PRIVATE (AND PUBLIC) INVESTIGATIONS

When and how do public and private incubators change institutions in entrepreneurial ecosystems?

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1. Introduction

Entrepreneurship has long been recognized as an important source of innovation and economic growth (Schumpeter, Opie, & Elliott, 1934). However, entrepreneurs cannot innovate in isolation, they are influenced by, and dependent on, the ecosystem in which they operate (Autio, Kenney, Mustar, Siegel, & Wright, 2014; Spigel, 2015; Stam, 2015). These entrepreneurial ecosystems consist of material, social and cultural attributes that influence entrepreneurship and innovation in a geographical region (Spigel, 2015). The attributes explain differences in innovative performance between regions (Spigel, 2015; Van Weele, Steinz, & Van Rijnsoever, 2014; Van Weele, Van Rijnsoever, & Nauta, 2016). Literature on entrepreneurial ecosystems lacks focus on the institutional context in which entrepreneurial ecosystems evolve (Alvedalen & Boschma, 2017; Mack & Mayer, 2016). This is problematic because institutional context plays an important role in shaping the nature and attributes of the entrepreneurial ecosystem (Stam, 2015). Understanding institutional change in entrepreneurial ecosystems should therefore be an important aspect in further research on entrepreneurial ecosystems (Alvedalen & Boschma, 2017). This thesis therefore studies how institutional context differs between various ecosystems, and how incubators play a role in creating or changing this institutional context.

The institutional context of an entrepreneurial ecosystem concerns the normative and regulative rules and regulations that govern the actions of individuals and organizations (Scott, 2008). There also exists a third institutional pillar: cultural-cognitive institutions (Scott, 2008). This pillar describes the institutional nature and culture of the ecosystem and provides a foundation on which normative and regulative institutions build. The cultural-cognitive institutions are less superficial and more difficult to change (Scott, 2008). Regulative institutions take the shape of laws, policies and sanctions whereas normative institutions consist of norms, values and behavior of actors (Scott, 2008). Normative institutions originate from social interaction, creating a desired way of behavior for the actors in the ecosystem. Institutions can be changed by actors who, even though they are governed by the existing institutions, have the agency and opportunity to change them. These actors are called institutional entrepreneurs, which are defined as actors who mobilize resources, allies and narratives to create new or transform existing institutions (Battilana, Leca, & Boxenbaum, 2009; DiMaggio, 1988). Literature on institutional change describes mechanisms that explain when institutional change is possible and how institutions are then changed. The articles of Battilana et al. (2009) and Dorado (2005) propose conditions that enable institutional entrepreneurship and describe opportunities for institutional change. These conditions are related to the social position of the institutional entrepreneur and to the institutional field the entrepreneur is in. Battilana also describes how institutions can be changed. When the opportunity for institutional change arises, institutional entrepreneurs can change them by creation a vision on institutional change and creating alliances to support this vision. However, institutional change literature makes no distinction between different types of institutions when describing these conditions and mechanisms, assuming they are the same for normative, regulative and cultural-cognitive institutions. However, since Scott (2008) states that institutions differ in how profound and easy to change they are, there could be differences in when and how different types of institutions are changed. This has not been researched in institutional change literature.

Institutional change literature also emphasizes institutional entrepreneurship by large public organizations (Battilana et al., 2009), and there is a lack of focus on institutional entrepreneurship by private entrepreneurs. This thesis aims to fill that gap by researching if public and private incubators can act as institutional entrepreneurs. Incubators are a unique case, since they are a type of organization that have a public and private version. Incubators are organizations which help start-ups and entrepreneurs by providing access to resources and services (Eveleens, van Rijnsoever, & Niesten, 2017). Based on literature, incubators are actors well-enabled to become institutional entrepreneurs. Incubators occupy a central position in social networks (Van Rijnsoever, Van Weele, & Eveleens, 2016) and work together with many other actors who originate from different fields, giving them access to

divergent knowledge. This provides incubators with opportunities for institutional change. Incubators are appreciated by firms and governmental organizations (Eveleens et al., 2017). This provides them with social status in their ecosystem, which is helpful in creating a vision on institutional change and mobilizing alliances to support change. Incubators also possess resources needed to actively implement institutional change (Aernoudt, 2004; Hansen, Chesbrough, Nohria, & Sull, 2000).

Within an entrepreneurial ecosystem there are often public and private incubators active, and these incubators often fulfill similar roles in the ecosystem, this makes them suitable actors to study if there are differences between when and how public and private actors change institutions. Academic literature states that there are inherent differences between public and private organizations (Boyne, 2002; Nieto Morales, Wittek, & Heyse, 2013). Private incubators are profit-based and provide mostly intangible resources whereas public incubators use public funds to provide tangible resources (Barbero, Casillas, Ramos, & Guitar, 2012). The fact that private incubators provide intangible resources means they could be more focused on changing normative institutions, whereas public incubators are focused on changing tangible regulative institutions. Private incubators are often more sector specific and focused on developing their sector, whereas public incubators are more focused on the economic development of their ecosystem. They are more concerned with the well-being of the ecosystem but also have access to divergent knowledge from different sectors. This means public incubators seem better enabled for institutional entrepreneurship on cultural-cognitive institutions. However, there is no empiric evidence to confirm that incubators act as institutional entrepreneurs and if this differs between public and private incubators, which is another gap in literature this thesis aims to fill. The gaps in literature described in this chapter lead to the following research question:

When and how do public and private incubators change or create normative, regulative and cultural-cognitive institutions in the entrepreneurial ecosystem?

