

Distrust As a Challenge of Nascent Entrepreneurial Ecosystems Creation

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Abstract

Relying on Network- and Social Capital theory, I analyzed how distrust affects the structure of nascent Entrepreneurial Ecosystems in the nascent Entrepreneurial Ecosystem in Panama City. Based on previous research, I propose that entrepreneurial support organizations inherit a crucial role during the early stages of EEs. By intermediating between otherwise unconnected nodes, creating a shared identity, and decreasing distrust between these actors, they contribute to the creation of a dense, innovative community-led by themselves. In this community, knowledge flows more easily. As the entrepreneurial support organization is respected and trusted by most other actors of the ecosystem, the system naturally builds around this anchor organization. This way, distrust among other actors can decrease through the intermediation efforts of the anchor organizations. This allows for a decentralization of the system, building new sub-communities around other actors. I further provide empirical evidence drawing on qualitative interviews and network analysis based on Twitter data supporting my theoretical thoughts.

Keywords: Emerging Economies, Innovation, Networks, Structural Holes, Twitter

Introduction

Practitioners in nascent Entrepreneurial Ecosystems (EEs) often focus on the creation of entrepreneurs and support institutions (Kantis and Federico, 2020), even though the structure and the interactions, as well as the entrepreneurial culture within these systems, are as important as its actors (Spigel, 2017). Colombelli *et al.* (2019) observe a difference in terms of the degree of decentralization between nascent and mature EEs, while Farrell (2004) states that decentralization is related to a reduction of distrust. Thus, I ask:

How does distrust affect the structure of nascent Entrepreneurial Ecosystems?

Therefore, I conducted an in-depth case study of the nascent EE in Panama City. This qualitative approach is a good choice at this point because Latin American countries tend to be characterized by a high level of distrust in governments and individuals if those are not among their friends or families (Mattes and Moreno, 2018). Further, at least to my knowledge, there is no previous empirical work on distrust and structural characteristics of nascent EEs. Thus, only little data to build on exists. Further, the first interviews revealed that the ecosystem is characterized by distrust, often expressed by contracts formalizing knowledge and information exchange that impede knowledge sharing and successful cooperation between the actors. This papers' data sample consists of 25 semi-structured interviews conducted between October and December 2020.

Drawing on relevant literature (Colombelli *et al.*, 2019) and following a network theory of social capital (Lin, 2017), I argue that organizations with greater trustworthiness are more likely to be a frequent exchange partner for other actors in the network. Thus, a nascent EE is centralized around trusted anchor organizations such as support organizations (e.g. private incubators and accelerators). This centralization represents an important mechanism that decreases distrust. Intermediating between otherwise unconnected actors helps to facilitate collaborations and decreases distrust by labeling the parties as trustworthy, thus increasing the individual actors' access to social capital.

As every entity, innovative support organizations can only manage a limited amount of strong, outgoing links and thus are not able to support every startup that would like to cooperate with it. As those ties are established mostly through incubation- or acceleration programs, they tend to establish strict entry conditions, mostly related to an evaluation of the startups' expected performance. If the cooperation with the selected startups creates a sufficiently good reputation, this leads to increased trustworthiness of both the organization and the involved startups. Having established innovation as a core value during the incubatees' selection process, the anchor organization continues to get the attention of actors that are linked to and identify with innovation. Therefore, I argue a new community arises, which decouples from other entrepreneurial communities such as those built around necessity entrepreneurship. This way they connect startups as well as both governmental and private actors offering activities directed to innovative entrepreneurship. According to Spigel (2017), EEs are inherently intertwined with innovation, and the newly created community, therefore, is the heart of the EE.

As this community is built around an anchor organization, it inherits a leading role in the development of the EE. However, I suggest in line with Colombelli *et al.* (2019) that other EE actors should be encouraged to participate in the leadership. Having a say within the community, they are less likely to distrust the system and therefore, the other actors involved in it.

Finally, I propose that distrust is an antecedent of EE-Centralization in nascent EEs. Actors notice that they need spaces and networks of reduced distrust, where both information- and knowledge exchange takes place. However, entering these spaces requires the perceived trustworthiness of the organization offering them, which is favored by success stories and financial stability. Thus, there are only a few actors are sufficiently wealthy and trustworthy to create these spaces. Therefore, a centralization around these organizations takes place and is an important mechanism to decrease distrust, which paves the way towards the relational governance of mature EEs. However, if the anchor organization does not enable shared leadership, the ecosystem might be stuck in the centralization without passing to the typical decentralized and informal structure of successful EEs.

Additionally, to the conducted interviews, I modeled the EEs' structure based on (1) ecosystem members' self-reports on their most frequent interaction partners, and (2) interactions between relevant parties on Twitter to analyze the ecosystem and find empirical evidence for my theoretical thoughts. A first insight was that both interviews and network models revealed that the EE is built around one anchor organization offering incubation services as well as a coworking space.

Secondly, startups, as well as organizations that are part of the EE experience dynamics where collaboration is facilitated and distrust, is decreased due to the shared link with the anchor

organization. Accordingly, the data show that the anchor organization assumes a leadership role within the EE. Further, the data indicate that empowered startups are less likely to distrust other actors. Finally, EE-Centralization seems to represent a coping mechanism to handle distrust.

The theoretical propositions developed in this paper contribute to the literature on nascent EEs. Previous literature concluded already that distrust impedes creating vital connections among EE members (Alvedalen and Boschma, 2017). In proposing that the level of distrust is an essential difference between mature and nascent EEs and antecedes centralization, this work contributes to a more holistic picture of EEs. A better understanding of how distrust influences the system thus contributes to the further development of the EE paradigm and helps practitioners and ecosystem builders to respond.

