrepreneurial ecosystems by its unique capital structure. The thesis identified the actor and inter-actor level of entrepreneurial ecosystems as causing forces of ecosystem idiosyncrasy. By so doing, it contributes to the calls in entrepreneurial ecosystem research to underpin the ecosystem construct theoretically (Audretsch et al., 2018; Stam, 2015) and to explain the idiosyncrasy argument of entrepreneurial ecosystems from theory (Brown & Mason, 2017).

In a second step, the thesis investigated the inter-actor level (article 2) and the actor level (articles 3 and 4) of entrepreneurial ecosystems to detect and describe their influences on the evolution of an ecosystem's idiosyncratic resource structure. Based on empirical data, article 2 identified the underlying mechanism of inter-actor level activities on start-up events. By so doing, it contributed to extending the knowledge on inner ecosystem dynamics, as previous research had indicated that start-up events were important settings of inter-actor relations (e.g., Feld, 2012) but knowledge was lacking on the roles these settings play in ecosystems. Start-up events are identified as mechanisms whereby internal and external ecosystem resources are combined, enabling newcomers and outsiders of the ecosystem to access the local start-up community and their social capital. Articles 3 and 4 focused on the actor level. While article 3 contributes to the understanding of actor heterogeneity by demonstrating the diverse backgrounds of actors classified within one actor group (transnational entrepreneurs), it scrutinizes the terminological use of transnational entrepreneurship critically and adds to the further development of the concept. Article 4 adds to the understanding of the role of individual actors in entrepreneurial ecosystems. The article identifies diaspora entrepreneurs as auspicious co-creators of ecosystems through their reinforcement and interweavement power on ecosystem capitals and through their unique backgrounds and distinctive characteristics. In addition to their ecosystem impact, diaspora entrepreneurs also connect ecosystems in transnational

contexts through their expanded transnational networks and activities. By illustrating diaspora contributions to ecosystem development, the article takes a new perspective and shows how diaspora entrepreneurs contribute to COR development, as diaspora literature has mainly focused on the perspective of homeland contributions (e.g., de Haas, 2006; Minto-Coy, 2009; 2011; 2016). By outlining the distinctive roles played by start-up events and diaspora entrepreneurs in entrepreneurial ecosystems, the dissertation contributes to the discussion on ecosystem actors and inter-actor processes. It also sharpens the understanding of the co-creation processes of entrepreneurial ecosystems through inter-actor activities such as peer learning and legitimacy creation. Through articles 2, 3, and 4, the dissertation contributes in an empirical manner to an understanding of factors which have been rarely considered in previous research in the context of entrepreneurial ecosystems. The thesis suggests considering start-up events and diaspora entrepreneurs as relevant and important aspects for the community-driven co-creation process of ecosystem emergence. Thereby it contributes to identifying priorities and focal components of entrepreneurial ecosystems as suggested by Maroufkhani, Wagner & Ismail (2018).

By reflecting on each article's findings vis a vis the idiosyncrasy discussion, the dissertation shows in a developed holistic framework the underlying mechanisms leading to ecosystem capital reinforcement and interweavement, which make ecosystem capital structures highly idiosyncratic. The identified mechanisms are described and aligned with previous research on entrepreneurial ecosystems. The developed model adds to the conceptual understanding of the complexity of entrepreneurial ecosystems and can serve as an analytical framework for future research on the inner dynamics of entrepreneurial ecosystems. The model acknowledges previous calls for a theory-backed model (Audretsch et al., 2018; Stam, 2015), which would reduce the complexity by focusing on key elements in sub-dimensions rather than producing long lists of ecosystem elements (Maroufkhani, Wagner & Ismail, 2018) and by considering ecosystem structure and actor (Brown & Mason, 2017), as well as inner-ecosystem dynamics (Malecki, 2018; Alvedalen & Boschma, 2017).

5.2 Limitations

The dissertation has the following limitations. Due to the chosen research design, the empirical findings are context specific; thus, they are not generalizable to each ecosystem setting. Even though the dissertation builds on empirical data from 32 in-depths interviews, the multiple realities of the highly diverse ecosystem actors could not be reflected by this number. The same holds true for the start-up events attended in the field observations. Which type of start-up event contributes to which of the identified roles in which manner cannot be determined.

Another drawback of the dissertation is that the time dimension is not considered. While article 1 has identified ecosystem evolution as one relevant aspect explaining the idiosyncrasy of entrepreneurial ecosystem capital structures, the dissertation did not conduct a longitudinal study; hence, the study cannot give empirical evidence on the evolutionary dimension over time. The dissertation has identified and described mechanisms leading to ecosystem idiosyncrasy through capital reinforcement and interweavement processes. These interrelations of the ontological levels of entrepreneurial ecosystems acknowledge dynamics in ecosystems. However, the manner in which these dynamics change over time could not be captured in the empirical articles, due to these time limitations.

There are also conceptual limitations. While the dissertation identified mechanisms of actor- and inter-actor reinforcing and interweaving of ecosystem capital, the debilitating of ecosystem resources through the emigration of ecosystem actors with an entailing outflow of resources was not put into consideration, as the empirical data do not contain such examples. Another limitation is that data on article 2 were interpreted by the author alone. While data triangulation (Denzin, 1970) reduced the risk of biases in the interpretation process, the possibility of biases could therefore not be fully prevented.

Finally, the theoretical contribution of explaining entrepreneurial ecosystem idiosyncrasy has a practical limitation. While its scientifically developed explanation addresses previous calls for theory-backed explanations of the idiosyncrasy argument (Brown & Mason, 2017), the practical utility and applicability of this theoretical contribution is rather limited.

5.3 Implications

The results offer implications for policy makers in several aspects. First, by explaining the idiosyncratic nature of entrepreneurial ecosystems the study supports the notion of the impossibility of copying success structures of other ecosystems. Hence, the study stresses the need for considering regional uniqueness in terms of resource endowments, involved actors, and institutional/time dimensions. It is recommended that policies be developed based on the needs of regional ecosystem actors and according to the weaknesses they identify in their practice. To be in regular contact with relevant actor groups by setting an appropriate platform for experience exchanges is one lesson from this research. Start-up events could be such platforms, as the dissertation found these settings to be eligible places for knowledge sharing and for assessing a start-up community.

The study on the functions of start-up events showed that they play auspicious roles in community activities. As the dissertation suggests, supporting the hosting of events financially or by providing locations could contribute to ecosystem network building and further development of human capital. The image function of events as outlined in article 2 also leads to important implications. Being aware of the potential that emanates from start-up events regarding the attraction of outside human capital shows a possibility to attract actors that is lacking in an ecosystem. Hosting sector- or actor-focused events could support making regions visible and attractive for the targeted actors, especially in times when they are competing for specialized talent (Ewers, 2007).

One of these addressable groups constitutes diaspora entrepreneurs. While their importance might vary among regions, the dissertation has shown their great potential of contributing to the development of a successful capital structure ecosystem. Targeting diaspora entrepreneurs requires setting pleasant environments addressing migrant entrepreneurs' needs. Such environments could be fostered by offering events and support programs in English, as the dissertation has identified that other languages can exclude diaspora entrepreneurs from start-up community interactions. Supporting the maintenance of an open and inclusive culture for actor diversity is one target in this regard.

In general, policy makers should create policies to increase the variety of actors within an ecosystem, as one finding from the dissertation is that each person has unique effects on capital reinforcement and interweavement, due to his or her unique background and characteristics. Strengthening capital reinforcement and interweavement processes leads to consolidating the regional ecosystem construct. Supporting the formation of links to other ecosystems can be one target to address in this regard, in order to profit from resource injections.

Nevertheless, the implications made need to be adjusted for policy development reflecting regional needs and characteristics, as the idiosyncratic nature of ecosystems inhibit a direct transferability of the success structures to other regions. Path dependency adopted through historical events or past policy decisions might counteract efforts, due to time compression diseconomies (Dierickx & Cool, 1989).

5.4 Future Research Perspective

This study has made a first step in investigating ecosystem idiosyncrasy. To understand the overall interrelationships between the different ontological levels of ecosystems and their effects on ecosystem structure idiosyncrasy, elements from the long lists of factors identified from previous research (cf. WEF, 2013; Isenberg, 2010) could be set into consideration to understand their role in this construct. As the complexity of ecosystems with their diverse elements makes it difficult to grasp which elements are involved in the interweavement or reinforcing mechanisms causing idiosyncratic ecosystem structures, an application of the ‘system constellations’ technique (Müller-Christ & Pijetlovic, 2018) could add to a better understanding of element interconnections among the ontological levels identified.

Furthermore, on the inter-actor level, studies on more start-up events are required to capture the wide range of event types. The mechanisms of start-up events identified as platforms to integrate injected outside resources, newcomers, and visitors into the ecosystem, with related effects on ecosystem idiosyncrasy, need to be into considered further to verify or challenge the propositions developed in this dissertation. Besides start-up events, settings such as informal get-togethers, policy debates, or

collaborative activities organized by start-up associations for inter-ecosystem collaborations could be a further step to uncover the inter-actor-level activities and their related effects.

The same holds true for the actor level regarding the role of diaspora entrepreneurs. The roles identified might differ, depending on ecosystem size and institutional setting. As for impact factors on ecosystem idiosyncrasy emanating from the actor-level, an understanding of the role of several ecosystem actors still remains incomplete. The high diversity of actors in ecosystems invites us to detect other actors' roles in this process, such as female entrepreneurs, role models, and digital nomads.

Due to the relatively short-term investigations of the aspects set in focus, a longitudinal study of factors influencing ecosystem idiosyncrasy would add to an understanding of them and of the changes in their effects over time, thus acknowledging ecosystem evolution in this overall understanding.

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Part 2: Four Research Articles

Article 1:

Blueprint Silicon Valley? – Explaining Idiosyncrasy of Startup Ecosystems

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Abstract

The concept of startup ecosystems has received significant attention from policy makers, particularly in the hope of transferring Silicon Valley performance effects to their own region. Previous research emphasizes the need to consider the unique and distinctive nature of the specific regional ecosystem in focus when developing policies for ecosystem development without a thorough specification and theoretically founded explanations. In this article, we address this gap and develop propositions why each ecosystem is unique in nature by employing resource-based reasoning. The article concludes that ecosystems are highly idiosyncratic and are, therefore, inimitable and non-transferable to other regions due to working isolating mechanisms.

Keywords: startup ecosystem, idiosyncrasy, resource-based approaches.

JEL: D830, D850, L140, L260, O180, R110

Article 2:

Attraction, connection, and qualification:

The functions of start-up events in entrepreneurial ecosystems

Thomas Baron (University of Bremen)

Abstract: Previous research has outlined the great contributions entrepreneurial ecosystems have made towards regional economic development. The question regarding the mechanisms that stimulate and foster ecosystem emergence is among regional policymakers' core topics of interest, as many aspects of the complex ecosystem approach remain undiscovered. While previous research indicates that start-up events might play an important role in entrepreneurial ecosystems, empirical research is specifically rarely considered. This article investigates the functions of start-up events in entrepreneurial ecosystems. Based on case studies conducted in Berlin and Bremen (Germany), the article derives propositions for the contributions start-up events make and suggests that such events play an auspicious role in entrepreneurial ecosystems as (i) attraction factors for outside human capital, (ii) settings for community building, (iii) platforms for knowledge sharing, and, consequently, (iv) settings for entrepreneurial human capital development.

Keywords: entrepreneurial ecosystem, start-up events, regional attractiveness, start-up community.

Total Words: 10,348

Introduction

Entrepreneurial ecosystems are regionally bounded areas that offer favourable conditions in which scalable and innovative firms may emerge and prosper through the availability and complex interplay of diversely independent actors and regional resources (Spigel 2017; Stam 2015; Mason and Brown 2014). Research has revealed the contributions entrepreneurial ecosystems make for regional prosperity mainly in terms of job creation and innovation (Cunningham and O'Reilly 2018; Morris, Neumeier, and Kuratko 2015; Startup Genome 2015; Mason and Brown 2014). Therefore, researchers and regional policymakers are expressing increasing interest in understanding the mechanisms of successful ecosystem emergence to support local entrepreneurial activity (cf. Autio et al. 2014). Previous research sheds light on several key elements and actors of entrepreneurial ecosystems to describe their functions and effects within these ecosystems as well as emphasize the importance of adopting a holistic view towards the topic in order to understand these factors' complex interplay. Nevertheless, previous research mainly focuses on specific actors or elements, while scarce attention has been paid to the scenarios of actual (f)actor interaction (e.g., start-up events); these settings are however often mentioned as important sites for start-up scenarios, especially with regard to community relationship building (Feld 2012; Motoyama and Watkins 2014; Startup Genome 2018). The high number and diverse formats of start-up events, such as pitching competitions, start-up weekends, start-up fail nights, inspirational talks about successful founders, and start-up conferences, connote such events' much broader functionality in entrepreneurial ecosystems than does common relationship building. However, these broader functions are also not captured by previous research due to lacking empirical insight on the topic. To close these gaps, this article's main objective is to answer the following research question:

What are the functions of start-up events in entrepreneurial ecosystems?