This study is designed as a qualitative multi case study. Fourteen incubators from seven different ecosystems are studied using a series of interviews. The seven ecosystems are Amsterdam, Delft, Eindhoven, Nijmegen, Rotterdam, Utrecht and Wageningen. Comparing incubators from different ecosystems is done to gain insight in the possible ways an incubator contributes to the institutional environment of an entrepreneurial ecosystem and how this contribution differs between public and private incubators.

The outcomes of this study are relevant to incubators and policy makers. This study shows which mechanisms enable institutional entrepreneurship by incubators, so incubators can use this study to get insight in when and how they can change institutions. Policy makers can use the insights in the activities of public and private incubators to create effective policy supporting these incubators. This thesis continues with a theoretical framework of relevant concepts and a methodology describing how the research is carried out. After this, the results of this study are presented. Finally, this study ends with a conclusion and a discussion, which provide conclusions and reflections on the research.

2. Theoretical Framework

2.1 Entrepreneurial ecosystems and their institutional context

Entrepreneurial ecosystems are defined as ‘’a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship” (Stam, 2015, p. 1765). These interdependent actors are concentrated in a geographical region, and influence the trajectory of entrepreneurship and innovation in this region (Cohen, 2006). There are several attributes necessary in the region to support and enable entrepreneurship. Especially the social context, which creates institutions that can support or hinder entrepreneurship, is an important concept in entrepreneurial ecosystems (Roundy, 2016, 2017; Stam, 2015). Entrepreneurial ecosystem literature distinguishes itself from other literature by focusing on entrepreneurs rather than firms. Furthermore, entrepreneurial ecosystem literature does not view entrepreneurs solely as an output of the system but as an embedded actor. Entrepreneurs possess agency and play a vital role in keeping the ecosystem healthy by changing its attributes where necessary (Stam, 2015). After all, entrepreneurial ecosystems are constantly evolving over time and embedded entrepreneurs play an important role in these dynamics (Mack & Mayer, 2016).

There are different scholars that have attempted to construct an overview of attributes necessary in an entrepreneurial ecosystem (Feld, 2012; Isenberg, 2010; Spigel, 2015). Attributes of entrepreneurial ecosystems concern foundations on which an entrepreneurial ecosystem can be built. However, the presence of attributes is not enough for a successful ecosystem, the interrelations between attributes are also important. The attributes and their interrelations are governed by their institutional context. The role of institutions in the entrepreneurial ecosystem is conceptualized nicely by Stam (2015), who considers institutions an important framework condition in the entrepreneurial ecosystem. Stams framework can be found below in figure 1:

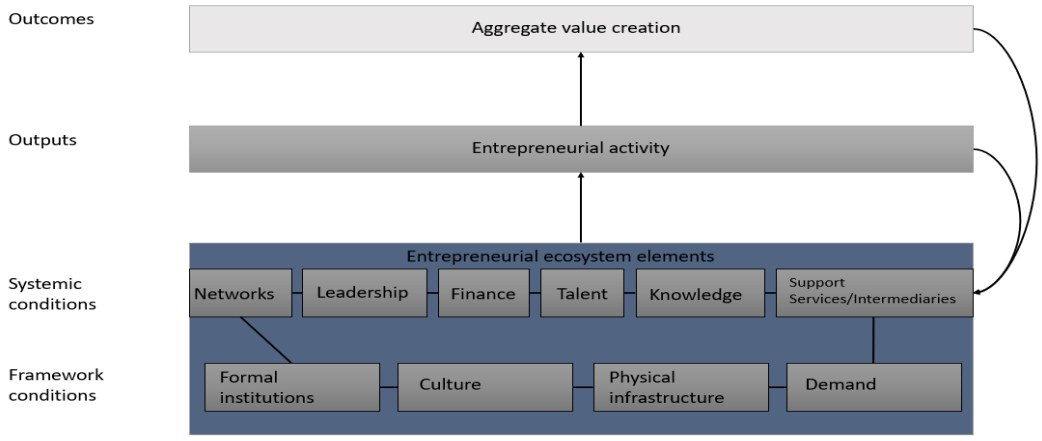

Figure 1: Key elements, outputs and outcomes of the entrepreneurial ecosystem (Stam, 2015 p. 1765)

At the heart of the ecosystem are the systemic conditions. The presence of these conditions and their interactions are the main cause of the success or failure of the ecosystem. These systemic conditions are derived from existing frameworks such as Feld (2012), Isenberg (2010) and Spigel (2015). The systemic conditions are influenced by the institutions within the ecosystem, but the systemic conditions also help shape these institutions. Institutions are considered an important framework condition in the entrepreneurial ecosystem (Stam, 2015). These framework conditions are the fundamental causes of value creation in the ecosystem. The difference in institutions and institutional change therefore affect the nature and success of the entire entrepreneurial ecosystem.

2.2 Types of institutions

Institutions are the norms, values, rules and regulations that govern the actions and ideas of individuals and organizations (DiMaggio, 1988; DiMaggio & Powell, 1983). Scott (2008) distinguishes regulative, normative and cultural-cognitive institutions. Regulative institutions represent 'hard' institutions such as rules, laws and sanctions which have receive the most attention by academics (Scott, 2008). A possible explanation for this is that regulative institutions are most visible, but they are also more superficial compared to normative and cultural cognitive institutions (Scott, 2008). The regulative institutions are present in Stams framework (2015) as a framework condition: formal institutions, so they play an important role in governing the ecosystem. Normative institutions originate from a social dimension, prescribing and evaluating how actors should behave. Scott (2008) considers normative institutions to be more consequential than regulative institutions, since normative institutions are less easily manipulated and respond slower to change. Normative institutions are not explicitly mentioned in Stams framework, but they govern the behavior of all the actors in the ecosystem. These actors involve the leaders, support services, providers of knowledge and finance, and the entrepreneurs themselves. Normative institutions therefore play an important role in the systemic conditions, as they govern how incubators and other actors behave in the ecosystem. Cultural-cognitive institutions describe the nature of the society and culture in which the incubator operates. Cultural-cognitive institutions form the foundation on which the other institutions are built. Cultural-cognitive institutions help shape the culture of the entrepreneurial ecosystem, which is an important framework condition in Stams framework (Stam, 2015).