Based on the present case study, private support organizations are in a privileged position, where they can bridge structural holes between different actors from both the public and the private side and thus intermediate between them. Therefore, they have the power to steer the EE and accelerate its development. This effect might be catalyzed by financial support from public actors. Practical implications of this work include that support organizations should be always willing and prepared to listen to other actors and concede power to them in order to let the EE flourish.

Entrepreneurial Ecosystems (EEs)

Research on EEs draws on literature that includes work on clusters (Delgado *et al.*, 2010) and innovation systems (Cooke *et al.*, 1997). However, EEs differ from traditional clusters and innovation systems because of their unique focus on entrepreneurial opportunity, discovery, and pursuit (Autio *et al.*, 2019). As Spigel (2017) states, they are combinations of social, political, economic, and cultural elements within a region that support the development and growth of innovative startups and encourage nascent entrepreneurs and other actors to take the risks of starting, funding, and otherwise assisting high-risk ventures. This focus on innovation is common, because innovative behavior is a productive contribution from entrepreneurs, influencing the economy in several ways such as facilitating producing goods and services and is related to the discovery of new attributes, opportunities, procedures, which “contributes directly or indirectly to the net output of the economy or to the capacity to produce additional output” (Baumol, 1996). Therefore, innovation is an important part of the successful component of successful EEs but surely does not reflect all the productive entrepreneurship within the system. However, when it comes to entrepreneurship, the act of founding successful businesses often is related to innovative ideas and behaviors. Therefore, the focus in this paper lies on systems that facilitate innovative behaviors and thus entrepreneurship. That does not mean that less innovative firms are not part of the EE, as long as they contribute to enabling innovative, productive entrepreneurship. Thus, I apply the following definition of EEs:

EEs are defined as interdependent actors and factors coordinated to enable innovative productive entrepreneurship within a particular region or territory (Spigel, 2017; Stam, 2015).

Past EE research mainly focused on high-growth startups and scale-ups, as those are considered responsible for new job creation and regional economic growth (Mason and Brown, 2014).

However, the fact that high-growth startups are rare in early-stage EEs, and unicorns even rarer, led to the impression that they might be overfocused (Aldrich and Ruef, 2018).

Thus, instead of focusing on the number of certain elements of the ecosystem (e.g. high-growth startups), one might focus on the interrelations between them, as the importance of ecosystem elements varies depending on the overall state of the ecosystem (Brown and Mason, 2017; Mack and Mayer, 2016; Wurth *et al.*, 2021). Doing so, Colombelli *et al.* (2019) noticed higher centralization and lower levels of relational governance in nascent EEs and thus contradict the widespread point of view that EEs are generally characterized by relational governance mechanisms, a lack of hierarchical structures as well as clear expressions of expectancies, responsibilities, and objectives (Spigel, 2017). In the first place, this impression is, at least partly, a consequence of an overfocus on successful EEs, which leaves behind the less developed ones (Spigel and Harrison, 2018). However, nascent ecosystems have an important role in economic development, which has also been recognized by scholars recently (Roundy, 2017), and, thus understanding the differences between nascent and mature EEs is necessary in order to understand how successful EEs arise. Studies on barriers to local, nascent ecosystem development (Cao and Shi, 2021), identified governments' suspicion of the private sector (Amankwah-Amoah *et al.*, 2018) as well as structural problems decreasing the effectiveness of business incubators in emerging ecosystems such as small grants and the lack of monitoring of the same (Alon and Godinho, 2016; Inácio Junior *et al.*, 2016) as main problems. While small grants surely are related to the unavailability of high amounts of financial resources in nascent EEs in emerging economies, high levels of monitoring and suspicion between parties are an expression of distrust between EE actors. Distrust refers to a "confident negative expectation regarding another's conduct" (Lewicki *et al.*, 1998)

Networks And Social Capital

As the different actors of a system are or are usually connected to a certain degree, networks are part of all types of ecosystems (Aarikka-Stenroos and Ritala, 2017), which is why a network approach is an apt choice in order to analyze EEs. In this course, several authors attest to the importance of the social networks among the multiple actors within EEs. Further, they state, these networks should be based on trust and cooperation developed through strongly interconnected ties (Muldoon *et al.*, 2018; Spigel, 2017). However, it is not only the quality of interactions within the networks but also the structure of the network itself that influences network dynamics. For example, a dense network structure might provide relative advantages concerning resource preservation and reproduction. On the other side, for searching and obtaining new resources such as it is often necessary for innovative activity, open and less dense networks might be of help (Bourdieu, 2011). However, open and less dense networks do somehow often show patterns of fragmentation, meaning that parts of the network are only loosely connected with each other. A structural hole exists when there is no connection at all between them. This means that actors in one fragment are not in contact with another fragment unless there is an actor that connects both of them. These actors are often called "brokers" (Burt, 2004). They are in a position of relative advantage, as they have access to both fragments and both fragments depend until a certain level on them. The resources embedded within these fragments and their relationships between the different actors are an important part of "Social Capital".

Stam *et al.* (2014) define social capital as the "resources embedded in entrepreneurs' personal networks" (p. 152). However, as there are also other actors than entrepreneurs, this paper defines social capital as the "*resources embedded in actors' personal networks*". Thus, actors

that connect otherwise unconnected groups of nodes have access to higher social capital which facilitates accessing valuable resources. However, not only do those actors increase their own social capital but also the one of the actors they connect with each other.