The study seeks to firstly identify the fields in which start-up events benefit entrepreneurial ecosystems and secondly derive causal propositions that open the discussion for future research on this topic. By analysing data from field observations at start-up events and in-depth-interviews conducted with start-up event participants

and organizers, this explorative study describes start-up event functions as (i) attraction factors for outside human capital, (ii) settings for community building, and, consequently, (iii) platforms for knowledge sharing that result in (iv) settings for entrepreneurial human capital development.

The remainder of the study is organized as follows. The article briefly introduces the current state of ecosystem research to highlight the gap in previous research that addresses start-up events as a relevant but overlooked element within the overall ecosystem construct. A review of previous considerations of the topic subsequently illustrates its important yet often insignificant link with ecosystem research. Next, the article provides an overview of the methodological approach before presenting and discussing the study's findings. The study concludes by addressing its limitations, contributions, and suggestions for future research.

Conceptual background

Entrepreneurial ecosystems

Mason and Brown (2014) define entrepreneurial ecosystems as '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' (p. 5). By specifying and varying input factors, more recent definitions (Stam 2015; Audretsch and Belitski 2017; Mack and Meyer 2016; Roundy, Brockman, and Bradshaw 2017; Spigel 2017) do not shake the foundation of the concept's core consideration, which describes bounded, favourable environments for high-growth entrepreneurship with relevant input factors (e.g., regionally present actors and resources), although the boundaries of these environments are not clearly defined (Stam 2015); micro-scales (e.g., ecosystems around universities) (Miller and Acs 2017; Hayter 2016; Wright, Siegel, and Mustar 2017), local scales (Cohen 2006; Feld 2012; Startup Genome 2017; Spigel 2017; Baron and Harima 2019), and national scales (Acs et al. 2016, 2017; Fuerlinger, Fandl, and Funke 2015; Autio et al. 2014) have already been designated by this term. The enablement of productive entrepreneurship apparent in terms of innovative high-growth firms and value creation

(Stam 2015, 2018) is the output of an entrepreneurial ecosystem that can be determined via several measures (Stam 2018; Bos and Stam 2013; Parker, Storey, and Van Witteloostuijn 2010; Daunfeldt, Elert, and Johansson 2014; Stangler and Bell-Masterson 2015).

Aside from discussions on a coherent definition, great efforts have been expended towards delaminating the concept from antecedent concepts, such as clusters and innovation systems (cf. Cavallo, Ghezzi, and Balocco 2018; Spigel 2016; Spigel and Harrison 2018), to develop a conceptual picture of the overall approach (e.g., Spigel 2017; Stam 2015; Aspen Network of Development Entrepreneurs 2013; Ahmad and Hoffmann 2007; Neck et al. 2004; Isenberg 2011) and explain ecosystems by applying theories and conceptual lenses from the institutional/organizational field (Thomas and Autio 2014), complexity science (Roundy, Bradshaw, and Brockman 2018), process-based views (Spigel and Harrison 2018), resource-based approaches (Freiling and Baron; 2017; Baron and Freiling 2019, Garcia Cabrera and Garcia Soto 2010), and social capital theory (Theodoraki, Messeghem, and Rice 2018).

All these approaches have in common that the presence and involvement of certain ecosystem actors and their interconnections play a critical role in sustainable ecosystem development. In order to specify how several ecosystem actors might understand an impact in this regard, research has expended great effort to identify the role key actors play, such as the government (Fuerlinger, Fandl, and Funke 2015; Kantis and Federico 2012), transnational entrepreneurs (Baron and Harima 2019; Saxenian 2000), universities and research institutes (Graham 2014; Audretsch and Link 2017), existing firms (Bhawe and Zahra 2019), and accelerators (Hochberg 2016). While the research on ecosystem actors is meaningful for unpacking the complex ecosystem construct, specific actors' isolated views cannot help to grasp the dynamic processes ecosystems undergo whilst emerging. Moreover, research highlights the importance of connections and interactions among ecosystem actors as a precondition of dynamic ecosystems (Auerswald and Dani 2017; Startup Genome 2017; Colombelli, Paolucci, and Ughetto 2019; Mack and Mayer 2016).

Feld (2012) and Startup Genome (2017) suggest that start-up events are a promising approach to the creation of such community connections. Despite these events' emphasized importance for ecosystem communities, empirical research in this area is rare; to date, the functions of start-up events in entrepreneurial ecosystems have not been sufficiently investigated. Moreover, the mere variety of start-up event formats indicates that community connections might not be the sole outcome of such scenarios.

Start-up events

The term 'start-up event' is not defined in the literature. In general, events are special occasions with defining characteristics often denominated as (i) planned, (ii) goal-oriented, and (iii) temporal phenomena that (iv) offer unique experiences (cf. Jäger 2017; Gebhardt 2000; Getz 2016). Events are typically created among a concrete topic (Jäger 2017) to achieve specific effects, such as economic, socio-cultural, and environmental outcomes, and are generally announced prior to the event (cf. Getz 2016). A start-up event's uniqueness lies in its differing settings, participant composition, and programmes addressing entrepreneurship related contents.

While a highly diverse landscape of start-up events can be noticed in practice, start-up event types have not been classified by previous research. General event literature provides several suggestions for classifying event types. Jäger (2017) summarizes the possibilities for classifying events based on how they benefit their participants (cognitive, emotional, and social benefits), based on the event's marketing aims (commercial or non-commercial), or based on content or size. Bowdin et al. (2012) specify the classification of events based on form or content (e.g., cultural, sports, or business), which is similar to an approach developed by Getz (2016), while a further widespread classification is based on an event's size (Bowdin et al. 2012; Jäger 2017).

As start-up events in entrepreneurial ecosystems are local events by nature, classifying event formats based on an event's content or goal rather than its size or marketing goals seems to be a promising strategy. Following Feld's (2012) suggestion, start-up events aim to connect their local start-up scenes. While the focused content differs among the event formats, networking in fact plays a role in start-up events in

practice, as networking plans can be taken from event agendas. Event organizers typically plan networking breaks within a program or schedule networking time before or after a program. However, considering the great variety of event formats that are involved in entrepreneurial ecosystems, start-up events' goals are much wider than the mere building of connections and are dependent upon their formats. While pure networking events exist, such as those centred around finding investors and co-founders as well as community meet-ups and start-up speed dating, other events primarily focus on the learning aspects. Table 1 provides an overview of selected start-up event formats to establish an impression of the variety of these formats and their differing content. The classifications are rather preliminary because events that aim for such social and cultural benefits often experience difficulty when defining their objectives, as Fredline and Faulkner (2000) explain.

[Table 1 near here]

While a start-up event's goal can be derived from its content, its function for the local entrepreneurial ecosystem has not yet been focused on. The broader event literature, however, offers meaningful effects that events have on communities, which might help one understand their impacts in a focused context. The festival and sporting event literature specifically provides a wide range of examples of such events' economic benefits, such as the attraction of tourists, job creation, investments in infrastructure, and business opportunities (Bowdin et al. 2012; Dwyer et al. 2000; Hall 1989). Aside from these economic outcomes, impact studies also discuss the positive and negative effects of such events on physical, environmental, and political dimensions (Gursoy, Kim, and Uysal 2004; Hall 1989), although scarce research has been conducted to advance this knowledge beyond economical and touristic insights (Quinn 2006). Nevertheless, event literature recognizes the social impacts events have upon their local communities. Pickernell et al. (2007) suggest that networking and social capital building may play especially important roles as new networks are built through the involvement of various stakeholders in event planning, participation, volunteering, or consumption (Misener and Mason 2006). Organizing and hosting an event require cooperation among several stakeholders, which thus creates an environment wherein people work on achieving the same goals, and thus

social interactions, social cohesiveness, and, consequently, the awareness of a community's resources are enhanced (Arcodia and Whitford 2007). Participating in events leads to a united celebration that strengthens social ties (Earls 1993) and can be specifically observed in festivals, as the 'celebration of [the] cultural and social dimensions[s]' (Wilson et al. 2017, 196) stands at the fore during these events.

While event literature has identified the above-mentioned promising impacts, the focus of prior research lies specifically on mega-events (e.g., the Olympic Games) and less on local events (e.g., start-up events). Therefore, the identified functions of previous event research might be of limited relevance with respect to start-up events because impacts such as the provision of more effective traffic infrastructure cannot be transferred across the differing contexts. This circumstance might be a reason why start-up events' contributions to and roles in entrepreneurial ecosystems have been solely grasped in fragments in previous research, which is discussed below.

In its study on entrepreneurial ecosystems, Startup Genome (2018) determined that local connectedness with other founders is specifically correlated with greater success in terms of venture performance. While the organization affirms that start-up events can play a role in connecting ecosystem actors, it concludes that the quality of relationships rather than the creation of physical proximity strengthens ecosystems. However, Stam and Spigel (2016) describe having a large number of start-up events in a region as an important prerequisite for community engagement.

Based on studies that discuss personal networks' positive effects on entrepreneurship in entrepreneurial ecosystems, Qian (2018) emphasizes that entrepreneurship initiatives also develop based on others' knowledge, and thus forming a strong network among 'knowledge creators' (p. 170) and entrepreneurs is essential for fostering the emergence of such 'knowledge spillover entrepreneurship' (p. 170). To draw connections between relevant entrepreneurs and stakeholders, Qian (2018) proposes that policymakers invest in strengthening local networks. In addition to other suggestions, the author specifically addresses the opportunity to financially support local entrepreneurship events that he suggests create network opportunities that in turn foster knowledge spillovers among the start-up scene's various stakeholders. Similarly, Feld (2012) describes the importance of events for connecting a local start-up

community. A higher level of local relationships is positively correlated with ecosystem performance, as Startup Genome (2018) describes in its report.

Motoyama and Watkins (2014) specify that in order to learn from peers with entrepreneurial experience, such ecosystem connections must not solely be established between novice and experienced entrepreneurs, but also between supportive organizations and entrepreneurs; according to the authors, start-up events are among the main catalysers for ecosystem interconnectedness. Motoyama and Watkins (2014) conclude, however, that action-based events in which participants must practise relevant skills are more supportive than are purely networking-based events in this regard. Further event functions include not only the gathering of actors, but also the provision of a platform for exchanging narratives and the formation of ‘collective sensemaking’ (Roundy 2016, 244).

Contradicting the solely positive effects of start-up events, Audretsch, Aldridge, and Sanders (2011) conducted a study on the outcome of an accelerator-hosted event in the form of a two-day workshop. The study found that relationships newly formed at the event were not supportive of the participants within the following years in terms of entrepreneurship promotion if the participants had not achieved an advanced development stage of a business idea prior to the event. Hence, the entrepreneurial process phase might determine event functions for attendees. These findings suggest that the use of participants’ social capital is only effective when a participant knows what kind of resources are required for a venture. Therefore, planned preparation and a clear business idea are essential for one to profit from this start-up event type.

Based on the previous research on start-up events, this article’s guiding presumption is that start-up events are more than suitable platforms for connecting relevant stakeholders in entrepreneurial ecosystems. As summarized above, the simple creation of connections seems to insufficiently constitute a meaningful function because these connections do not profit the participants’ access to an entrepreneurial ecosystem’s community resources per se. As indicated in previous research, start-up events also

seem to contribute to cultural aspects and knowledge, although their functions remain unclear; previous research findings in the event literature are also not fully applicable to entrepreneurial ecosystems due to the differing contexts.

Methodology

This study's goal is to identify how start-up events benefit entrepreneurial ecosystems. Because very few indications can be deduced from previous research, a broad question should guide the study to derive propositions for future research to avoid limiting the view on the topic. Thus, this article investigates the following research question:

What are the functions of start-up events in entrepreneurial ecosystems?