Institutions are subject to evolution and change, as was first noted by DiMaggio (1988). Institutions are changed by actors who are governed by these institutions but still have the agency to change them. These actors are called 'institutional entrepreneurs' which are defined as actors who mobilize resources, allies and narratives to create new or transform existing institutions (Battilana et al., 2009; DiMaggio, 1988). Institutional entrepreneurs can be individuals, organizations, groups of organizations or departments within organizations. An actor classifies as an institutional entrepreneur when consciously or unconsciously initiating divergent change and actively helping with the implementation of such change (Battilana et al., 2009). Divergent changes are changes that break with the current dominant institutional context (Battilana et al., 2009). Actively helping with the implementation of institutional change entails the mobilization of resources and allies by the institutional entrepreneur. The main theoretical weakness surrounding institutional entrepreneurship is a paradox of embedded agency, as institutional entrepreneurs are both governed by existing institutions but also able to alter these (Garud, Hardy, & Maguire, 2007). Battilana (2006, 2009) and Dorado (2005) propose several enabling conditions that explain when and how institutional entrepreneurs can resolve the paradox of embedded agency. These enabling conditions describe opportunities when there is room for institutional change. Battilana distinguishes two types of enabling conditions: field-level conditions and the actors' social position. These enabling conditions are introduced in the following section and applied to incubators and entrepreneurial ecosystems. Once there is room for institutional change, it's implemented through two processes. First a vision of change is created, then resources and allies are mobilized to implement this vision. Incubators are well-equipped to create a vision and implement it, which is also explained further in section 2.3.

2.3 Incubators as institutional entrepreneurs in the entrepreneurial ecosystem

Even though they are not in the locus of entrepreneurial ecosystem literature, incubators fulfill many systemic elements of the ecosystem (van Weele et al., 2016). Incubators aim to create a nurturing environment for start-ups and entrepreneurs and provide them with resources (Grimaldi & Grandi, 2005; Zedtwitz, 2003). These resources can either be tangible, such as office space and financial

investments, but also intangible, such as access to markets and networks (Aernoudt, 2004; Hansen et al., 2000; Soetanto & Jack, 2013; Van Rijnsoever et al., 2016; Xiao & North, 2017). For example, Nijssen and Van der Borgh (2017) found that incubatees gain formal and informal network access through incubation. Furthermore, incubators can legitimize regions and provide a credible narrative on entrepreneurship (Van Weele et al., 2014, 2016). The presence of an incubator reflects or causes a positive cultural attitude towards entrepreneurship which has led to frequent policy support.

Besides satisfying the needs of their ecosystem, incubators are also in a good position to influence the institutional environment of the entrepreneurial ecosystem and act as institutional entrepreneurs. There are several conditions related to the field of the incubator that enable them as institutional entrepreneurs. The field-level conditions are exogenous to the incubator, but they can be the result of actions of other actors, which the incubator can exploit to change institutions in the field. Field-level conditions are often interrelated, but several types can be distinguished. Firstly, there are economic and political crises that shock actors into realization that institutions need to be changed. Secondly, there is the heterogeneity of the field. A heterogenous field with multiple institutional orders provides opportunities for institutional entrepreneurship (Battilana et al., 2009; Dorado, 2005). If an actor is exposed to multiple institutional orders, they are less likely to take an institutional order for granted which creates uncertainty and provides room for institutional change (Battilana et al., 2009; Dorado, 2005). This is the case in large diverse entrepreneurial ecosystems with many different types of actors who inspire different types of behavior. The final field-level condition depends on the degree of institutionalization. A low degree of institutionalization is associated with uncertainty which provides opportunities for human agency (Battilana et al., 2009; DiMaggio, 1988). In field with extreme institutionalization nobody is likely to question the existing institutions (Dorado, 2005). This means that emerging or underdeveloped ecosystems, which have a less developed institutional context, provide room for institutional entrepreneurship. Established ecosystems require their actors to adhere to the existing, fully developed institutional order. A low degree of institutionalization makes it easier to resolve the paradox of embedded agency, but that does not mean highly institutionalized fields prevent this from happening completely (Battilana et al., 2009).

Since the field-level conditions are similar for everyone in the field, there are also enabling conditions related to the individual institutional entrepreneur. The social position of the institutional entrepreneur influences its perception of the field and the resources possessed which can be used to implement divergent change (Battilana, 2006). Three conditions related to the social position of an actor can be distinguished: status, access to divergent information and network (Battilana et al., 2009; Dorado, 2005). Incubators are actors with a high social status and legitimacy (Eveleens, 2017), as they have credibility in the eyes of policy makers and other actors in the ecosystem. This gives incubators credibility when initiating institutional change (Battilana, 2006). For this to happen, actors need access to divergent information (Battilana et al., 2009). Actors with access to multidisciplinary fields have better access to divergent knowledge. This enabling condition holds especially well for incubators that are not sector specific, since they interact with institutional orders from various sectors. However, literature is conflicting about whether access to diverging information is found easier at the center or at the periphery of the field (Battilana et al., 2009). Incubators occupy a central position in their networks (Hansen et al., 2000; Van Rijnsoever et al., 2016). This is especially the case with established incumbent incubators. Newer incubators at the periphery of the field seem more enabled to acquire divergent knowledge from outside the ecosystem. Furthermore, incubators at the center of the field often have the power to exert change but lack motivation, whereas incubators at the periphery of a field have an incentive to change institutions but lack the power the influence the entire field (Garud et al., 2007).