Some of the positive outcomes related to an enhanced social capital include better know-how trading (Hippel, 1987), leading to knowledge spillovers (Breschi, 2001), physical and financial resources (Stam, 2014), as well as access to dealmakers. Those are defined as individuals with valuable social capital, who have deep fiduciary ties within the ecosystem and mediate relationships, make connections, and facilitate new firm formation (Feldman, 2016). Finally, all these factors influence the survival chances of firms, so that those that are active members of networks have higher survival chances than others (Uzzi, 1996).

Development of Propositions

If one imagines an ecosystem where two groups have a high in-group density, but are not connected with each other at all, most likely both groups learn to reduce distrust towards other group members. However, as there is no interaction with the other group, they most likely distrust the other group as the culturally-induced status quo is not affected by disconfirming experiences (Lewicki *et al.*, 1998). If two different organizations (e.g. incubators) in an environment shaped by general distrust create their networks, this is what might happen. In the present context of distrust, attempts to connect with the other group members are characterized by negative expectations towards the other party. Further, intergroup differences are also visible in cognitive aspects such as identification matters. Thus, inter-group distrust within EEs might be catalyzed if there is no shared identity, resulting in less exchange of tacit knowledge (Bouncken and Barwinski, 2021). Roundy (2021) already stated that identification with the EE leadership group leads to more collaboration and more willingness to share information and decision-making among EE leaders. However, I propose that other EE actors also are likely to show less distrust if they share an identity with the EE and its leaders.

Proposition 1: A shared identity leads to a decrease in distrust among different EE actors.

Such a super-identity can be related to an innovative entrepreneurial community. the creation of opportunities for innovation leads to innovative start-ups, high-growth start-ups, and entrepreneurial employees and is generally understood as being closely related to productive entrepreneurship (Stam, 2014). Thus, a focus on innovation of the central entrepreneurial support organization is beneficial.

Therefore, actors dealing with innovation-related aspects are in a relatively good position in order to connect actors from different groups. However, a potential mediator between different groups should also be trustworthy. Due to the success stories of startups and financial stability, organizational support organizations could be trusted relatively easily.

However, if it is a government initiative, distrust could exist due to the expectation of bureaucratic hurdles and corrupt grant distribution (Lagos *et al.*, 2021). Therefore, private organizations possibly have a better stand than public ones. Such an organization that manages to bridge the structural holes in the EE will be called “anchor organization” in the following. Besides the external links that entrepreneurial support organizations span between other actors and the internal links that are created for example between incubated startups, they are also particularly useful to social capital building because they enable resource pooling, which eliminates availability and affordability obstacles by permitting multiple enterprises to share resources (Lyons, 2002). As the affected parties work together on a project and have low levels

of distrust towards the central support organization, the network is expected to decrease distrust between the related parties in general. As the actors in this new subsystem are mainly focused on innovation, it is at this point that the innovative community separates itself from other entrepreneurial ones. Therefore, well-connected sub-communities arise around the anchor organization, that possesses increased social capital. Therefore, according to Alvedalen and Boschma (2017), involved actors benefit from identity (Hindle, 2010) and trust to reduce market costs (Doloreux and Parto, 2005). Therefore, I propose:

Proposition 2: Entrepreneurial Support Organizations connect previously unconnected actors and create an innovative community within the EE.

Even though nascent EEs are characterized by hierarchical network structures (Colombelli *et al.*, 2019), their actors (e.g. startups and support organizations) possibly can have a significant impact, even if they are less central than the anchor organization. For example, they can initiate their own programs and cooperations. Nevertheless, the anchor organizations assume a leading role due to their central position and thus have the possibility to influence the ecosystem to a higher degree. Therefore, it has the responsibility to encourage other actors to realize their ideas, even though the arising projects might represent potential competitors. This way, other organizations can build up their own networks that can interact with the existing ones, leading to a higher network density. This only works, if the anchor organization allows shifts in power and shares its leadership with others (Colombelli *et al.*, 2019). As long as other actors distrust the anchor organizations' intention to share its power with other actors, they might stay passive, assuming that they cannot meaningfully impact the EE. Therefore, I propose:

Proposition 3: Less central actors that perceive that they can meaningfully influence the EE are less likely to distrust the EE.

Building on these theoretical propositions, it can be concluded that EE-centralization around an anchor organization represents an important coping mechanism to manage distrust between actors. First, the network that arises around *the anchor organization provides the involved actors with a new super-identity* as "innovation-related" actors. Concurrently, this community represents the heart of the EE. However, the EE does not necessarily only include innovative actors but also those that support innovation without being innovative themselves (e.g. investors). Secondly, *the new network provides a higher amount of social capital which induces trust to reduce market costs* (Doloreux and Parto, 2005). Finally, if the anchor organization shares its leadership with the other actors and these less central actors feel empowered, they are likely to stronger identify with the system and less likely to distrust it (Prati and Zani, 2013). Thus, the last proposition of this paper is:

Proposition 4: The distrust within the newly arose community is lower than it was before. Thus, EE-centralization represents an important coping mechanism to manage distrust between actors

In order to empirically verify these propositions, I conducted an explorative case study to understand the effects of distrust on the EE structure. Like many Latin American countries, Panama is also affected by a culture shaped by distrust (Mattes and Moreno, 2018). Therefore, I chose the local EE in Panama City for the case study.