Due to the scarce prior knowledge on the topic, this study applies an inductive, qualitative research design by conducting a multiple-case study (Yin 2009). This approach is suitable in early research stages (Ghauri 2004; Eisenhardt 1989) and enables one to dive into the complex social phenomena of real-life-events whilst maintaining the holistic view (Yin 2009) that is given in the context of entrepreneurial ecosystems. The inductive design is required due to the few indications identified by previous research and because the nature of start-up events is both diverse and complex. These issues impede the derivation of clear propositions from previous research regarding start-up event functions. In line with the goal of case study research, this article strives to expand the existing knowledge and explain causal links between start-up event settings and the benefits they pose to entrepreneurial ecosystems based on the case study evidence of individual participants via an analytic generalization (Yin 2009).

The main source of data collection was semi-structured, in-depth interviews with seventeen entrepreneurs, five would-be entrepreneurs, and seven event organizers, for whom Table 2 presents an overview.

[Table 2 near here]

The differentiation between entrepreneurs as founders who are already working on a defined business idea and would-be-entrepreneurs who are entrepreneurship-interested individuals with no current specified business idea was inspired by the findings of Audretsch, Aldridge, and Sanders (2011) and might reveal differences in the events' impacts upon these ecosystem actors. For data selection, interview partners were assigned among the group of entrepreneurs via snowball sampling (Marshall 1996) according to their participation in start-up events, which aligns with the criteria derived from this article's conceptual background. The author attended start-up events in both Berlin and Bremen, Germany. Berlin, with its 3.6 million inhabitants (Statistical Office for Berlin-Brandenburg 2018), is listed among the top ten global entrepreneurial ecosystems. The city is well known for its ecosystem's highly dynamic and diverse set of actors (Startup Genome 2017) as well as its booming and well-developed start-up scene that is reflected by a heterogenous landscape of start-up events. In contrast, Bremen, with its 568,000 inhabitants (Statistical Office Bremen 2018), is in an early developmental stage regarding its ecosystem structure, which is indicated by a thriving founder scene (Kollmann et al. 2018) and an increase in regularly hosted start-up events. Without comparing event functions in the different regions, analysing two ecosystems in different developmental stages allows this study to elaborate upon the institutional influences of potential start-up event outcomes to capture a broader perspective of these events' roles.

Because the author conducted all interviews in Berlin, data on entrepreneurs and would-be entrepreneurs in Bremen are secondary. In order to increase the Bremen data's validity, the author interviewed organizers in Bremen to grasp his own image of the Bremen case. Interviewing organizers and participants should reflect a more holistic view of the topic to analyse the interviewees' 'multiple realities' (Stake 2010, 66). The author selected event organizers according to the theoretical sampling principles (Glaser and Strauss 1967) due to their strong presence and involvement in the local start-up event scenes. In addition to the interviews, the author conducted field observations by participating in start-up events to collect data concerning each event's nature, content, and participant interactions. Table 3 provides an overview of the attended events. This heterogeneous data collection source has supported the data's validity during the data collection phase (Yin 2009) as well as the

findings' validity through data triangulation (Denzin 1970), which reduces the likelihood of misinterpretations (De Geer, Borglund, and Frostenson 2004).

[Table 3 near here]

Data collection was held between 2015 and 2019. The interviews were semi-structured according to various themes following the suggestions of De Geer, Borglund, and Frostenson (2004). Time was allotted for open storytelling during the first half of each interview, while more precise questions were dug into during the second half. The interviews were conducted in either German or English depending on each interviewee's preference. All interviews were audio recorded and transcribed verbatim in their original language to prevent the occurrence of misunderstandings.

A multiple-case study was chosen because a single case does not appear to be sufficiently comprehensive for the broad topic under study and because the findings identified through a cross-case synthesis are more robust than are those of a single-case study, thus increasing their validity (Yin 2009).

Charmaz's (2014) three-step approach inspired this study's data analysis, whose transparent and systematic process was technically supported by MAXQDA and Microsoft Excel. During the first step, interview data were paraphrased to reduce their complexity, reaching an outcome of 1,035 initial codes that were inductively derived without any prior coding scheme. During the second step, the paraphrased codes were classified among similar themes (selective coding), while during the final step (theoretical coding), the findings were connected to build theory patterns. Figure 1 illustrates the coding process steps according to the visual suggestion offered by Gioia, Corley, and Hamilton (2012). Moreover, the findings are descriptively analysed and interpreted in a cross-case synthesis in the next chapter to make further comprehensible the derivation of causal propositions based on the case data results.

[Figure 1 near here]

Results and discussion

The case study data suggest that start-up events have four important functions in entrepreneurial ecosystems. Start-up events act (i) as attraction factors for outside human capital, (ii) settings for community building, and (iii) platforms for knowledge sharing. As a result, start-up events are (iv) conducive environments for the (further) development of entrepreneurial human capital, and each of the identified roles is outlined below.

(i) Start-up events as factors of human capital attraction

The interviewed organizers (O4, O5, O6) reported that start-up events contribute to the local start-up scene's visibility, dynamics, and consequent reputation that attract newcomers to the start-up scene.

Individuals become aware of a regional start-up scene through start-up events in the corresponding region, while the number of start-up events and event participants reflect the region's interest in entrepreneurship (E8, O4). Specifically, in Bremen, O5 realized the outside sphere's increasing interest in the start-up scene and learned that investors from Hamburg and Hanover were present at his most recent events. O6 explained this occurrence through the events' expansion, including the related marketing campaigns that signalled his response: *'there is something going on in Bremen'*. The events reflect a vibrant start-up scene that in turn signals the region's interest in supporting entrepreneurship (O5). Hence, start-up events affect a local start-up scene's visibility. The finding of events that affect the attraction of regional attention is supported by previous event literature. Specifically, the attention regions receive by hosting mega-events (e.g., the Olympic Games or the World Championships) has been outlined (Getz 2016). While start-up events are not comparable to such mega-events regarding media coverage and international awareness, the data reveal that their attraction effect is nevertheless noticeable within the relevant stakeholder groups.

In the case of Berlin, the ecosystem's achieved visibility led to the creation and spread of its image, which in turn attracted further start-up-interested individuals

from the outside. An image's importance for attracting visitors to a certain place has been sufficiently covered by event studies, especially in the tourism literature (Richards and Wilson 2004). The tourism literature provides several examples of how specific events contribute to a destination's image (e.g., Lee and Arcodia 2011; Richards and Wilson 2004) and how a destination image affects tourists' attitudes and behaviours towards a particular region (Deng and Li 2014). A corresponding mechanism seems to arouse start-up-interested individuals towards start-up events.

In the Berlin data, it becomes evident that the image of Berlin's start-up scene was not only transferred to guests and newcomers, but also resulted in an influx of newcomers willing to work on their own start-up ideas. In some cases, attending start-up events was a clear impact factor for one's decision to move to Berlin and begin operating one's start-up business within this ecosystem. At the time the interviews were held, W1 was on a one-week stay in Berlin to visit events and obtain an impression of the start-up scene within his location of choice. E5, who had begun his start-up endeavour in Cologne, relocated to Berlin because he was '*...visiting Berlin for a weekend and got to know many people and I realized that the start-up scene is quite interesting...I went to [a] few events related to the tech industry and I started making different connections and I found it to be a suitable place for me*'. E2 specifically noted that '*events are the main reason*' he relocated from Koblenz to Berlin; similarly, E2 asserted that: '*When we came to Berlin for the first time...we came to Humboldt University, to something called "start-up camp Berlin", and there I met a lot of interesting people and tried to learn a lot and ended up convincing me to come to Berlin*'.

E2 was attracted to Berlin once he realized that the city's start-up scene operates in English: '*Why do you think why I am coming to Berlin? [laughing] I am not sarcastic, but German is a very, very hard language. I could not learn German very well*'. A quite similar reasoning was offered by E3, who relocated from Bremen to Berlin for several reasons—one of which was that he, as an entrepreneur with limited German language skills, found interacting with the local start-up scene in Bremen rather difficult, as the environment there '*is still German-centric*'. For this reason, his main aim to network at events and exchange experiences was not satisfying. Despite his recognition that the number of events in Bremen has increased over the last few

years, he deduced that, for internationals like him, ‘...with the events...nothing happening in Bremen...We have tried everything with the meetups. No matter how few they are, we tried to go there but it feels that, for internationals like us, it would be easier to adapt to the start-up environment when we are in Berlin’. Regarding the start-up events in Berlin, E3 was delighted that ‘they are mainly in English...That is really good, and it helps a lot for me’. These empirical examples of start-up events that display ecosystem characteristics that attract outside human capital exhibit similarities to the causalities discussed in the tourism literature regarding the planned association of positive event characteristics with a region for attracting tourists. Hall (1992) points out the effects major events can have on a region’s image to position that region as a potential travel destination. In fact, cities have recognized this potential and utilize event hosting to enhance their image and make a profit by attracting tourists (Law 1993; Selby 2003). The data do not demonstrate whether or not Bremen and Berlin are aware of the image effect start-up events have, although the effect is clearly recognizable in the empirical data.

Proposition 1: Start-up events influence the attraction of outside human capital by affecting an ecosystem’s visibility and image construction as well as by displaying entrepreneurial ecosystem characteristics.

(ii) Start-up events as access points to an ecosystem’s community network

A. Events as conducive environments for building connections

Connecting with the local start-up scene requires being involved in networking activities. In fact, the main reason why the interviewees attend start-up events is to get in touch with other ecosystem stakeholders to build and expand their own networks. New arrivals to an ecosystem describe that they participate in events mainly to get in touch with their local start-up community and obtain an overview of the scene and the accompanying relevant information. As the interviewees asserted, newcomers’ general access to the start-up scene networks is a valuable contribution of these events.

When arriving at a new city, founders want to build connections and friendships to avoid loneliness (W1) and to acquire information relevant for their founding processes (O1). In Berlin, the interviewees specifically recognized the inflow of foreign founders, whose presence is reflected in the local start-up events: *'I didn't meet many Germans in these events. Yeah, most of them are international'* (E1). W2 added that *'...there are a lot of migrants which go to events. You find 70% that are not from Germany, but there are really a lot of foreigners that just came last year'*. This considerable share of newcomers attending start-up events mirrors an event's function as an access point to the local start-up community and as a setting for seeking initial information. O1 even viewed these events as a certain integration mechanism for newcomers, describing that one must attend events for three to four weeks to acquire all the necessary relevant contacts.

Aside from the willingness to exchange knowledge with peers, which constitutes the primary function of the interviewees' new contacts, building networks with other groups became visible in the field observations. In addition, entrepreneurs E1, E4, E8, E10, E16, E17, and W4 and organizers O5, O6, and O7 claimed to look out for their team members (i.e., co-founders, employees, and interns) during their event participations. The same holds true when searching for investors, who attend events to look for investment cases (E4, O6) and even encourage entrepreneurs to preferably get in touch with them in this informal setting rather than apply with a pitch deck via email. W4 confirmed that he has met many investors at start-up events, while E3 and E4 successfully made initial contact with their investors at events: *'Do you know how we found our current investor?...that was also like a start-up weekend but in a different format...and our current investor was there as well and he saw me shouting a lot and being loud and sweating...and the guy recommended us to everyone and that's how we got to know our current investor'* (E4).

Getting in touch with potential customers was another widely discussed topic during the interviews. E1's main purpose of visiting events was to find clients, as start-ups are the target group of his business. E3, E9, E11, E15, and W4 came into contact with clients at events for two reasons: to validate their ideas with customer feedback and to promote their products. Occasionally, the interviewees also became familiar with mentors (E3), consultants (E3, O6), and the press (E9).

The above-described connections are due to the diverse composition of attendees at start-up events rather than solely ecosystem members from the same industry or region. O4, O5, and E8 observed that start-up events play an important role in connecting a region's interdisciplinary stakeholders, as sector-specific events cannot achieve this effect. While entrepreneurship events at universities might be important for outlining an entrepreneurial topic among students, E11, who was both a founder and a university student, determined that a group of attendees at a university event whose composition is around 80% students is too homogenous; therefore E11 appreciated the different sets of founders, students, and employees at the start-up events, stating '*more competences with various backgrounds come together*'. Research on organizational learning confirms that such heterogenous groups that are cognitively diverse facilitate the creation of new knowledge (Mitchell and Nicholas 2006).