Once incubators have been enabled to develop new institutions, they are also capable of implementing these. Incubators are able to create a vision on new institutions, since they are central actors in the network of the ecosystem (Van Rijnsoever et al., 2016). Such a vision must be crafted by the incubator,

and framed in a way that appeals to actors needed to implement the change (Battilana et al., 2009). Framing a vision for change can be done by explicitly noting the failure of existing institutions and delegitimize them, but also by motivating actors to embrace a new institutional frame. Framing institutional change requires social skills by the change agent (Battilana et al., 2009) which incubators are assumed to have on account of their networking function (Van Rijnsoever et al., 2016). The second process, which is often intertwined with the first, is the mobilization of allies behind the vision. The incubator must form alliances with actors embedded in existing institutions to get them behind new institutions and support these. Narratives are a useful tool in this regard, as allies need to be united behind the new institutions. While incubators have no formal authority, they have legitimacy and status in the eyes of entrepreneurs and policy makers (Eveleens et al., 2017). This also makes it easier to mobilize allies behind their vision. To create an alliance, resources are also important. Financial resources can be used to bypass sanctions or initial negative effects of the new institutions. Incubators provide resources to incubatees, so they should also possess financial resources useful for overcoming initial drawbacks of institutional change (Aernoudt, 2004; Van Weele et al., 2016).

2.4. Public vs Private

The effect of incubators on their institutional environment is likely to vary, as there are many different kinds of incubators (Barbero, Casillas, Wright, & Ramos Garcia, 2014; Zedtwitz, 2003). An important distinction can be made between public and private incubators (Barbero et al., 2012; Frenkel, Shefer, & Miller, 2008). Because of their differences, it is likely that public and private incubators differ in their influence on the institutional environment of entrepreneurial ecosystems. To gain a deeper understanding of the differences between public and private incubators, it is fruitful to look at management literature not specifically concerning incubators. The difference between public and private organizations is defined in terms of ownership and the source of funding. Private organizations are owned by entrepreneurs or shareholders and derive their income from fees on customers. Public organizations are owned collectively or by political communities and acquire funding through taxation (Boyne, 2002). However, there is a large grey area of organizations which partly fit both definitions, leading to the conclusion that there is no purely public or purely private organization (Boyne, 2002). Private incubators are for-profit, whose main goal is to develop business through private financing (Barbero et al., 2012). Because of a focus on business development, private incubators are often more sector specific than public incubators (Frenkel et al., 2008). This makes private incubators less likely to change or create institutions due to a lack of access to divergent knowledge from different sectors. Public incubators are mainly focused on economic development in regions, for which they depend on public funds (Barbero et al., 2012). This means that public incubators could be more connected to the ecosystem and more motivated to change or create institutions. The resources provided by public and private incubators also differ. Public incubators focus more on tangible assets and market commodities whereas private incubators provide more intangible resources but also financing, focusing more on the short term (Grimaldi & Grandi, 2005). This short-term focus is evidence that private incubators are likely to be less concerned with the well-being of their ecosystem.

This section has outlined the central concepts of this thesis. The main objective is to research when and how incubators act as institutional entrepreneurs and if their approach varies per type of institution. There are two important factors influencing institutional entrepreneurship by incubators. The nature of the incubator is important, as there are clear operational differences between public and private incubators. The other important factor is in the institutional context, which differs per ecosystem. The approach needed to successfully change institutions is therefore likely to vary between ecosystems.

3. Methodology

This thesis was designed as a qualitative multi case study. A case study highlights key components of a specific case, giving an up-close view of the topic. This study has examined seven different ecosystems: Amsterdam, Utrecht Rotterdam, Delft, Eindhoven, Nijmegen and Wageningen. Between these ecosystem, there was a variety in the degree of institutionalization allowing for insights in how this affects institutional entrepreneurship. Some of the ecosystems have a reputation of being quite specialized (Wageningen in agro-food, Eindhoven in high-tech, Delft in engineering) whereas other ecosystems are more diverse and lack a clear focus (Amsterdam, Utrecht, Nijmegen). This provided opportunity to gain more insights in how divergent information and heterogenous fields function as enabling conditions for institutional entrepreneurship. It was the intention to study a public and private incubator in each ecosystem, but this was not always possible due to the lack of one of these in some ecosystems. In some ecosystems other relevant actors were interviewed. To augment the data, the researcher also visited the start-up summit event and informal events at incubators.

3.1 Data gathering

The incubators were approached either by email, by meetings on events or by visiting the incubator. Snowball sampling was also used, with interviewees being asked for contact details and introductions to other incubators. Data was collected by doing interviews with key actors in the studied ecosystems. Managing directors and program leaders of incubators are the most important actor group as they have the best picture of the goals and activities of the incubator. Other actors who can provide insights in the effects of incubator activities are also studied. Examples of these actors are technology transfer office liaisons, staff of dedicated startup platforms and governmental actors. Representatives of national startup platforms such as Startup Delta of Dutch Startup Association were not approached, since incubators state that there is little interaction with these platforms. In total 24 people were interviewed in this study. 22 of these people participated in a semi-structured interview, lasting between 24 and 70 minutes. Six interviews were done by telephone and fifteen face-to-face. Three respondents had no time for an interview, so they filled out a list of questions by mail. In the case of PortXL, two respondents filled out the questions together. A list of interviewees and their affiliated organization can be found in table 1.