The Qualitative Data Sample

The Panamanian EE is still nascent and in its formation phase. Its Birth can be dated roughly to the year 1998 when an international Technopark (Ciudad del Saber) was opened. Nowadays, this organization is still very active and includes two initiatives relevant to innovative entrepreneurship that are (1) The Innovation Center (innovacds) and (2) Canal de Empresarias (empresariascds). Together with other actors such as the National Secretariat for Science and Technology (SENACYT) and the National Authority for Governmental Innovation (AIG), the Ciudad del Saber (CDS) is one of the actors most involved in the local EE. In October 2020, 126 startups and organizations such as banks, universities, and support organizations as well as private persons were listed on Crunchbase. Being a small, nascent Ecosystem in a generally distrusting environment, the EE is ideal for an analysis of the effects of distrust on the system.

The main goals of the qualitative analysis were hereby to understand what characterized the local EE and how it is affected by trust and distrust. This way, new insights for the field of nascent EEs can be created. The interview partners have been selected according to the following scheme: The first contact was a local university professor that connected me with different actors which then again provided other contacts. This procedure then resulted in a quite heterogeneous, representative sample (see table 1).

----- Insert Table 1 about here -----

Methodology

The questionnaire covered questions about patterns of cooperation and competition, ethics, and structure, as well as the governance of the EE. The interviews were conducted in a semi-structured manner. Afterward, a research assistant and I transcribed the interviews and coded them inspired, but not restricted, to three main categories: (1) Knowledge Sharing and Cooperation/Competition (2) Hierarchy of EEs (3) Ethics of EEs. Afterward, I organized the codes into categories.

Even before coding, it became clear that distrust indeed is a key challenge for the Panamanian EE. As proposed by previous research, it impedes knowledge sharing and successful cooperation (Alvedalen and Boschma, 2017). Thus, I coded the interviews with a clear focus on distrust, using a deductive approach that was based on my propositions.

I additionally modeled the structure based on self-reports of ecosystem members concerning their most frequent interaction partners in order to derive information about the structural characteristics of the EE. In order to verify the information about the network structure derived by the self-reports of interviewees, I analyzed which actors tagged others in Twitter during the last 5 years. For these purposes, I first downloaded every tweet of three actors mentioned several times during the interviews. To only consider relevant contacts, I did not take into account tags mentioned less than 13 times. Then I extracted a list of Twitter accounts tagged by these three actors, resulting in the first list of contacts of these three actors. Afterward, I traced the contacts of every Twitter account that appeared on this list. As Twitter is not only used for professional contacts, I had to manually exclude nodes unrelated to entrepreneurship based on information on LinkedIn and Twitter profiles. Further, I only considered nodes that were either listed on crunchbase, mentioned by the interviewees, or were explicitly related to innovation. Afterward, I added a filter to only visualize relations of the 50 most central actors based on Eigencentrality (Taking into account both centrality as well as the centrality of

contacts). Finally, I analyzed the created model in terms of centrality and modularity. The resulting network graphs are the following:

----- Insert Graph 1 and 2 about here -----

Results

The two graphs appear to be quite different at a first look. However, one can derive information on the most important players based on the centrality of the actors. In both cases, Ciudad del Saber turns out to be the most central actor. Due to unclear answers in the self-reported level, I could not distinguish clearly between Ciudad del Saber as the larger organization and one of its initiatives relevant to innovative entrepreneurship, which is the Innovation Center (innovacds). However, I could do so in the Twitter model, where it became evident that both the larger organization and its initiatives are quite central within the EE. Further, drawing the attention closer to the Twitter-based model, I would argue that it is likely that the innovative core of Ciudad del Saber lies in its innovation center and its incubation services. Further, both models include slightly different actors. For example, the self-reported model includes with AMPYME (The national authority for small and medium-sized firms) and SENACYT (The national secretary for science and technology) two public initiatives that are not represented in the Twitter-based model as well as two universities (the technological university, UTP as well as Universidad del Istmo). On the other hand side, the Twitter-based model includes with Manuel Lorenzo and Pedro Colmenares two private persons. As it would be expected, it, therefore, seems that the Twitter-based model includes more informal nodes. Further, the Twitter-based model identified also startups such as cryptobuyer or strategopanama that have not been included in the self-reported model. Nevertheless, the self-reported model demonstrates a higher share of startups. However, the different interviewees believed that support organizations were more important for the EE than those startups, which is visible because there is only one startup among the ten most central actors. Among the 20 most central actors, this looks quite different, as the share of startups increases to 40%.

----- Insert Table 3 and 4 about here -----

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 When analyzing networks, it is of great interest which firms do form cliques, meaning that they form a sub-network where each member interacts with all the other ones. Both graph 3 and 4 show examples where Ciudad del Saber forms such a clique with different actors. While the largest clique in the self-reported model clearly consists of 5 actors, whereby two of them are startups, while the other three are support organizations (private: Ideas Maestras and Ciudad del Saber, public: SENACYT). Among all the actors that are visualized in the two models, there arise seven cliques of four members in the Twitter-based model and eight cliques consisting of 4 members and one that consists of five in the self-reported model. Interestingly, Ciudad del Saber is listed in every single one of those cliques. However, the innovation center of Ciudad del Saber appears only once in the Twitter-based model.