Aside from their cross-sectional connections, start-up events also provide settings for interregional cooperation and connections; some participants (e.g., O5) observed individuals from other regions who might have been attracted by the events described above. For instance, start-ups from the Netherlands and smaller cities from the catchment area around Bremen can meet at Bremen start-up events. As the start-up scene in Berlin is highly internationally influenced, start-up conferences with international speakers from all over the world attract visitors from multiple areas and potentially connect with founders from the local start-up scene.

Previous ecosystem research supports this study's empirical findings that community-building activities are facilitated by start-up events. Stam and Spigel (2016) as well as Feld (2012) describe these events as a key pillar for community connections and engagement. The interview data outlined above reveal newcomers' willingness to get in touch with their local start-up community and obtain authentic information about the entrepreneurial ecosystem. The tourism event literature supports this finding by demonstrating that small events are appropriate environments for satisfying a visitor's desire to be involved in something authentic and meet locals (Getz 1989).

Proposition 2-A: Start-up events allow newcomers to access an entrepreneurial ecosystem's local start-up community by providing an eligible environment that supports networking activities and connection building among diverse actors of the ecosystem's community.

B. The creation of conducive conditions for networking activities

The interview data suggest that, in order to access an ecosystem network, newcomers must establish attention among and a sense of belonging within a start-up community. The interview data suggest that start-up events are favourable environments for the creation of these conducive conditions.

According to the interviewees, in order to be perceived as an approachable entrepreneur, one must command attention. Participating in start-up events is a valuable opportunity to become known within one's local start-up community, as E14 explained: *'Bluntly spoken, it is about seeing and being seen'*. E4 even hosted start-up events in his office facilities, mainly *'...to show a number of other companies that don't know that we are here, so to say "hey, we are also in Berlin. We want to be part of the ecosystem," and then whatever is happening, we like to be included...So that was the main reason: to put us on the atlas'*.

Through this behaviour, the ecosystem's members acquire an overview of part of the start-up scene, such as the company names and with whom to converse or with whom to make introductions if one has specific questions or cooperative ideas (E9, O4). O1 and O2 pointed out that even in a large ecosystem such as Berlin, the community is still small enough to come into contact with the key players, and thus regularly attending events enables that one obtains an overview of with whom to network in a relatively short period of time. O4 and O5 agreed upon the Bremen ecosystem's small size as being an advantage in this regard.

Drawing attention to oneself is considered not only supportive of getting in touch with other peers, but also valuable for promoting one's own products to attract customers, as E11 highlighted. Participants might become familiar with a company's products for one's own use or spread the information within one's own networks if

relevant, as E9 exemplified: *‘...even if one would like to support local, regional firms, one needs to know that they exist. In my opinion, events are supportive for this to create [an] external image, and we know [that] if we need a solution, then I’ll go to this person’*. O5 and O6 found presenting or speaking at pitching events to be useful opportunities for drawing attention to oneself, especially regarding newcomers due to these events’ facilitation of reaching many people.

In addition to becoming known, attendees’ willingness to connect with one another is triggered by an existing emotional connection between them. Attending events sparks a feeling of togetherness and a sense of belonging when participants recognize like-minded people working on similar dreams. E3 expressed this feeling when reflecting upon his reason for attending events: *‘I went there because there were also a lot of other food start-ups that I could network with. So that for me is the more important part in terms of business and partnerships—just meeting other entrepreneurs who share the same problems because it feels like you belong to something’*. E9 agreed, adding that events convey that one is not *‘alone on the wide floor’*. These statements align with the discussion of belongingness in psychology research, wherein belongingness is defined as a ‘sense of personal involvement in a social system so that persons feel themselves to be an indispensable and integral part of the system’ (Anant 1966, 21). Human beings strive to form interpersonal relationships to become connected and avoid both isolation and loneliness (Baumeister and Leary 1995; Mellor et al. 2008). This study’s empirical data indicate that this effect is also true for start-up communities, thus supporting the paradoxical finding of Pfeilstetter (2017), who determined that although start-up entrepreneurs are often characterized as individualists and conduct businesses with digital technologies, these normally community-eroding characteristics paradoxically lead to a sense of belonging and form group solidarity in start-up communities.

Proposition 2-B: Start-up events help newcomers draw attention to themselves and establish a sense of belonging, which are conducive conditions for networking activities.

(iii) Start-up events as platforms for knowledge sharing

A. Knowledge sharing at events

The data illustrate that accessing the start-up ecosystem's community leads to the transfer of information from the community to its newcomers. The networking aspects at events specifically contribute towards the engaged information exchange between participants. The discussed topics vary from ecosystem/city-related information to professional business knowledge and experiences. E1 and E4 described that when they migrated to Berlin to begin their business activities, they both received many personal hints about the ecosystem and the city concerning '*...where to find good food, where to buy good furniture, and then down to tips like where you can buy [the] best pizza in Berlin and stuff like that...also what start-up places in Berlin are*' (E4). The interviewed would-be entrepreneurs without prior business experience or a business education background (W2, W4) tried to acquire basic business knowledge by participating in start-up events. W4, who was a physics researcher, wanted to obtain an overview of how business creation actually occurs and what processes must be followed to be successful: '*To develop the business, you need to have the full idea...how to start and what you can expect...Because it is completely new for me...There are some events where the founders come, and they say about their experience starting from zero and building up from—like how they built up the team, how they work, how they actually built the culture...it's good to learn from the pre-knowledge of others' experiences*'. W2 added to this, concluding that '*Through the events, you will get more knowledge that will help you during [the] creation of your company*'.

Aside from this basic information, E1, E2, E9, W1, W2, W4, and W5 considered concretely business-related knowledge more important for obtaining access to events, receiving answers to specific questions, and thus learning from others. W1 summarized his reason for attending start-up events: '*...to get answers to my questions, to solve my problems. In [the] context of my business, this means how to overcome issues with certifications of hardware products...How can one produce in China?...how do I find my market? Meet people who can help you along with this...*' At the time the interviews were conducted, E1 was asking specific questions at

events concerning market and legal knowledge: *'This includes some logistical stuff, like founding the company, hiring a lawyer, hiring a tax advisor—everything related to a company's operation'*. Mutual learning was reported by most interviewees alongside several examples of shared experiences with failure (E9, W5), information on human resource acquisitions (E4) and salaries (E5), finance possibilities (E1, E6, E9, W4), social media strategies and online scaling (O6), taxation issues (E14), the formal legal founding process in Germany (E3, W2, W4), feedback for their products and business ideas (E17), and technical issues (O2, W2). Aside from addressing specific questions, conversations at events also contribute towards broadening attendees' general knowledge, such as the latest trends, changing industries opening up new business opportunities (E4), and the selection processes of venture capitalists, the last of which E1 described to be potentially relevant for his future. To acquire knowledge regarding these aspects, the participants reported their willingness to talk not only with peers at similar stages, but also with more experienced individuals from both the same industry (E8) and from different fields in which they had no experience (W2).

Entrepreneurship research supports the study's findings regarding the roles of networks in entrepreneurship. Cope, Jack, and Rose (2007) refer to the emerging perspective in entrepreneurship research that building networks provides sources of information and support through mutual learning. The general possibility of gaining advantages from building social relationships is also sufficiently covered by the social capital discussion (see Adler and Kwon 2002). Nahapiet and Ghoshal (1998) define social capital as 'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit' (p. 243). The findings reveal that participants attend start-up events to build networks and profit from specific information that is transferred from the established network ties, which aligns with the discussion regarding social capital's facilitating function in entrepreneurship (Chung and Gibbons 1997) and in the formation of start-up companies (Walker, Kogut, and Shan 1997). Walker, Kogut, and Shan (1997) determined that network formation is influenced by the development and maintenance of social capital. In fact, our data indicate not only that event attendees participate in events to build new relationships, but also that events

are recognized as eligible environments that cultivate existing relationships (E9, E16, E17, W2) such that attendees may ‘...*maintain networks and...meet again and again to further develop the connection*’ (E16).

Proposition 3-A: Start-up events profit newcomers via relevant information on the ecosystem and general business-related topics that offer conducive platforms for social capital building and result in knowledge sharing among participants.

B. Events as environments to overcome prerequisites for knowledge sharing

While established founders described entrepreneurs’ considerable willingness to share their experiences and knowledge and to support one another (E2, E4, E5, E7, E9), the conducted cases indicate that, beyond a small-talk level, newcomers must adapt to community rules in order to acquire access to the advanced experiences and network support of other entrepreneurs; thus, having a certain legitimate status seems to be a prerequisite to being recognized as a trustful member of a start-up community. Adapting to community rules is an observable prerequisite for receiving information. Start-up events contribute towards identifying such community rules, as W3 addressed: ‘*If I attend these sorts of events, I find that a start-up’s attitude and culture indicate how people are doing here*’.

Observing, adapting to, and practising others’ behaviours and community rules at events is a strategy several interviewees mentioned (W2, W3, W4). E2 found that he only receives feedback to open questions and when actively critiquing others’ concepts to initiate deep conversations. W3 realized that he needed to ‘*impress*’ others to be perceived as a legitimate community member: ‘...*when I tell someone: ok, I have met the founder of GitHub the other day. In this last event I have also met some very cool guy from some well-known company. If I tell this to someone, it creates sort of a perception [of] “ok, this man can or may have some knowledge about doing some stuff, he has experience, he has these things”*’.

A further unwritten rule that may be recognized in the interview data is that, in order to receive support from others, a certain mutuality in knowledge sharing seems to

be expected; E3 experienced that one must legitimize oneself as being a trustworthy entrepreneur: *'You need to prove something, I think. Here, at least, you have to show that you can offer something to the community as well. They have serious questions, like the basic stuff: what is your start-up? What are you doing? What can you offer to other entrepreneurs?'*. Event organizers (O4, O6) also acknowledged this aspect of mutuality and therefore established strategies to encourage newcomers to enter the network by explaining certain community rules (e.g., *'share knowledge and ideas'* on stage), preparing icebreaking games/questions, or marking participants with different colours according to their fields (e.g., business, design, IT) to help them find their peers.

Adopting and aligning one's behaviour with these unwritten community rules might contribute to one being perceived as a community member. Another main aspect in this regard is the discussion of giving back to one's community. The interviewees raised several examples for contributing their ideas and developing others' expertise via personal feedback (E2, E4, E5), sharing contacts (E4, E7, W1), giving speeches at start-up events (E2, E4, O1), and motivating others to continue with their business development (E2). These examples reflect a 'give before you get' attitude (Feld 2012, 147) in which a direct return is not expected, as E7's quote illustrates: *'I think if you have gone through it one time, why should someone else suffer through it? There is a very big thing about start-up karma; you help someone, one day it is going to come back and help you—either through them or maybe they know someone they can give you an intro'*. E2, E4, E5, and W1 reported the realization that the start-up community is generally characterized by an open and cooperative culture that is more inclusive than exclusive. Events in Berlin are mainly held in English, while those in Bremen are held in German, thus reflecting that language is a cultural dimension of a community member's behaviour that can be easily noticed at start-up events. By participating in events, adopting the observable community rules, and contributing to discussions, participants may reach a legitimate status as community members, as E9, E13, and W3 mentioned. Attendees trust feedback from their peers and other like-minded people more than that of outsiders, which is why event questions are specifically addressed to these individuals: *'...if you get feedback from*

people who are in a similar situation...you get the feeling they know what they are talking about' (E9).