Table 1: List of interviewees

City	Organization	Nature	Interviews conducted
Utrecht	Utrechtinc.	Public, founded and funded by university and local government	Staff U1 MD U2
	Holland Startup	Private, founded by entrepreneurs, funded by local government. Takes no equity in startups.	MD U3 Staff U4
	Studentsinc.	Public, founded and funded by university and university of applied sciences	MD U5
	Municipality Utrecht	Local government	Civil servant U6
Delft	Yes!delft	Public, founded and funded by university, local government and TNO	Staff D1
	Municipality Delft	Local government	Aldermen D2
Nijmegen	Mercator	Public, founded and funded by university	Staff N1
	StartupNijmegen	Private, founded by private entrepreneur, funded by local government. Takes no equity but startups pay rent for co-workingspace	MD N2
Rotterdam	ECE	Public, founded by university, funded by university and local government	Staff R1
	PortXL	Private, founded by entrepreneurs, takes equity in startups or receives interest over provided loans	MD + staff R2
Wageningen	StartHub	Public, founded and funded by university	Staff W1
	Startlife	Public, founded and funded by university	Staff W2
Amsterdam	ACE Incubator	Public, founded by university, funded by university and local government	MD A1 Staff A2
	IXA	Technology transfer office universities	Staff A3
	Rockstart	Private, founded by entrepreneurs, takes equity in startups	Staff A4
	StartupBootcamp	Private, founded by entrepreneurs, takes equity in startups	Staff A5 Staff A6
	StartupAmsterdam	Governmental platform	MD A7 MD A8
Eindhoven	HightechXL	Private, founded and funded by corporates	Staff E1

3.2 Interview strategy

The interviews were done following a semi-structured interview guide. Semi-structured interviews start from a basic structure, which should make sure all relevant concepts and topics are covered. However, the interview guide consists of open questions and leaves room for improvised follow-up questions, to allow for novel insights. This gives respondents the ability to give detailed and original answers, which helps provide an in-depth picture of the concepts. Each interview starts with an introduction where the goal of the research and the interview is explained. The first part of the interview serves mainly for the interviewee to introduce himself and consists of some personal questions. In the second part the concepts of this study are investigated. After the interview is concluded, the interviewee is asked if he can recommend any other interviewees. The interview guide

can be found in Appendix I. The order and formulation of questions in this guide is not strict. The main goals of the interviews were, first to find out which institutions are changed or created by incubators and how they are involved with maintaining possible changes and second, which conditions enable incubators to influence their institutional context. The guide is updated throughout the research, as novel insights form interviews are encompassed in the rest of the research.

3.3 Data analysis

The interviews are fully recorded and transcribed, for which all interviewees gave permission. The transcripts are analyzed using the Gioia method, the software program NVivo is used during this process. The Gioia is a coding scheme used to increase the rigor of qualitative research (Gioia, Corley, & Hamilton, 2013). First step of this analysis involves creating first-order concepts. This means that each sentence or statement is coded in such a way that the code represents the essence of the statement (Gioia et al., 2013). The first-order concepts stay faithful to the terms of the interviewee and little attempt is made to categorize these concepts. The number of first-order concepts therefore becomes quite large. This study has around 275 first-order concepts. Between these concepts, similarities and differences are sought, and the concepts are sorted into second-order themes. These themes are more related towards the theory and aim to translate the terms of the interviewee to the theoretical concepts studied (Gioia et al., 2013). It is possible for one first-order concept to be connected to multiple second-order themes. This study has 29 second-order themes. At multiple times during the analysis, previous transcripts were re-evaluated to see if any concepts has been missed. This increases the validity of the research. Furthermore, concepts and themes found in initial interviews were discussed with other interviewees, to increase the reliability of the research. Finally, the second-order themes are translated into aggregate dimensions. These dimensions are the main concepts studied in this study: normative institutions, regulative institutions, cultural-cognitive institutions and enabling conditions for institutional change. This method provides a structural way to translate the comments of the interviewees to the main concepts of this thesis and help answer the research question. An overview of concepts and themes found and the quotes they are based on can be found in table 2.

Table 2: Concepts and themes related to types of institutions

Example quote	First-order concepts	Second-order themes
Normative institutions		
'Hard work obviously, being open to feedback, criticism and input. Learning from other startups.' (U4) 'We want guys that are able to really work and have the vision and passion to make impact.' (R1)	Expectations in traits and behavior of incubatees	Behavior of startups wanted by incubator
I try to select on intrinsic motivation, you have to really want, otherwise you are no use to me.' (U5) 'We want them to have existing customer relations and we want the founders-team to be right.' (A6)	Selection criteria for incubatees	Behavior of startups wanted by incubator
'We also have started doing validationlabs internally at corporates to stimulate innovation there. We are an expert in that area.' (D1)	Incubator to corporate	Corporate relationships
If we see that a startup is not contributing at all they will start noticing that we don't contribute to them as well. Because why should we put a lot of hours in those startups if they don't contribute to the ecosystem. (U1)	Sanctions for incubatees	Behavior of startups wanted by incubator
Regulative institutions		
'I believe policies only work if they are created bottom-up. I don't believe in board members sitting in a room somewhere, saying: yeah this is great.' (U3) 'We can use our initiatives to show what works and what doesn't, which if often a problem for people leading the university' (A1)	Bottom-up policy creation	Information sharing on policy between governments and incubators
'Not that much, I do have some contact with the municipality to fulfill requests from our startups, like storing large agricultural equipment' (W1)	Contact with government about practical matters	Information sharing on legislation between governments and incubator
'There is an idea that it would be idea, but the focus is not on doing that. The focus in on helping the startups.' (A4) 'It's not the goal of the incubator to solve smart city challenges for the municipality' (A2)	Changing regulations is not the focus of the incubator	Core activities of incubator
'Lobbying to The Hague does happen via Startup Delta, but it is not very high on the agenda. I don't feel that there is a lot of attention for national policy and legislation' (A1)	Changing regulations is not the focus of the incubator	National lobbying