----- Insert Graph 3 and 4 about here -----

 The network analysis shows that Ciudad del Saber indeed is the most central actor within the innovative community. Further, the different cliques support the assumption that Ciudad del Saber connects different actors, as it is present in several different of them. In order to understand whether Ciudad del

Saber is represented mainly by their innovation center or not, I had to get some contextual data from the tweets themselves. First of all, there were 105 Tweets where Ciudad del Saber was linked, representing therefore 105 incoming links for Ciudad del Saber. In 78 of them, one can find either a second tag referring directly to the innovation center or a clear contextual link to the innovation center. Four of them referred to the initiative Canal de Empresarias. Concerning the remaining links, it cannot be said exactly whether the tags refer to the innovation center. However, it seems to become clear that it is this initiative that connects the different actors. Further, these actors mostly support or exercise innovative activities, which means that proposition 2 can be supported. Here, it is noteworthy that it connects also many actors that are not taking part in incubator- or accelerator programs with each other. On the other side, most interviewees' focused on internal networking that takes place during an incubation program or within a coworking place. An employee of Ciudad del Saber stated:

Basically, we have built an ecosystem of startups, support companies, and also provide them with support through the investment programs and [...] the largest coworking spaces in Panama [...]. Our mission is to make an innovative community that promotes the social welfare of science, business and humanism. So, everything that adds value and contributes to generating impact from the Ciudad del Saber and from the Innovation Center focused on innovative entrepreneurship, we support it. (ID-09)

Having supported proposition 2, I will now use different quotes from the interviews to shed light on the other proposed relationships. The first one comes from ID-03 who already assisted an acceleration program in Ciudad del Saber.

There is [...] this distrust to [...] share information about what you are going through in general [...]. Among those [...] accelerated [...] in the Ciudad del Saber, we have created a bond, [...] we share more confidentiality and what is happening to us. [...] So I saw the need to come back to the Ciudad del Saber and rent a space, precisely to [...] to keep up to date, [...] to ask for some guidance [or] ideas [...]. I can have contact with anyone who is here in the community [...] So you create a closer circle to do this and share this kind of things and then with the others [for example with ID-20 or ID-04], you share certain things, but not so many details. (ID-03)

In this statement of ID-03, it becomes clear that there is a trust-inducing effect of internal networking during incubation and acceleration programs. S/he further refers to a group identity when referring to “those accelerated in the Ciudad del Saber”. However, afterwards s/he also refers to the coworking space and its possibility to interact with other actors, pointing to an identification with an identification with the whole community, including also those that are working in the coworking spaces but are not part of an incubation program. Even though s/he mainly identify with “Ciudad del Saber” and not primarily with innovative activities, her statement supports proposition 1, as the identification with Ciudad del Saber lowers distrust towards several actors.

Interestingly, s/he also refers to two actors that do not seem to be part of her inner circle. As it could be of help here to draw additionally on information from the network models, I checked the two models to see whether this statement is reflected in the network models. In terms of centrality, ID-03 ranks on place 11 in the self-reported model and 12 in the twitter-based one. ID-04 ranks 33rd in the self-reported model and 94th in the Twitter-based one. Finally, ID-20 is the 9th most central actor in the self-reported model, but is not represented at all in the Twitter-based one. Therefore, it seems that taking the two models together confirms the statement. This way I identified two peripheral actors when it comes to the community built around Ciudad del Saber. Thus, the next statement comes from ID-04.

In order to be able to work collaboratively you practically have to trust the good intentions of the other party [...] but in order to trust you have to have already earned brand credibility.

So it is very slow in Panama. [...] If I were given the opportunity, I could express my knowledge and experience and make recommendations to the system or to the ecosystem, but the spaces do not exist. [...] There is no actor within the system, within the entrepreneurship ecosystem that is currently proactively and genuinely interested in knowing what we need to improve in the ecosystem (ID-04).

There is a lot of distrust in the ecosystem [and] people don't feel comfortable talking about their ideas or their projects [...]. Nobody wants you to get ahead. (ID-11)

The two interviewees provided very interesting information. First, ID-04 seems to feel abandoned by the system and distrust the key actors' intention to improve the ecosystem. His distrust is shared by ID-11. Even though these statements do not completely support proposition 3, as it does not refer to the case where actors can meaningfully influence the EE, it indeed supports the inverted version of the proposition, meaning that fewer central actors are more likely to distrust, if they cannot meaningfully influence the system. Thus, it might be helpful to have a look at another statement from another actor.

In our ecosystem, in Ciudad del Saber, [...] we consider that we are [...] very influential, especially [...] since we are in incubation [...]. We have the opportunity to give talks [...] we gave internships to university students, to production students, and we have given them our service totally free of charge [...]

At least in the sector where we are, I do not know if there are other startups that do, they compete very directly in this type of service, and even though we have competition in the service, we do not, that is, we have an alliance with our competition, because we are the only software, nobody has been digitalized, the only digitalized ones are us, so in the end, you end up making an alliance. (ID-24).

ID-24 seems to identify strongly with the ecosystem created by Ciudad del Saber. Further, s/he is aware that there are many ways to influence the ecosystem. Supporting proposition 3, s/he shows less distrust than ID-04. Finally, supporting the first three propositions, the last proposition is also supported. The shared identification of belonging to "Ciudad del Saber" decreases distrust among several actors and allows effective collaboration and leads to a separation from non-innovation-based communities. The perception that one can meaningfully influence the ecosystem seems to have also an impact when it comes to the reduction of distrust. Therefore, the temporal centralization of EEs around anchor organizations seems to be a good way to reduce distrust, if a shared identity arises and the involved actors feel that they can have a meaningful influence in the EE.

Another interviewee describes how a local concentration in the capital made him feel excluded from the EE and how this situation led to skepticism towards the EE. Even though it was not expressed directly, one can read here that the person expressed a feeling of having a disadvantage compared to other actors living in the capital, and that participating in the EE is, therefore, more difficult. This impression, according to the interviewed person, leads to a feeling of skepticism.