The finding that one must adapt to the existing community rules in order to be perceived as trustworthy and consequently overcome the barriers to accessing the local start-up ecosystem network can be explained by the legitimacy discussion raised in the new institutional literature (DiMaggio and Powell 1983). Suchman (1995) defines legitimacy as 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions' (p. 574). Hence, to access and mobilize a network's social capital resources, one must establish oneself as trustworthy (Coleman 1988), as trust is a prerequisite for knowledge sharing (Abrams et al. 2003; Hashim and Tan 2015). The difficulty for newcomers in start-up ecosystems is that they suffer from liabilities of newness and foreignness (e.g., Eden and Miller 2004; Zaheer 1995) because they are not embedded in their local community. In order to overcome these liabilities and gain legitimacy, newcomers observe and absorb community practices by attending start-up events that ultimately result in mimetic behaviour; this behaviour is sufficiently reflected by DiMaggio and Powell's (1983) and Zaheer's (1995) mimetic isomorphism discussion. New institutional theory explains this finding by arguing that individuals are shaped by their external environment (Powell and Bromley 2013), which leads to coercive isomorphism via a community's cultural expectations (DiMaggio and Powell 1983). As legitimacy is socially constructed (Suchman 1995), start-up events as settings of community interaction seem to allow one to reach a legitimate status as community member. Moreover, the interviewees' statements that feedback from experienced entrepreneurs is considered more trustworthy than that from other event participants (E9) aligns with these explanations because experienced entrepreneurs have already achieved a legitimate status. The legitimacy discussion in the context of start-up events might be a promising approach for understanding the inclusion and exclusion criteria of becoming a member of a start-up ecosystem's community and how institutions (e.g., start-up events) affect an ecosystem's culture by influencing attendees' behaviours. Affecting newcomers is highly relevant in this context because in successful ecosystems, such as Berlin and Silicon Valley, around 50% of all entrepreneurs are

migrants (Startup Genome 2017) who are identified as important co-creators of ecosystem dynamics (Baron and Harima 2019).

Proposition 3-B: Start-up events help newcomers reach a legitimate status among the start-up community members by adapting to the community rules so as to be perceived as trustworthy, thus enabling their receipt of information.

(iv) Start-up events as conducive environments for the (further) development of entrepreneurial human capital

Having both reached a legitimate status and gained access to information-sharing processes by attending start-up events, the participants' entrepreneurial human capital development has been affected in the following ways: (A) an influence upon the generation of entrepreneurial inspiration and motivation sustainment, (B) the development of an entrepreneurial mindset, and (C) the development of founder-related skills and competences.

A. The generation of entrepreneurial inspiration and motivation sustainment

Attending start-up events generated participants' entrepreneurial inspiration in the observed cases. During the early ecosystem development phase in Bremen, experts noticed that the events specifically imparted students of the local universities with entrepreneurship as an alternative to employment: *'Founding a business has become an actual option for one's livelihood'* (O5). In fact, reaching this situation was the precise goal of organizing the first start-up events in Bremen, which O4 and O5 clarified. Participating in start-up events inspired participants to think about developing their own entrepreneurial projects. Listening to others' business ideas and discussing current market or societal problems with other affected individuals inspires W2 to consider possible solutions and was a key reason why W2 attends start-up events: *'to find a problem, you should try to learn a lot of things on different sides...Attend events related to this'*. Attending events not only inspires one's thinking about ideas, but also encourages the execution of those ideas. A local student's

participation in ‘Startup Weekend Bremen 2017’ inspired him to continue with his business idea of a returnable coffee cup deposit system and meanwhile led to the legal foundation of his start-up business. E3’s business idea was also born through his participation in a start-up event that specifically hosted a business idea competition. These examples suggest that ‘activity-based events’ are useful not only for connection building in entrepreneurial ecosystems, as Motoyama and Watkins (2014) found, but also for entrepreneurial inspiration. Events seem to offer a platform for diverse attendees to recognize opportunities because they are enabled to ‘connect the dots’ (Baron 2006) and realize potential business ideas.

Attending events motivates (would-be) entrepreneurs to think about their own business ideas through the inspiration successful entrepreneurs offer in their event speeches (E15). E2 supported this view by exemplifying his having met Oliver Samwer and Frank Thelen at a start-up event—both of whom are well-known German start-up founders and investors—and explaining that his business idea was based on Thelen’s inspirational speech and the personal feedback Thelen offered for E2’s business idea. Talking to even less famous but long-established founders inspires attendees to learn more about the latest trends and innovative ideas (E15). A role model’s influence upon an individual’s occupational choice (Krumboltz, Mitchell, and Jones 1976) is described in previous research and is especially linked to the effect of influence on students’ entrepreneurial intentions (e.g., Krueger, Reilly, and Carsrud 2000; Van Auken, Fry, and Stephens 2006). In the entrepreneurship context, Bosma et al. (2011) identified ‘inspiration and motivation’ as a role model’s fundamental functions. According to the authors, ‘role models create awareness and motivate people to get started’ (Bosma et al. 2011, 5), which coincides with the empirical findings from the observed events.

Aside from being inspired, sustaining motivation seems to be a reason why entrepreneurs attend start-up events. When E2 was rejected from an accelerator program to which he had applied, he decided to attend a start-up event that same evening to sustain his entrepreneurial motivation: *‘The moment I got the email I was really frustrated...I was planning to go home and just be there for several hours and lock myself. But then I thought, why should I not go to this meetup...because I will meet people and talk and that was the motivation...they talk crazy and they dream big*

and they talk about conquering the world, like this guy at the event today [said] “we are shooting at the stars, but if we fall, we fall on the moon””.

Being inspired while participating in start-up events is also a source of motivational sustainment for E10, who reported that his long working hours sometimes make him question his work but that his exchanges with peers at events motivate him to continue. E9 also feels that seeing peers at events proves that he is not alone on the entrepreneurial path.

Proposition 4-A: Start-up events contribute to (would-be) entrepreneurs’ entrepreneurial inspiration and motivation sustainment through the sharing of business ideas and opportunities, the practising of entrepreneurship, and the receipt of inspiration from role models.

B. The transfer of an entrepreneurial mindset

Despite activating entrepreneurial motivation, start-up events also contribute to the transfer of an entrepreneurial mindset (E8). Event organizers actively encourage participants to share their ideas and experiences, which the field observations validate. Speakers and organizers choose topics that focus on ‘start-up spirit’ (O7) and the importance of knowledge sharing (O7), a venturesome attitude and persistence (E8), and the importance of (negative) feedback (E17). Perceiving failure as a natural step for later success is a significant dimension organizers wish to raise (O5, O6), especially since the general German society’s perspective of failure is rather negative (O5). Event formats addressing this aspect (e.g., ‘Fuckup Nights’) were created to counteract this stigma and to ‘...*understand failure as a chance*’ (O5). E2 supported this statement, claiming he is ‘...*so open to talk about my failures on a stage in front of 500 people, and I have done that before. I have noticed that on a lot of events...No matter how many times you fall, you get up*’.

Independent of whether or not would-be entrepreneurs actually become entrepreneurs in the near future, W3, who originates from Pakistan, reflected that the entrepreneurial mindset transferred during events can be supportive even if one does not

found one's business in Germany: *'I will have a mindset—okay I have done something there that I can apply even if I cannot found my company in Berlin. I will then go back and found there, but the mindset and the practice and culture I adopt here I will apply there, and I have much hope that it will work. I don't think I am going lost. I am getting something from these events.'*

The transfer of an entrepreneurial mindset via peer interactions at start-up events is similar to the explained role peers can play in one's entrepreneurial identity formation (cf. Falck, Heblich and Luedemann 2012).

Proposition 4-B: Start-up events contribute towards transferring entrepreneurial mindset attributes by addressing aspects such as openness, mutual support, and a rather positive perception towards failure.

C. The development of skills and competences

Depending upon the start-up event's format, the interviewees reported that they acquired knowledge in business topics, such as marketing (E8, E16), taxes (E8), sales management (E16), and the lean start-up approach (E2, W1, O5). Interviewees without a business background found events that focused on these topics particularly helpful, as E2 exemplified: *'Because I don't have a business knowledge, like, by education...and now is the time to learn and understand all these business-related things, like, for example, the lean start-up methodology, what is an MVP, what's a seed round, what's valuation, what's pre-money, what's post money'*. W3 reported having attended events to acquire IT knowledge in programming methodologies, for example. Aside from these topics, event organizers remembered having offered topics around teambuilding (O4), legal aspects in online shopping, data security, employee hiring, as well as PR work (O7). However, start-up event attendees' deep acquisition of practical material as well as the 'learning by doing effect' are rather limited due to time constraints.

Aside from learning new content, various interviewees highlighted improving their pitching skills. While at some events the pitching session is the central element,

other events include this practice as a side element because organizers consider presenting business ideas important for daily business life, and thus pitching during events '[reduces] nervousness' (O4). E9, E10, E11, and E13 supported this statement by reflecting that the several pitching opportunities they engaged in during events improved their pitching skills in the sense that they learned how to compress their business ideas into short stories, how to most efficiently explain key aspects, what types of questions customers and key partners ask, and how to react to certain types of questions. The feedback founders received after a pitch from either a professional jury or the regular audience led to their reflection upon their own ideas and inspired them to revise their presentations, as E11 summarized: '*...in retrospect, constructive critics lead us to reflect and...adapt the pitch for the next time. That was a constant process when one starts from the beginning. Someday one gets a routine, one can pitch much better, it's just a matter of practice*'. Aside from learning how to pitch by doing, listening to others' presentations helped the interviewees learn how to structure a pitch and which key topics to discuss (E10).

One central element of all the interviewees' previously attended start-up events was the networking aspect. Networking breaks were often integrated into the program schedules, and the event locations were often open for several hours before and after the formal program in order for participants to get in touch with one another. This opportunity allows participants to broaden their networking skills. E13 realized that, by attending start-up events, he has learned '*the ability to be open, the ability to get into conversations*'; he further specified to have mastered '*at what time one should exchange business cards*', '*what kind of questions to ask*', and how to engage in small talk (E13). E17 added that heading towards strangers to start conversations was a central facet he learned from attending start-up events. Practising networking skills at events seems to increase participants' self-confidence in repeating these interactions, thus helping them develop a customized routine (E13, E17). E2 summarized '*...it is a great place where you can practice your public speaking skills. I think that is the number one skill an entrepreneur must know: public speaking, storytelling, making an idea in a hearable way that people would love to hear*'.

While the empirical findings demonstrate that start-up events further develop attendees' relevant entrepreneurial skills, the suggestions made in previous research

should be considered when addressing this aspect. Following the indications of Audretsch, Aldridge, and Sanders (2011), distinguishing an event's participants might be fruitful for understanding the entrepreneurial learning's actual outcome through start-up event participation. Entrepreneurs dealing with a specific problem in the development of their start-up businesses might profit more from the identified educational aspect of events because they might more easily grasp relevant information than would-be entrepreneurs (cf. Audretsch, Aldridge, and Sanders 2011), the latter of whom might profit from a more broad overview of entrepreneurship processes and basic information on the entrepreneurial ecosystem. Further, Motoyama and Watkins's (2014) finding indicate that action-based events, such as start-up weekends, coding events, and practical workshops, affect attendees' knowledge creation through personal interactions to a different extent than do pitching- and purely networking-based events. Nevertheless, a start-up event's general impact on an attendee's development of entrepreneurial skills and competences is evident from the interview data.

Proposition 4-C: Start-up events help attendees develop and practise entrepreneurial skills and competences, such as business knowledge, pitching skills, and networking skills.

Conclusion

This study analysed start-up event functions in entrepreneurial ecosystems by conducting a multiple-case study that analysed data from interviews with participants and organizers of start-up events as well as from field observations in Berlin and Bremen, Germany.

Based on empirical insights and a reflection of previous research, the article has derived propositions and has suggested that start-up event functions might be their auspicious roles in entrepreneurial ecosystems (i) as attraction factors for outside human capital, (ii) as settings for community building, and as (iii) platforms for knowledge sharing that result in their being (iv) eligible settings for (further) entrepreneurial human capital development.

This study contributes to the ecosystem research by identifying start-up events as an important element of entrepreneurial ecosystems as well as comprehensively detecting and describing their functions within these ecosystems. While previous research offers promising insights into the impacts of isolated ecosystem actors or elements, the start-up event setting demonstrates clear interconnections between start-up ecosystem actors that call for the adoption of a holistic view whilst analysing entrepreneurial ecosystems (cf. Mason and Brown 2014). This study not only confirms the suggestions made by previous research that start-up events are important settings for building connections in entrepreneurial ecosystems, but also extends the existing knowledge regarding how these events contribute to regional attractiveness and human capital development. The findings regarding entrepreneurial human capital development provide a novel perspective, as the main focus of the discussion on entrepreneurial motivation in entrepreneurial ecosystems lies in the role entrepreneurial education plays, specifically in the context of universities and educational institutions (e.g., Graham 2014).