'So, we want to see money on the table, for StartupUtrecht, for Utrechtinc., for DutchGameGarden. We think it's the right moment now. We you translate that back to the past, we would individually approach the government. Right now, we've said let's do it together. Let's make our wishes clear. ' (U2)	Lobbying for policies	Unionizing of incubators
'Maybe they are too busy with internal activities. That is something we are too' (W1)	Incubator too busy with internal activities	Core activities of the incubator
Cultural-cognitive institutions		
'I think a culture will change when people get a different mindset because they become aware of something they were not aware of before.' (U1) 'It's about creating a culture of entrepreneurship, which we really try to show.' (W1)	Culture in ecosystem	Building a startup ecosystem by incubators
'you have to imagine that we now have 400 partners. All VC's, all universities, all accelerators are involved with StartupAmsterdam' (A7)	Stakeholders involved with StartupAmsterdam	Building a startup ecosystem by incubator
'What I want, is that we are appreciated by education institutes and local government instead of them following their own agenda' (N2)	Role of incubator in shaping and guarding the ecosystem	Building a startup ecosystem by incubator
'There are not that many other accelerators here. There are some initiatives, but they are all very young' (E1)	No other incubators to collaborate with	Bottlenecks for collaboration
'To me, we have reached the point that the facilitating business for startups in Holland starts to be bigger than the startups themselves. In my opinion, startups are over the top.' (U2)	Startup-Hype	Rise and fall of startup-hype
'The risk you see there is that having a startup becomes a lifestyle, and that is has nothing to do with building a business' (A1)	Wannapreneurship	Rise and fall of startup-hype
'Since there is no business model in changing culture, it is difficult to find people that want to splash the resources against that'. (U3)	Resources in incubators	Finance in the ecosystem

4. Results

This chapter explores to what extent incubators change normative, regulative and cultural-cognitive institutions. For each type of institution is discussed what the vision of the incubators on the institution is and which institutions are desired, and how this differs between private and public incubators and per ecosystem. Also, per type of institution is discussed which conditions enable institutional entrepreneurship and how incubators implement the institutional change. A summary of which institutions are changed or created by incubators can be found below in table 3.

Table 3: Overview of institutional change by incubators

Type of institutions	Created/changed institutions	When are incubators enabled to change institutions?	How do public incubators change these?	How do private incubators change these?	Differences between ecosystems?
Normative	Desired behavior of incubatees	Always, incubators have high status in the eyes of incubatees.	By selection process at the entry of the incubator and through coaching and mentoring. Incubators use resources to do this coaching and mentoring.	By selection process at the entry of the incubator and through coaching and mentoring. Private incubators have some of the strictest selection criteria shown in the results. Incubators use resources to do this coaching and mentoring.	No, incubators across ecosystems all change these institutions in a similar way.
	Startup mindset in corporates	When incubators have close access to corporates in their network	Public incubators have a corporate network which mainly consists of support services or mentors. Implementing startup methodologies is only seen in Yes!Delft.	Private incubators have a vision on how corporates should interact with teach them methodologies. Corporates can brand themselves with the incubators' logo. Human resources are used by the incubator.	Yes, creating change in corporates is seen in ecosystems with extensive corporate networks.

	Sanctions for incubatees	Always, incubators have high status in the eyes of incubatees.	No formal sanctions, uncooperative startups receive less input and coaching. Human resources are used for coaching.	No formal sanctions, uncooperative startups receive less input and coaching. Human resources are used for coaching.	No, incubators across ecosystems all change these institutions in a similar way.
Regulative	Legislation on the national level	Not, incubators have no connection to national governments	Public incubators do not actively change national regulations, they leave this to platforms such as StartupDelta and Dutch Startup Association.	Private incubators do not actively change national regulations, they leave this to platforms such as StartupDelta and Dutch Startup Association.	No, incubators across ecosystems share a position on national legislation.
	Legislation on the local level	Not often found, but legitimacy of incubator in the eyes of local government is an enabling condition.	It is not the core focus of incubators, but they involved with practical limitations such as test sites for drones and housing for equipment.	Fully private incubators are not involved with legislative challenges on the local level.	Removal of practical obstacles is found in Delft and Wageningen.
	Creating a policy agenda	In periods of political change, when incubators can lobby together and have status in the eyes of local government.	Public and private incubators lobby together to create a startup policy agenda. This is done in a unionized platform, primarily in election periods.		Yes, lobbying for policy agendas is found in institutionalized and diverse ecosystems.
Cultural-cognitive institutions	Startup Hype	Wantrepreneurship is observed by incubators in institutionalized ecosystems.	Public incubators try to warn their incubatees about the drawbacks of becoming a startup and about useless events and activities.	Private incubators try to bring more startups and partners to the ecosystem and try to differentiate their programs	Yes, the saturation and hype of startups is mainly found in institutionalized ecosystems.