Yes, look, the, I have been a [...] little bit skeptical about the ecosystem [...] because what happens is that many of these organizations only operate in Panama City. I am from Santiago, I am 4 hours away [...]. Nowadays with the issue of confinement, these

organizations have expanded here to the interior, but for example before the pandemic I remember that I had to take a bus to the capital from early in the morning, we are almost talking about a 12-14 hours trip and that was tiring. (ID-13)

Discussion

This paper analyzes the role distrust plays in nascent EEs, relying on both qualitative and social network analysis. The case study shows how an entrepreneurial support organization connects previously unconnected actors and creates a new, innovative community. I found support for the proposition that building systems around entrepreneurial support organizations help to create communities with lower internal distrust. Further, the data show (1) that this community benefits from a shared identity and (2) that actors are likely to distrust less if they can meaningfully influence the EE.

Theoretical contributions

This paper contributes to the literature on entrepreneurial ecosystems and a more profound understanding of EEs by shedding light on the early stages of EEs. It proposes that the transition from hierarchical to participative relational governance is influenced by the level of trust and distrust among the EE actors and that the temporal centralization of the ecosystem is a possible mechanism to foster trust by the intermediation efforts of one anchor organization and thus reacts to Colombelli *et al.* (2019, p. 519) who encouraged future research to focus on strategies that drag nascent ecosystems towards a more systemic and participative relational governance design. EEs are self-organized, adaptive systems, meaning that the system continuously adapts to its environmental variables (Roundy *et al.*, 2018). A better understanding of how distrust influences the system can therefore contribute to further development of the EE paradigm (Kuhn, 1962).

Further, the combination of network methods and qualitative interviews provides unique insights for literature dealing with network approaches and social capital. Closing structural holes between several groups that otherwise would not be connected leverages social capital for all the involved actors. There is a twofold effect: First, the overall amount of social capital available in the EE increases due to a higher amount of accessible links, and secondly, the intensity of these links increases due to decreased distrust. The latter point leads thus to more effective knowledge exchange and enhanced collaboration (Kwon *et al.*, 2013).

Practical contributions

Understanding how an EE can react to distrust and how it can benefit from temporal centralization is a practical matter in its very nature. Thus, practitioners and ecosystem builders can directly apply the gained knowledge for future projects. Further, a reasonable strategic choice for governmental ecosystem builders would be to support trusted organizations financially in order to decrease distrust within the ecosystem and give them higher financial stability that facilitates collaboration with potential competitors.

The leading organizations should be aware that their role is one of facilitators, empowering other ecosystem actors such as startups and support organizations, even though those are

potential competitors. This way, the power structure within the EE shifts. Otherwise, the perceived powerlessness and the feeling of not being able to contribute to the EE might increase distrust in the EE and thus decrease the motivation to contribute to the development of the ecosystem. In the Panamanian case, this became evident in the case of governmental efforts related to (not primarily innovative) entrepreneurship. As there is one clear leader in the resulting community, the interviewees referred less to own initiatives or those of private initiatives but simply expected the leader to act.

Limitations and future research

Further, a general critique on qualitative research emphasizes subjectivity (Pyett, 2003) in coding is that interpretation of results and selection of interviewees influence the findings. Nevertheless, two people coded the interviews independently, which increases the objectivity of the data. Further, I applied two different research techniques, as I used the social network approach as well as semi-structured interviews, which allowed for triangulation at several points of the data analysis.

Further, it is likely that there the network models, as well as the selected interviewees, are biased. For example, it is undeniable that Twitter is not used by every actor to the same degree. This also might be a possible explanation for the absence of AMPYME, the authority for small and medium-sized firms, in the Twitter-based model. On the other hand side, the self-reported model, as well as the interviews, might base on information derived from a non-representative sample. However, I think that the twitter model and the self-reported ones, as well as the interviews are different parts of the same puzzle and complement each other perfectly. It is also noteworthy, that the three different sources of information do not contradict each other.

Nevertheless, the results of this paper are not perfectly generalizable and should always be considered in the respective context. This occurs also, because of the single case study design that only focuses on a specific place and a specific period of time. Thus, future studies should compare different ecosystems and their networks. Further, interactions of Twitter during a longer period of time would allow for a deeper understanding of how nascent ecosystems turn into mature, successful ones.

Further, it has to be mentioned that not all the interviewees were directly involved into innovative entrepreneurship (e.g. ID-08, ID-12, ID-15). However, this allowed me to take the positions of less innovative entrepreneurs into account. Taking in-, and outsider perspectives on the nascent EE therefore even enriches this study. Thus, evidence that the innovative and the traditional entrepreneurial support system separate themselves when an innovative anchor organization builds a new community can be provided.

Continuous changes within systems, including those of leadership proved to have a positive effect on innovation and creativity (Peter *et al.*, 2015). However, as this paper draws on a single case study, I can only assume how a nascent entrepreneurial ecosystem reacts if permanent leadership was introduced. Future studies could therefore analyze how strong hierarchical leadership influences the commitment of EE actors in government driven, top-down attempts of EE creation. Generally, I hope that this study encourages researchers to study ecosystems within their context and has contributed to creating awareness for the importance of studying entrepreneurial ecosystems long before they reach a mature state in order to gain the necessary knowledge to foster productive entrepreneurship in the long run.