While the study offers promising new findings, it nevertheless poses some limitations. The findings are based on data from 29 interviews and observations from various start-up events. Hence, not all types of events may be considered due to the considerable variety of event formats available, which might have impeded this study's detection of further event functions. Due to the cross-case analysis, the findings are not linked with specific event types. Therefore, the data collection's context specificity and the study's qualitative nature limit the findings' generalizability. Additional empirical data from additional regions are required in order to more broadly expand the existing knowledge in this field.

This study's preliminary nature offers practical implications for policymakers and event organizers. This study has clearly demonstrated start-up event functions, one of which is displaying and spreading a region's image regarding its interest in supporting entrepreneurship and simultaneously attracting outside human capital. Having outlined unambiguous examples of ecosystem relocation decisions based on impressions upon the entrepreneurial ecosystem gained during start-up events has highlighted the practical relevance of considering these events mechanisms for an entrepreneurial ecosystem's image distribution. While an event's value in attracting

human capital and image building might differ depending upon an ecosystem's lifecycle phase (e.g., Auerswald and Dani 2017; Startup Genome 2017; Colombelli, Paolucci, and Ughetto 2019; Mack and Mayer 2016), regions lacking special talent that are willing to attract further entrepreneurs to fuel ecosystem dynamics are advised to consider start-up events in their marketing strategies. Assisting event organizers financially or by providing facilities for event hosts seems to be a comprehensible implication in this regard, and this support is relevant whilst ecosystems compete for talent (Startup Genome 2018).

Regarding event organizers, this study indicates that a program schedule's networking elements and the planned spread of entrepreneurship mindset elements seem to positively affect event attendees and should thus be fundamental elements of each event. The study also demonstrates that the language in which an event is held can create exclusiveness and thereby impede a more heterogeneous set of participants. Thus, being aware of how start-up events contribute to dynamic start-up communities, strategically investing in the provision of inclusive elements may contribute towards the achievement of these positive effects.

Having outlined several functions of start-up events in entrepreneurial ecosystems, future investigation might distinguish and systematically classify findings based on an entrepreneur typology, as suggested by Spilling (1996, 99). Audretsch, Aldridge, and Sanders (2011) as well as Greve and Salaff (2003) indicate that differences in accessing social capital at these events might be based on the phase of an idea's development and execution, which may also add to the identification of different social clusters in entrepreneurial ecosystems (Neumeier, Santos and Morris 2019). Having specified the start-up event functions in entrepreneurial ecosystems, the findings do not reveal whether all start-up events include all the detected functions or whether specific event types fill specific functions; as such, future research should specify impacts related to event types. Further, future research should also address events' potentially negative aspects, such as misguidance through over-embeddedness (Gargiulo and Benassi 1999) and the amount of time event participation requires, as such issues are not reflected by the current study's data.

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Appendix

Tables

<i>Start-up event format</i>	<i>Event description</i>
<i>Pitching competition</i>	<i>A number of teams present their business ideas within a defined amount of time in front of an audience and a jury, who provide feedback and ask each team questions. The best team is named the winner.</i>
<i>Start-up fail night</i>	<i>Entrepreneurs whose businesses failed present their stories to the audience to share knowledge regarding possible mistakes and to encourage others that failing is not necessarily the end of the entrepreneurial dream.</i>
<i>Start-up weekend</i>	<i>Teams are formed around participants' presented business ideas and work on developing a business concept within 48 hours. At the end of the event, the teams present their findings and results, during which time the best team is named the winner.</i>
<i>Meet-ups</i>	<i>Specific topics or member groups (e.g., company branches or positions) are discussed during these casual sessions to create and expand networks among peers for the purpose of exchanging experiences.</i>
<i>Start-up festivals/conferences</i>	<i>These larger occasions often last several days and include speakers on stage, workshops, leisure activities, and at times a small fair of start-ups and support organizations.</i>
<i>Prototype parties</i>	<i>Business or product prototypes are presented and tested in a casual event setting. The audience usually consists of diverse individuals (e.g., artists, product developers, businessmen, engineers) who provide feedback while testing these prototypes. The feedback and possible cooperation should help advance each prototype's developmental stage.</i>
<i>Informational events</i>	<i>An ecosystem's stakeholders typically present about their companies, their offers to the community, or specific parts of the community; these events can include accelerator programs, investors, and start-up companies.</i>

Table 1. Overview of the selected start-up events

Classification	Interviewee	Code	Business Sector	Location	Data Type
Entrepreneur	Entrepreneur 1	E1	Information Security	Berlin	Interview
	Entrepreneur 2	E2	Program & App Development	Berlin	Interview
	Entrepreneur 3	E3	Food & Beverage	Berlin	Interview
	Entrepreneur 4	E4	Communication	Berlin	Interview
	Entrepreneur 5	E5	Data Management	Berlin	Interview
	Entrepreneur 6	E6	Education	Berlin	Interview
	Entrepreneur 7	E7	Recruitment	Berlin	Interview
	Entrepreneur 8	E8	Toy sector	Bremen	Interview
	Entrepreneur 9	E9	Fashion	Bremen	Secondary interview data
	Entrepreneur 10	E10	Event & Travelmanagement	Bremen	Secondary interview data
	Entrepreneur 11	E11	Food & Beverage	Bremen	Secondary interview data
	Entrepreneur 12	E12	Creative	Bremen	Secondary interview data
	Entrepreneur 13	E13	Creative	Bremen	Secondary interview data
	Entrepreneur 14	E14	Creative	Bremen	Secondary interview data
	Entrepreneur 15	E15	Recruitment	Bremen	Secondary interview data
	Entrepreneur 16	E16	Advertising	Bremen	Secondary interview data
	Entrepreneur 17	E17	Advertising	Bremen	Secondary interview data
Would-be entrepreneur	Would-be entrepreneur 1	W1	Robotics	Berlin	Interview
	Would-be entrepreneur 2	W2	Not defined yet	Berlin	Interview
	Would-be entrepreneur 3	W3	Not defined yet	Berlin	Interview
	Would-be entrepreneur 4	W4	Automotive sector	Berlin	Interview
	Would-be entrepreneur 5	W5	Not defined yet	Bremen	Secondary interview data
Event Organizer	Event Organizer 1	O1	Start-up Events	Berlin	Interview
	Event Organizer 2	O2	Start-up Events	Berlin	Interview
	Event Organizer 3	O3	Start-up Events	Berlin	Interview
	Event Organizer 4	O4	Start-up Events	Bremen	Interview
	Event Organizer 5	O5	Start-up Events	Bremen	Interview
	Event Organizer 6	O6	Start-up Events	Bremen	Secondary interview data
	Event Organizer 7	O7	Start-up Events	Bremen	Secondary interview data

Table 2. Overview of the interviewees

Event	Date	Place
Startup Safary @ hubraum	06. May 2015	Berlin
Startup Safary @ Zalando	08. May 2015	Berlin
Startup Safary @Wire	07. May 2015	Berlin
Startup Safary @ Soulbottles	06. May 2015	Berlin
Startup Safary @ Paua Ventures	08. May 2015	Berlin
Startup Safary @Abend.net	06. May 2015	Berlin
SuS@ Rainmaking Loft	06. May 2015	Berlin
Valley in Berlin	10. March 2016	Berlin
Hubraum: Funding strategy for early stage companies, basics you need to know as founder	28. April 2016	Berlin
KIC Europe: K-Startup Challenge 2016	28. April 2016	Berlin
Axel Springer Plug and Play: Globally connected, mentorship-driven and always hands-on: come experience the Berlin-based startup accelerator	28. April 2016	Berlin
Teambay: The 9 Steps for Building a Great Founding Team	28. April 2016	Berlin
Paymentwall: New Office Party	28. April 2016	Berlin
Climate KIC	29. April 2016	Berlin
Smunch	29. April 2016	Berlin
Techstars: Ping Pong, Coffee and Info Session with Techstars	29. April 2016	Berlin
Holtzbrinck Ventures	29. April 2016	Berlin
Startup Safary Berlin Closing Party	29. April 2016	Berlin
Open Pitch Night	22. September 2016	Bremen
Open Pitch Night no. 2	22. November 2016	Bremen
Startup Bremen10.0 - geschüttelt, nicht gerührt. #GNGX	02. June 2017	Bremen
Get Started Policy Pitch	29. June 2017	Berlin
HARDWARE.co Batch #6 Show & Tell - Quality of Life	31. July 2017	Berlin
BETABREAKFAST	27. July 2017	Berlin
G-Force: Put Your Idea under Pressure before others do it!	31. July 2017	Berlin
Silicon Allee Monthly Meet Up @ R/D	01. August 2017	Berlin
How to Raise Money from VCs	02. August 2017	Berlin
SheLovesTech Germany	03. August 2017	Berlin
GNGX Startup Festival	10. November 2017	Bremen
Startup Pitch Night Bremen	12. April 2018	Bremen
Startup Pitch Night Bremen	03. May 2018	Bremen
Open Pitch Night No. 6	22. May 2018	Bremen
Startup Pitch Night Bremen	12. June 2018	Bremen
START INN 2018	04. July 2018	Bremen
CO-FOUND Berlin: Summer Event	22. August 2018	Berlin
Moin Startup Camp	07. - 08- March 2019	Bremen
Startup Fail Night	21. February 2019	Bremen

Table 3. Overview of the attended start-up events

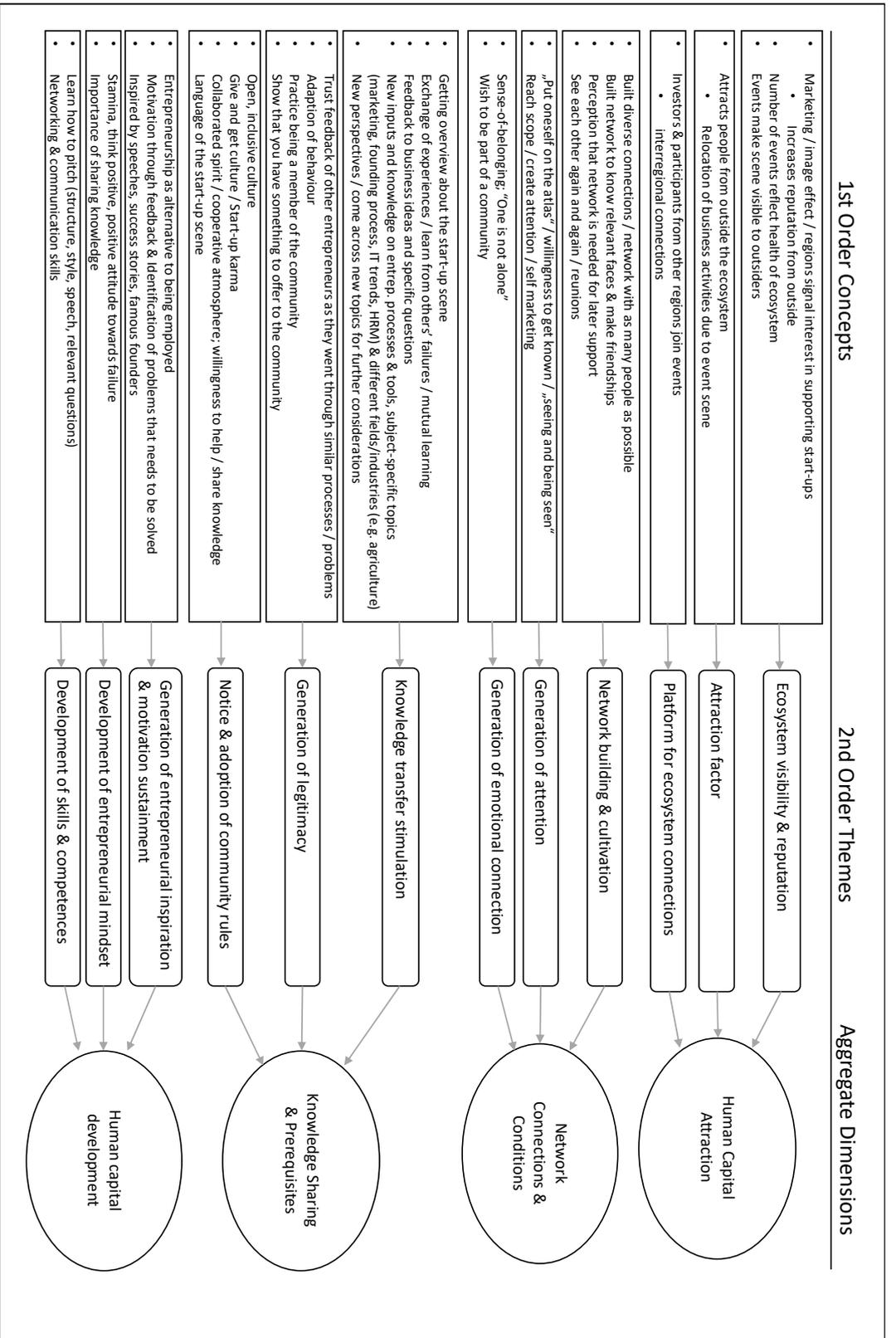


Figure 1. Coding process following the visual suggestion by Gioia, Corley, and Hamilton (2012)