			by focusing on niches.	
Collaboration on culture between incubators	Divergent knowledge is an important enabler for concrete collaboration.	Public incubators often talk with other public incubators and are open to sharing insights. Concrete collaboration is scarce.	Private incubators are more focused on their own program and consider other private programs competition. There are some collaborations between private and public incubators.	Yes, concrete collaboration is only found in ecosystems with multiple established incubators.
Involvement of universities and local government in culture	Incubators collaborate with actors most involved with entrepreneurship and entrepreneurial knowledge.	Public incubators try to involve universities and local governments in the creation of an entrepreneurial culture. Incubators mobilize allies but not resources.	Private incubators are not involved with universities and local governments. They do try to include corporates in the startup ecosystem. Incubators mobilize allies but not resources.	Yes, it depends on the source of knowledge and entrepreneurship which actors are most important in changing the entrepreneurial culture

4.1 Institutional change

4.1.1 Normative institutions

4.1.1.1 Vision of incubators on normative institutions

Public and private incubators have unanimously clear expectations of the behavior of their incubatees. This behavior entails specific character traits of the entrepreneurs, but also how the startups behave within the ecosystem. Four main types of behavior can be distinguished: Intrinsic motivation, an open mindset, participation in the ecosystem and perseverance. Intrinsic motivation is self-explanatory, entrepreneurs need to have a drive to make big impact on society and be willing to put in effort needed achieve this. Incubators value a strong work ethic and stress that building a start-up demands more work input than a job at a corporate firm (U4). An open mindset requires entrepreneurs to be open to coaching, both from incubator staff but also from other entrepreneurs. An important aspect here is

modesty, entrepreneurs who believe they have nothing to learn and already have a unicorn product, are not appreciated by incubators (U4, A4). Participation in the ecosystem means that entrepreneurs should not 'literally lock themselves in a box' (A1) but go out to participate in events and talk to other entrepreneurs. Incubators organize workshops for their incubatees and expect them to attend these workshops (D1, A6, E1). Finally, entrepreneurs need to show perseverance. This not only means persevering through setbacks and disappointment, but also keeping focused on important matters and not getting distracted by unproductive events and social meetings (U3, N2).

Sometimes incubatees continue to show unwanted behavior such as poor work ethic or unwillingness to participate at events and workshops. In response to this, incubators generally do not have a formal sanction, which is why this is classified as a normative institution. Instead, the incubators start showing less initiative towards the startup, giving other startups priority (U1, A4). This could lead to uncooperative incubatees being the last incubatees to receive an invitation to an event or generally receiving less coaching. Even Rockstart, who takes an equity stake in their startups says 'this naturally and automatically happens a bit. Because we want to help and do things, but if nothing comes in return we maybe put less effort in or stop chasing the person' (A4). Both public and private incubators do not like to strictly force and push startups to behave in a certain way, saying motivation and participation are difficult or perhaps even paradoxical to create by applying external pressure, as is shown by this quote: 'I am not going to push and pull on entrepreneurs, that is completely against the entire idea of entrepreneurship' (U5).

Incubators with a large corporate network are also involved with implementing startup methodologies in corporate partners (D1, A5). These incubators are mostly private, but Yes!Delft also implements startup methodologies in their corporate partners. These corporate partners can function as customers or mentors to the startups. Incubators aim to change the behavior of the corporates to help them understand startups and to make them more innovative (A5).

4.1.1.2. When do incubators change normative institutions?

When attempting to change behavior in incubatees or sanction them, the results show no differences between public and private incubators. However, incubators have a high legitimacy in the eyes of incubatees, which enables them to change their behavior. When attempting to create a startup mindset in corporate partners, it is important that these corporates are in the network of the incubator. The position of the incubator in the network and the heterogeneity of the field are important enablers for incubator that want to change this institution, as corporates need to be active in the field and closely tied to the incubator.

4.1.1.3. How do incubators implement normative institutional change?

Besides unanimous agreement on the desired behavior in startups, incubators are also in agreement on how to achieve this kind of behavior. Implementing this institution is done through extensive contact and selecting. Incubators have selection criteria for startups, both for their product and the entrepreneurial team. The desired kinds of behavior in entrepreneurs are important in assessing the entrepreneurial team and could be a reason not to incubate the startup. However, the strictness of this selection depends on the phase of the startup life cycle the incubator is active in. Some incubators such as ECE, StartHub and Studentsinc, focus on the pre-incubation phase and do not require their entrepreneurs to have an actual product or business model. Their goal is to teach entrepreneurial competences and help aspiring entrepreneurs with validating their product ideas. These incubators are not very strict in their selection, saying 'everyone should be welcome' (W1, U5). Incubators active in the incubation or acceleration-phase such as StartupBootcamp, Yes!Delft and Rockstart, have stricter selection criteria and are more prone to reject startups based on the behavior and traits of its

team. Furthermore, these incubators also have criteria related to the product, such as a minimal viable product (MVP), prototype or a launching customer. Additionally, international incubators Rockstart and StartupBootcamp expect their incubatees to move to the Netherlands and immerge in the local ecosystem (A4, A5). Private incubators generally have stricter selection criteria than public incubators. Once a startup has entered the incubator, the desired behavior is achieved through extensive contact. This contact can be in an informal setting, through discussions and talks by the watercooler. But behavior is also shaped during workshops and seminars which entrepreneurs are expected to attend. Incubators have a clear vision on what behavior they want from incubatees and communicate this vision to the incubatees. Incubators provide resources to change this institution as human resources are important in coaching and selecting incubatees. Incubators do no mobilize allies to change behavior of startups, as normative institutions are internal to the incubator.