Conclusion

In this work, I analyzed how distrust affects the structure of nascent Entrepreneurial Ecosystems. Based on previous research and empirical evidence, this article underpins the crucial role that entrepreneurial support organizations inherit during the early stages of EEs. By intermediating between otherwise unconnected nodes and decrease distrust between these actors, they contribute to the creation of a dense, innovative community led by themselves. In this community, knowledge flows more easily. As the entrepreneurial support organization is respected and trusted by most other actors of the ecosystem, the EE naturally builds around this anchor organization. This way, distrust among other actors can decrease through the intermediation efforts of the anchor organizations. This allows for a decentralization of the system, building new sub-communities around other actors that they will be trusted. A high level of trust therefore could be considered an antecedent of EE maturity and decentralization, while high levels of distrust represent an antecedent of nascent, centralized EEs.

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TABLES AND GRAPHS

Table 1 - Overview about interviewees

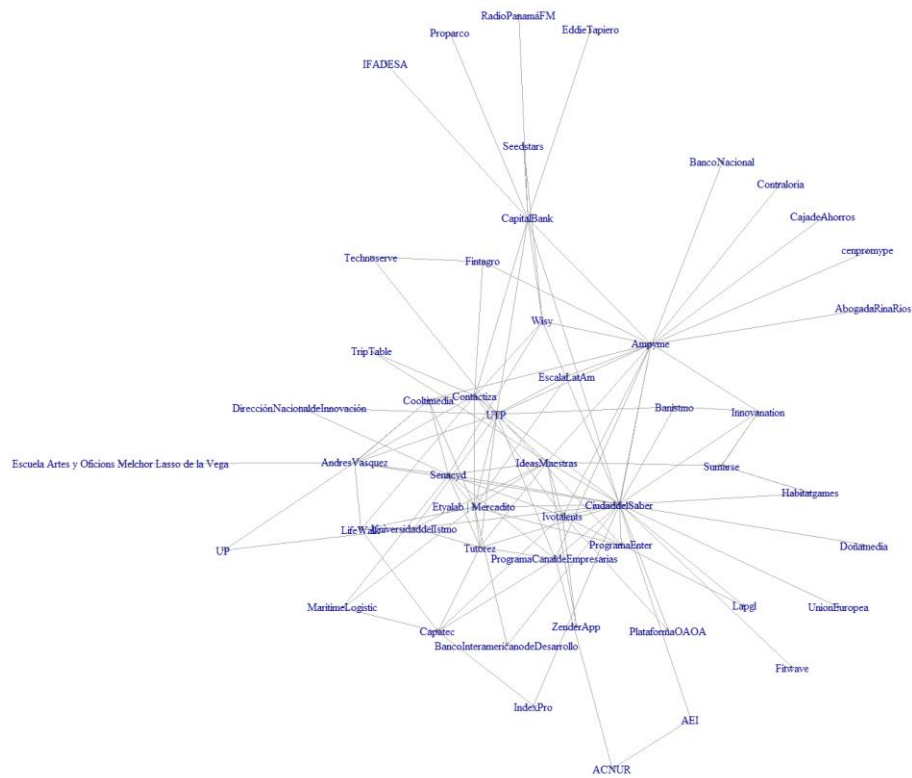
Interviewee	Description
ID-01	CEO of a private incubator and accelerator program
ID-02	Manager of entrepreneurial capital at a local bank
ID-03	Entrepreneur (Education)
ID-04	Entrepreneur (Education)
ID-05	Entrepreneur (AI)
ID-06	Serial Entrepreneur (Logistics); Leader of different entrepreneurial communities
ID-07	Serial Entrepreneur / Developer (Different Sectors)
ID-08	Entrepreneur (Craftsmanship)
ID-09	Support Organization (Innovation Center)

ID-10	Support Organization (Bridging public sector, firms, and academics)
ID-11	Entrepreneur (Web Platform Design and Development)
ID-12	Entrepreneur (Calibration of Devices)
ID-13	Entrepreneur (Agriculture and Technology)
ID-14	Support Organization (Support for female Entrepreneurs)
ID-15	Entrepreneur (Clothing)
ID-16	Entrepreneur (Legal)
ID-17	Support Organization (Social Entrepreneurship Support)
ID-18	Politician (Authority for SMEs)
ID-19	“Non-innovative” Entrepreneur (Gastronomy)
ID-20	Entrepreneur (Tech)
ID-21	Professor (private university)
ID-22	“Non-innovative” Entrepreneur (Craftmanship)
ID-23	Professor (public university)
ID-24	Entrepreneur (Software as Service)
ID-25	Support Organization (Female Entrepreneurs)