Article 3:

Is this transnational entrepreneurship? Five cases in which it is hard to say ‘Yes’ or ‘No’

Aki Harima (University of Bremen)
Thomas Baron (University of Bremen)

*Published in Journal of Entrepreneurship and Innovation in Emerging Economies,
Vol. 6 (1), 12 – 40. DOI: <https://doi.org/10.1177/2393957519887561>*

Abstract

Scholars have lately started using the notion of ‘transnational entrepreneurship’. However, transnational entrepreneurship has not achieved the status of an independent research field in the literature yet. Scholars and policymakers do not seem to have managed to address the clear-cut, distinctive nature of transnational entrepreneurship due to its conceptual ambiguity. This challenge calls for thoughtful consideration of the scope and range of the transnational entrepreneurship concept. Consequently, this study aims at critically reviewing the recent literature on transnational entrepreneurship in contrast to migrants’ entrepreneurial activities and international entrepreneurship to identify the current scholars’ underlying assumptions about this phenomenon and challenges them by demonstrating its heterogeneity with the presentation of five empirical cases. In these five cases, entrepreneurs conduct business in which transnationalism plays a certain role, yet differently. We contrast the presented cases with the four assumptions about transnational entrepreneurs identified from literature: (1) frequent travels between home and host countries, (2) simultaneous entrepreneurial engagement in two countries, (3) deep dual-embeddedness in home and host institutional environments, and (4) highly educated migrants. Based on the discussion, we develop a set of research propositions regarding the characteristics of transnational entrepreneurs, which are not fully considered in literature. By demonstrating the heterogeneity of transnational entrepreneurship and by showing future research orientations, we contribute to the literature on transnational entrepreneurship.

Keywords: transnational entrepreneurship, immigrant entrepreneurship, international entrepreneurship, circular migration, transnationalism, diaspora

Article 4:

**The Role of Diaspora Entrepreneurs in Start-up Ecosystem Development
– A Berlin Case Study**

Thomas Baron (University of Bremen)
Aki Harima (University of Bremen)

Published in International Journal of Entrepreneurship and Small Business,
Vol. 36 (1-2), 74–102; DOI: <https://doi.org/10.1504/IJESB.2019.096968>

Abstract

Start-up Ecosystem has reached great attention in the recent research. Understanding how dynamic ecosystems develop has become of major interest for policy makers due to a potential regional economic well-being. In this study, we explore how the uniqueness of diaspora entrepreneurs may contribute to the development of a successful start-up ecosystem. Based on a case study conducted in Berlin, we analyse the role of diaspora entrepreneurs in ecosystem development with a conceptual framework developed from Austrian Capital Theory. The empirical findings show diasporans are an auspicious co-creator for Berlin's ecosystem development as they enrich the supportive environment with diverse resources that local entrepreneurs cannot provide. We found that diasporans in Berlin reinforce ecosystem's capitals and act as important 'interweavers' of such capitals to the unique and successful structure of Berlin's start-up ecosystem.

Keywords: Start-up Ecosystem, Berlin, Diaspora Entrepreneurship, bi-focality, mixed embeddedness.

Part 3: Appendix

Appendix 1: Article Overview & Declaration of Co-Authorship

Article 1

Type	Journal Article (Blind Peer-Review)
Title	Blueprint Silicon Valley? Explaining Idiosyncrasy of Startup Ecosystems
Authors	Thomas Baron (University of Bremen) Jörg Freiling (University of Bremen)
Place of Publication	Problemy Zarzadzania – Management Issues, Vol. 17, no 1 (81): 57–76.
Date of Submission	13.08.2018
Date of Acceptance	10.12.2018
Date of Publication	21.03.2019
Author Contributions	Baron: 75%, Freiling: 25%
Contribution of Thomas Baron in detail	<ul style="list-style-type: none"> • Literature review on entrepreneurial ecosystems • Application of isolating mechanisms to the discussion of entrepreneurial ecosystem idiosyncrasy • Development of research propositions • Manuscript writing • Revising the manuscript based on reviewer's comments

Article 2

Type	Journal Article (Blind Peer-Review)
Title	Attraction, connection, and qualification: The functions of start-up events in entrepreneurial ecosystems
Authors	Thomas Baron (University of Bremen)
Place of Submission	Thunderbird International Business Review
Date of Submission	16.12.2019
Date of Acceptance	-
Date of Publication	-
Author Contributions	Baron: 100 %

Article 3

Type	Journal Article (Blind Peer-Review)
Title	Is this transnational entrepreneurship? Five cases in which it is hard to say 'Yes' or 'No'
Authors	Aki Harima (University of Bremen) Thomas Baron (University of Bremen)
Place of Publication	Journal of Entrepreneurship and Innovation in Emerging Economies
Date of Submission	22.12.2018
Date of Acceptance	23.09.2019
Date of Publication	-
Author Contributions	Harima: 60 %, Baron 40%
Contribution of Thomas Baron in detail	<ul style="list-style-type: none"> • Data collection on two cases • Data analysis • Contribution to text development (introduction, case description, discussion) • Revising the manuscript based on reviewers' comments

Article 4

Type	Journal Article (Blind Peer-Review)
Title	The role of diaspora entrepreneurs in start-up ecosystem development – A Berlin case study
Authors	Thomas Baron (University of Bremen) Aki Harima (University of Bremen)
Place of Publication	International Journal of Entrepreneurship and Small Business, Vol., 36, no. 1-2: 74–102.
Date of Submission	30.06.2016
Date of Acceptance	10.04.2017
Date of Publication	14.12.2018
Author Contributions	Baron: 80 %, Harima 20%
Contribution of Thomas Baron in detail	<ul style="list-style-type: none"> • Initial idea development • Literature review • Data collection • Data analysis • Manuscript writing • Revising the manuscript based on reviewers' comments.

Blueprint Silicon Valley? Explaining Idiosyncrasy of Startup Ecosystems

Submitted: 13.08.18 | Accepted: 10.12.18

Thomas Baron*, Jörg Freiling**

The concept of startup ecosystems has received significant attention from policy makers, particularly in the hope of transferring Silicon Valley performance effects to their own region. Previous research emphasizes the need to consider the unique and distinctive nature of the specific regional ecosystem in focus when developing policies for ecosystem development without a thorough specification and theoretically founded explanations. In this article, we address this gap and develop propositions why each ecosystem is unique in nature by employing resource-based reasoning. The article concludes that ecosystems are highly idiosyncratic and are, therefore, inimitable and non-transferable to other regions due to working isolating mechanisms.

Keywords: startup ecosystem, idiosyncrasy, resource-based approaches.

Modelowa Dolina Krzemowa? Wyjaśnienie idiosynkrazji ekosystemów startupów

Nadesłany: 13.08.18 | Zaakceptowany do druku: 10.12.18

Koncepcja ekosystemów startupów spotkała się z dużym zainteresowaniem decydentów, którzy mieli nadzieję na przeniesienie efektów działania Doliny Krzemowej do własnego regionu. We wcześniejszych badaniach podkreślano potrzebę uwzględnienia wyjątkowego i wyróżniającego charakteru ekosystemu regionalnego przy opracowywaniu polityk, nie przedstawiając jednak dokładnej charakterystyki i wyjaśnień opartych na teorii. W tym artykule zajęto się tą luką i opracowano propozycje wyjaśnienia unikalnego charakteru każdego ekosystemu przy zastosowaniu rozumowania opartego na podejściu zasobowym. Artykuł zakończono stwierdzeniem, że ekosystemy posiadają wysoce idiosynkratyczny charakter i dlatego są niepowtarzalne i nieprzenoszalne do innych regionów z powodu działania mechanizmów izolujących.

Słowa kluczowe: ekosystem startupu, idiosynkrazja, podejścia oparte na zasobach.

JEL: D830, D850, L140, L260, O180, R110

* **Thomas Baron** – MSc, Chair in Small Business and Entrepreneurship (LEMEX), University of Bremen. <https://orcid.org/0000-0001-9276-9586>.

** **Jörg Freiling** – Full Professor, PhD, Chair in Small Business and Entrepreneurship (LEMEX), University of Bremen. <https://orcid.org/0000-0001-6922-9805>.

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Article 2

Submission Confirmation



Thank you for your submission

Submitted to

Thunderbird International Business Review

Manuscript ID

TIBR-19-187

Title

Attraction, connection, and qualification: The functions of start-up events in entrepreneurial ecosystems

Authors

Baron, Thomas

Date Submitted

16-Dec-2019

Von: SAGE peer review <Noreply,Peerreview@sagepub.com>

Gesendet: Montag, 23. September 2019 12:52

An: harima@uni-bremen.de

Betreff: Journal of Entrepreneurship and Innovation in Emerging Economies - EIE-2018-0136.RV2: Decision on your manuscript -

23-Sep-2019

Dear Dr. Aki Harima,

Thank you for submitting your manuscript, EIE-2018-0136.RV2 titled Is this transnational entrepreneurship? Five cases in which it is hard to say 'Yes' or 'No'.

I have now had the opportunity to review your manuscript along with the reviewers' comments. I am pleased to state that I find your submission acceptable for publication in the Journal of Entrepreneurship and Innovation in Emerging Economies. Let me congratulate you on a job well done and thank you for enabling the journal to showcase your work. Good articles are essential for the further development of journal. The reviewer comments appear at the end of the e-mail.

Your manuscript will be scheduled for publication in a future issue.

You will soon receive a separate notification with instructions for accessing and completing the contributor form.

Thank you again for your continuing interest in Journal of Entrepreneurship and Innovation in Emerging Economies.

Yours sincerely,

Jayanta Mitra

Editor-in-Chief

Journal of Entrepreneurship and Innovation in Emerging Economies

jaymitrauniverse@hotmail.com

Article 3

The role of diaspora entrepreneurs in start-up ecosystem development – a Berlin case study

Thomas Baron* and Aki Harima

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Abstract: Start-up ecosystem has reached great attention in the recent research. Understanding how dynamic ecosystems develop has become of major interest for policy makers due to a potential regional economic well-being. In this study, we explore how the uniqueness of diaspora entrepreneurs may contribute to the development of a successful start-up ecosystem. Based on a case study conducted in Berlin, we analyse the role of diaspora entrepreneurs in ecosystem development with a conceptual framework developed from Austrian capital theory. The empirical findings show that diasporans are an auspicious co-creator for Berlin's ecosystem development as they enrich the supportive environment with diverse resources that local entrepreneurs cannot provide. We found that diasporans in Berlin reinforce the ecosystem's capitals and act as important 'interweavers' of such capitals to the unique and successful structure of Berlin's start-up ecosystem.

Keywords: start-up ecosystem; Berlin; diaspora entrepreneurship; bi-focality; mixed embeddedness.

Reference to this paper should be made as follows: Baron, T. and Harima, A. (2019) 'The role of diaspora entrepreneurs in start-up ecosystem development – a Berlin case study', *Int. J. Entrepreneurship and Small Business*, Vol. 36, Nos. 1/2, pp.74–102.

Biographical notes: Thomas Baron is a Research Assistant and PhD candidate at the Chair of Small Business and Entrepreneurship (LEMEX) of the University of Bremen, Germany.

Aki Harima is a Postdoctoral Research Fellow at the Chair of Small Business and Entrepreneurship (LEMEX) of the University of Bremen, Germany. Her research interests lie primarily in the areas of transnational entrepreneurship, refugee and migrant entrepreneurship, accelerators and incubators as well as start-up ecosystems. She is one of the main initiators and organisers of the migration and diaspora entrepreneurship (MDE) international conferences.

Appendix 2: Academic Contributions

1. Publication Activities

Journal articles

- Baron, T. (under review). Attraction, Connection & Qualification – The Functions of Start-up Events in Entrepreneurial Ecosystems. Submitted to *Thunderbird International Business Review*, Special Issue ‘Entrepreneurial Ecosystems’, (Submission date: 16. December 2019).
- Harima, A., & Baron, T. (forthcoming). Is this transnational entrepreneurship? Five cases in which it is hard to say ‘Yes’ or ‘No’. Accepted for publication in: *Journal of Entrepreneurship and Innovation in Emerging Economies*.
- Baron, T. & Freiling, J. (2019). Blueprint Silicon Valley? Explaining Idiosyncrasy of Startup Ecosystems. *Problemy zarządzania - Management Issues*, 1(81), 65-84.
- Baron, T., & Harima, A. (2019). The role of diaspora entrepreneurs in start-up ecosystem development - a Berlin case study. *International Journal of Entrepreneurship and Small Business*, 36(1-2), 74-102.

Book/Book chapter

- Freiling, J. & Baron, T. (2017). A Resource-based View of Entrepreneurial Ecosystems, in Burr, W. & Stephan, M. (Eds.) *Technologie, Strategie und Organisation*, 65-84. Wiesbaden: Springer Gabler.
- Baron, T. (2017). *The Impact of Diaspora Ventures on the Dynamics of the Start-up Ecosystem Berlin*. Wiesbaden: Springer Gabler.

2. Conference Participation

- Baron, T., and Freiling, J., Blueprint Silicon Valley? – Explaining Idiosyncrasy of Startup Ecosystems, V. International Scientific Conference on Entrepreneurship for the XXI Century, 15.11. – 16.11.2018, Warsaw, Poland.
- OECD Workshop on Transnational Entrepreneurship, 03.09.2018, Paris, France.
- Baron, T., and Freiling, J., Startup Ecosystem Dynamics – Isomorphism vs. Idiosyncrasy?, 63rd International Council for Small Business (ICSB) World Congress, 24.06. – 29.06.2018, Taipei, Taiwan.

- Baron, T., Enabling Softlanding in Startup Ecosystems? - The Role of Startup Events for Migrant Entrepreneurs, 3. International Conference on Migration and Diaspora Entrepreneurship, 30.11. - 01.12.2017, Bremen, Germany.
- Baron, T., The Role of Startup Events for Social Capital Development in the Berlin Startup Ecosystem, Workshop on Urban Startup Ecosystems, 18.07. – 19.07.2017, Bremen, Germany.
- Freiling J., Baron, T., Juling, J. & Harima, A., Understanding Urban Startup Ecosystem as a Capital Structure, Augsburg Conference on the 'Economic, Technological and Societal Impacts of Entrepreneurial Ecosystems', 15.03. – 17.03.2017, Augsburg, Germany.
- Baron, T., With and without Migration Entrepreneurs: What glues Actors within Start-up Ecosystems?, International Conference on Migration and Diaspora Entrepreneurship 2016, 28.11 – 29.11.2016, Bremen, Germany.
- Baron, T., Harima, A., & Freiling, J., Migrant and Diaspora Entrepreneurs as Source for Dynamic Creation in Berlin's Entrepreneurial Ecosystem, MDE2015, 14.12 – 15.12.2015, Bremen, Germany.

3. Awards

- Best Paper Award, 5th International Conference on Entrepreneurship for the XXI Century. Images and Perspectives, 15.11. – 16.11.2018, Warsaw, Poland.
- Wiwib Studienpreis für Mittelstandsforschung 2016/2017, 1. Platz, Bremen, Germany.

4. Reviewer Activity

- *Entrepreneurship & Regional Development* – Special Issue: Dynamics of Entrepreneurial Ecosystems (April 2019).

5. Workshop Organisation

- Workshop on Urban Start-up Ecosystems, 19.07.2017, Bremen, Germany.

Appendix 3: Interviews

Overview Interview Data & Usage per Article

Data Overview					Source	Article			
No.	Type	COO	Location	Business Sector	1	1	2	3	4
1	E1	Afghanistan	Berlin	Program & App Development	1		x	x	
2	E2	Egypt	Berlin	Information Security	1		x		
3	E3	Philippines	Berlin	Food & Beverage	1		x		
4	E3	Philippines	Bremen	Food & Beverage	1		x		
5	E4	Croatia	Berlin	Communication	1		x	x	x
6	E5	Syria	Berlin	Data Management	1		x		x
7	E6	Australia	Berlin	Education	1		x		x
8	E7	Norway	Berlin	Recruitment	1		x		x
9	E8	Germany	Bremen	Toy Sector	1		x		
10	E9	Germany	Bremen	Creative	2		x		
11	E10	Germany	Bremen	Creative	2		x		
12	E11	Germany	Bremen	Recruitment	2		x		
13	E12	Germany	Bremen	Advertising	2		x		
14	E13	Germany	Bremen	Advertising	2		x		
15	E14	Bulgaria	Bremen	Fashion	2		x		
16	E15	Germany	Bremen	Event & Travel Management	2		x		
17	E16	Germany	Bremen	Food & Beverage	2		x		
18	E17	Germany	Bremen	Creative	2		x		
19	E18	Japan	Philippines	Education, HR, Manufacturing, Healthcare	2				x
20	E19	Japan	Guatemala	Education	2				x
21	E20	Tajikistan	(Russia)	Car Repairment	2				x
22	W1	Germany	Berlin	Robotics	1		x		
23	W2	Algeria	Berlin	not defined yet	1		x		
24	W3	Pakistan	Berlin	not defined yet	1		x		
25	W4	India	Berlin	Automotive	1		x		
26	W5	Turkey	Bremen	not defined yet	1		x		
27	EXP1/EO5	Germany	Berlin	Investor & Event Organizer	1		x		x
28	EXP2/EO6	Germany	Berlin	Accelerator & Event Organizer	1		x		x
29	EXP3/EO7	Germany	Berlin	Fashion & Event Organizer	1		x		x
30	EXP4	Germany	Berlin	Banker	1				x
31	EO1	Germany	Bremen	Event Organizer	1		x		
32	EO2	Germany	Bremen	Event Organizer	1		x		
33	EO3	Germany	Bremen	Event Organizer	2		x		
34	EO4	Germany	Bremen	Event Organizer	2		x		
35	EO1	Germany	Bremen	Event Organizer	2		x		

E = Entrepreneur, W= Would-be Entrepreneur, EXP = Expert,
EO = Event Organizer, 1 = primary data, 2 = secondary data.

Interview Guidelines

The Role of Startup Events in Entrepreneurial Ecosystems

Interview Guide – Participants of Events

Introduction

- Thank interview partner for time and interview
- Self-introduction
- Brief explanation of purpose of the interview
- Question for permission to record interview
- Promise to treat data confidentially
- Duration of interview ca. 45-60 Minutes
- Language: English or German

- 1. Could you please introduce yourself? Who are you and what are you doing?**
 - How did you come up with this idea? Who inspired you?
 - How far are you in the process of founding?
 - Founding experience/ startup experience
- 2. Why did you found your company in Berlin?**
 - Which were the criteria for choosing the city?
- 3. How/where did you learn the needed skills and knowledge to found your current company?**
 - Do you have supporters and if so, what kind of people are this and how do they support you?
- 4. Why do you go to start-up events?**
 - What are the aims of attending start-up events?
 - Was the event helpful for you? Aims fulfilled?
 - Was it a German or English-speaking event?
 - Who is going to the events?
- 5. With whom did you get in contact at the events? (entrepreneurs, investors, ...)**
- 6. What were the topics you were talking about with people at the events?**
 - Did you get support?
 - Do you support people you get to know at the events?
 - How are you supporting?
 - Why do you do this?
 - Is the knowledge you can provide different from the knowledge the German participants have?
 - Sharing resources, contacts etc...?
- 7. What did you like at the events & what could be improved?**

If there is time left

- Advantage/disadvantage of being a diaspora
- What is the role of diaspora organizations in Berlin?
- What has the Silicon Valley reached that Berlin needs to reach?
- Have you already been in other ecosystems? (ecosystem hopper)
 - Why did you choose the location in contrast to other ecosystems?
- Where are your markets?
- Which resources do you use (diaspora resources)?

Interview Guide – Event Organizer

Introduction

- Thank interview partner for time and interview
- Self-introduction
- Brief explanation of purpose of the interview
- Question for permission to record interview
- Promise to treat data confidentially
- Duration of interview ca. 45-60 Minutes
- Language: English or German

- 1. Who are you and what is your company doing?**
- 2. Which events are you organizing?**
 - o Please explain a little more about the content and schedule of these events
 - o How many participants show up in these events?
 - o How often do these events take place?
 - o Where do these events take place?
 - o What is the language of the event? Why this language?
- 3. Why do you organize these events?**
- 4. Who are the participants?**
 - o (Internationals, Germans? founders, would-be entrepreneurs, investors, consultants, students, managers of corporations etc...)
- 5. Why do these participants participate in the events?**
 - o Mutual support/ Knowledge sharing?
 - o How are they supporting each other?
 - o What kind of resources get shared? (If)
 - o Why do they do this?
- 6. What is the feedback of the participants: Was your event helpful for them?**
- 7. Which role do events play for the ecosystem?**
- 8. What is the role of international/migrant founders in events?**

Role of Diaspora Entrepreneurs in Entrepreneurial Ecosystems

Interview Guide – Diaspora Entrepreneurs

Introduction

- Thank interview partner for time and interview
- Self-introduction
- Brief explanation of purpose of the interview
- Question for permission to record interview
- Promise to treat data confidentially
- Duration of interview ca. 45-60 Minutes
- Language: English or German

1. Could you please introduce yourself? Who are you?

- o Person (Diaspora heritage)
- o Nationality
- o Where do you live now (most of the time?)
- o Relation to the COO (family, friends, regular visiting)

2. Please summarize the steps from reason for migration, your former experiences & jobs to the reason for becoming an entrepreneur (Profession & experiences)

- o Experience, former jobs
- o Reason for becoming an entrepreneur
- o Co-founders: Why did you found with them & Nationality?
- o Reason for migration (to start a company), Why not in COO?

3. Company: Please describe your company.

- o What is your company doing?
- o How many employees do you have?
 - o From which nationalities are these employees?
 - o Have you recruited employees from your country of origin through diaspora networks?
- o Who are your customers? Global, Germany, regional or COO?
- o Cooperation with other start-ups or organizations in the ecosystem?

4. Please summarize the story of your business idea, the founding process. What is the story behind the business idea?

- o When did you found the company?
- o In which phase is your company now? Startup-phase, seed-phase etc.
- o How did you finance your business?

5. Did you get support from the ecosystem in Berlin in your founding process?

- o From whom?
 - o Country men
 - o German
 - o Mentors, Advisors etc.
- o Role of networks
 - o Diaspora Networks?
- o What kind of help?
 - o Role of resource, knowledge sharing?

6. Ecosystem Berlin: Why did you choose Berlin as location of your company?

- o Why have you chosen Berlin as a location of your company?
- o What do you like about the Berlin ecosystems?

- What are bad components of the Berlin ecosystem?
- Influence of other Diasporas in the decision for Berlin?
- Influence of success stories? (What kind of success stories?)
- Already worked/founded in other ecosystems – what makes Berlin special or different?

7. Ecosystem Dynamics

- **Why is Berlin so successful in terms of start-ups? What is happening here? Which are the aspects that create this dynamics?**
- **What is the role of diaspora entrepreneurs in this dynamics?**
 - Relationships
 - Mutual support
 - Difference between Germans and people from same background?
 - Culture
 - Supports

8. Overarching Question: What is the impact of Diaspora Entrepreneurs on the Dynamic of the startup ecosystem Berlin?

Do you know others who are integrated in Berlin ecosystem, I can conduct an interview with?

Appendix 4: Selbstständigkeitserklärung

Hiermit erkläre ich, dass ich die vorliegende Arbeit ohne unerlaubte Hilfe angefertigt habe. Es wurden keine anderen als die angegebenen Quellen und Hilfsmittel benutzt. Die den benutzen Werken wörtlich oder inhaltlich entnommenen Stellen wurden als solche kenntlich gemacht. Eine Überprüfung der Dissertation mit qualifizierter Software im Rahmen der Untersuchung von Plagiatsvorwürfen ist gestattet.

Bremen, 06.01.2020

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(Thomas Baron)