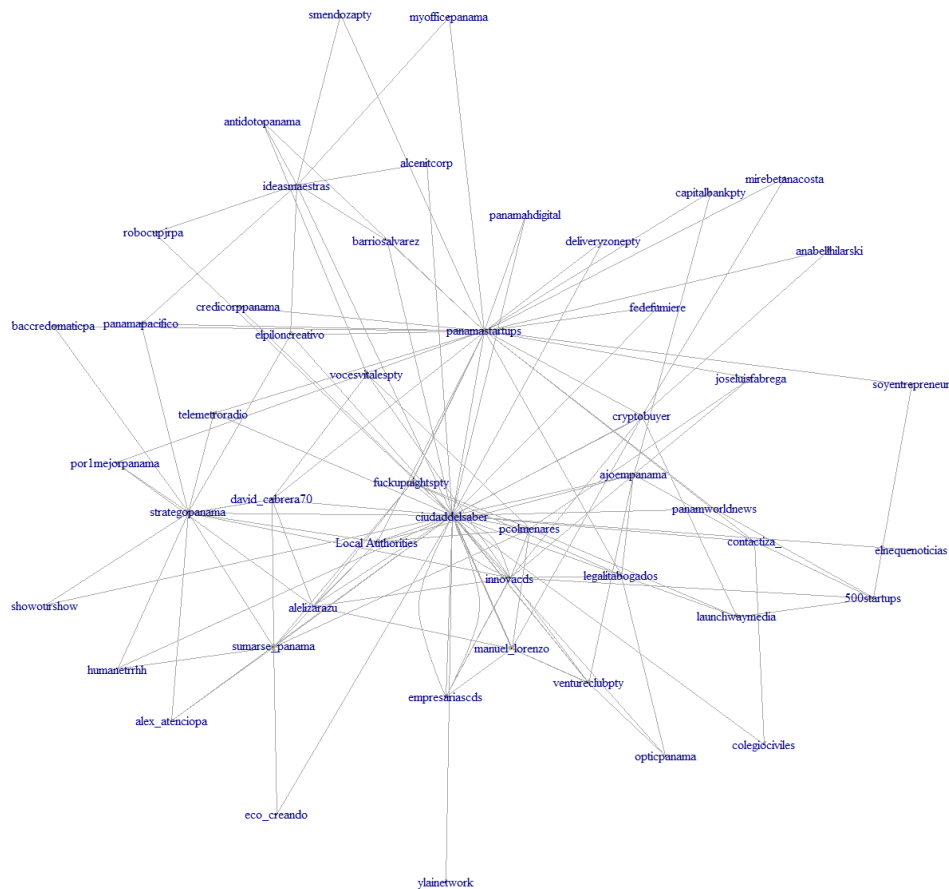
Table 2 – Sample results of the explorative analysis

Quote	Codes (CATEGORY)	Key Statement
<i>So, in this sense, I think that if someone tells me [...] I'm going to tell you something, but you have to sign this, no, I really don't [...] want you to tell me because maybe I already knew about it or at some point my company would do something like that. [...] you better not tell me anything because the enterprises pivot many times [...] (ID-05).</i>	Sign documents to assure that nobody copies your ideas creates distrust. (DISTRUST) (COLLABORATION)	Signing something before talking expresses distrust and impedes collaboration
<i>There is still this perception that someone is going to steal your idea, [...] nobody wants you to get ahead like [...] Entrepreneurs who have obtained large seed capital, [...] don't support each other, so imagine among those who have</i>	Low support among entrepreneurs Fear that others steal your ideas	Distrust expressed in fear that others steal your idea

<p><i>not received capital, [...] they don't trust each other. (ID-11)</i></p>	<p>Lack of trust between entrepreneurs</p> <p>(DISTRUST)</p> <p>(COLLABORATION)</p>	
<p><i>Well, but look at it the other way around: what is unethical? So, what is unethical, in principle, is the perception (and perhaps the reality) that there is no meritocracy in the selection of the ventures that are allocated funds. That would be the first claim, the biggest complaint in the world of entrepreneurship, is that we are not sure if the funds are being delivered correctly. (ID-18)</i></p>	<p>No trust in correct and ethically correct delivery of funds</p> <p>(ETHICS)</p> <p>(DISTRUST)</p>	<p>Low transparency of resource allocation creates distrust.</p>
<p><i>If I were given the opportunity, I could express my knowledge and experience and make recommendations to the system or to the entrepreneurship ecosystem, but the spaces do not exist. [...] The spaces, the auditoriums and no actor within the system, the entrepreneurship ecosystem that is currently proactively and genuinely interested in knowing what we have to improve in the ecosystem there is none. (ID-04)</i></p>	<p>Lack of spaces where entrepreneurs can contribute to the ecosystem</p> <p>Ecosystem perceived as distant</p> <p>Powerful actors not interested in progress for the EE</p> <p>(EE LEADERSHIP)</p> <p>(EE STRUCTURE)</p> <p>(DISTRUST)</p>	<p>Distrust in the intention of the “important actors” and the perception that only key actors can create important spaces.</p>



Graph 1 - Network structure based on self-Reports



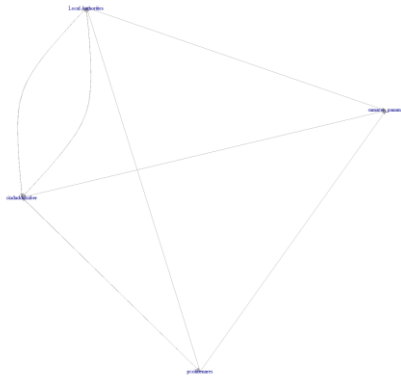
Graph 2 - Network structure based on Twitter

1	Ciudadelsaber	1
2	Ampyme	0.809
3	IdeasMaestras	0.599
4	UTP	0.591
5	Senacyd	0.501
6	ProgramaCanaldeEmpresarias	0.490
7	CapitalBank	0.454
8	UniversidaddelIstmo	0.406
9	Etyalab Mercadito	0.402
10	Andresvasquez	0.398

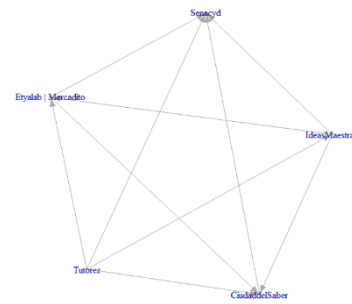
Table 3 - Central Actors Self-Report

1	ciudadelsaber	1
2	innovacds	0.550
3	panamastartups	0.530
4	cryptobuyer	0.415
5	empresariascds	0.408
6	strategopanama	0.385
7	manuel_lorenzo	0.380
8	ventureclubpty	0.369
9	Local Authorities	0.366
10	pcolmenares	0.331

Table 4 - Central Actors Twitter



Graph 3 - Cliques Twitter



Graph 4 - Cliques Self-Report