Creating a startup mindset in corporates is achieved by giving workshops at corporates or by including corporate teams in the incubator program alongside startup teams (D1), both of which require resources from the incubator. Private incubators also incentivize corporates to become involved with incubators by allowing them use brand themselves using the incubators' logo and name (A4). This increases the legitimacy of incubators to corporates, as corporates can use incubators to get close to innovation but also use their affiliation with incubators as a PR-tool. Incubators once again have a clear vision on how corporates should behave when working with startups, and they try to mobilize corporates to become aware of this as well.

4.1.2. Regulative institutions

4.1.2.1 Vision of incubators on regulative institutions

Changing regulations in governments is not the core focus of incubators, their main goal is to help startups grow and to help entrepreneurs gain entrepreneurial competences (A2, A4, R1). Therefore, incubators do not believe it is their responsibility to remove legislative challenges in governments (A2, R2). Also, many legislative challenges can only be removed by the national government to which incubators do not have close connection. They rely on Startup Delta and the Dutch Startup Association to lobby to the national government and there is no frequent contact between incubators and these platforms (D1, A2, A7). On the local level, incubators are involved in removing regulative obstacles for their startups. The removal of practical obstacles mainly entails creating specific locations for startups. For example, Yes!Delft has approached the municipality for a testing ground for a drone startup (D1), whereas StartHub Wageningen has approached the municipality to find a storage location for large agricultural equipment (W1).

In Utrecht and Amsterdam, incubators are actively trying to create a startup policy agenda. A policy agenda qualifies as a regulative institution since it entails tangible institutions such as subsidies for incubators, startup in residence programs or a physical document containing action plans. Amsterdam currently has had a startup plan, supported and funded by the municipality since 2015 (A7, A8). This plan is executed by StartupAmsterdam. StartupAmsterdam is a platform supported by stakeholders from the ecosystem, which has a dedicated staff hired to execute the plan. The public ACE incubator is strongly involved with the policy agenda (A1, A2, A8). StartupBootcamp states they are also very involved. In fact, one of the co-founders of StartupBootcamp was a key initiator of StartupAmsterdam (A5, A7). StartupBootcamp stresses that building the Amsterdam, but also the entire Dutch ecosystem, is very important to them (A5). They do this by boosting the current players in the ecosystem, but also by attracting new talent to the ecosystem. However, A8 states that StartupBootcamp is less involved with the ecosystem than some of the local actors. Rockstart is less involved with startup policies. A4 stated that he hadn't heard of StartupAmsterdam and that the Rockstart program is their core focus in the ecosystem. Rockstart did receive a loan from StartupAmsterdam (A7), but their involvement is not as close as ACE or StartupBootcamp. In Utrecht a physical startup policy document does not yet exist, but attempts are made by incubators united in StartupUtrecht. The main objective of

StartupUtrecht is to acquire more resources for incubators. In Utrecht there is direct contact between incubator managers and governments, whereas in Amsterdam this contact goes via StartupAmsterdam (A1, A7, U2, U3, U5, U6). In Utrecht, public and private incubators are lobbying together to create an ecosystem. In fact, StartupUtrecht was founded by the directors of a private (U3) and public (U5) incubator.

4.1.2.2. When do incubators change regulative institutions?

From Amsterdam and Utrecht, we can identify when a startup policy agenda can be initiated. These observations are related to some of Battilana's enabling conditions. First of all, both cities have in common that the agenda is lobbied for by a union of incubators. Both StartupAmsterdam and StartupUtrecht represent multiple incubators which makes lobbying to the municipality more effective (U2, U5). StartupUtrecht and StartupAmsterdam are the central hubs in the network, whereas the incubators only cover part of the network (U2, A5). Furthermore, it helps if the incubators have a proven track record of successful startups, this increases the legitimacy and status of the incubator to the municipality (U1, U6). The municipality of Amsterdam and Utrecht are open to advice and lobbying from incubators because they see incubators as a successful source of economic growth and jobs (U6, A2). The municipality then often uses startups of incubators to show the innovativeness of the city, which increases the status of the incubator in the eyes of the government (U1, U6, A2, A5). This is also frequently seen in Delft (D1). A successful local startup can be presented in the media and politicians can claim this success, which is an incentive for politicians to invest in startup policy. The legitimacy of the lobby is also increased if the incubators provide research that supports the idea that startup policy helps create fast growing firms and economic growth, as this has been the case in both Utrecht and Amsterdam (U6, A7).

Another important aspect of creating a startup policy agenda is the timing. Both StartupAmsterdam and StartupUtrecht interviewees state that the period leading up to elections, and during the formation of a new city council coalition is the best time to lobby for new policies (U2, A7). It then also matters which political parties are forming the coalition (U6, U2). D66 and to some extent VVD are most eager to invest in startups (U6). Going further, the political affiliation and background of the alderperson for economic affairs is important. An alderperson with affinity for startups and entrepreneurship is more open to policy initiatives, this is also seen in other cities (D1, E1). These factors correspond with one of Battilana's (2009) enabling conditions: external shocks as crises, as changes in politics provide room for institutional entrepreneurship by incubators. Another important aspect is the individual characteristics of the people doing the lobbying. Obviously, charisma and charm are important (A7), but it also helps if lobbyists come from an entrepreneurial background and have a role in advisory councils such as an Economic Board (U2, U3). Finally, Utrecht and Amsterdam are the most institutionalized ecosystems in this study. Despite this, Utrecht and Amsterdam are the regions studied where incubators are most involved in changing regulative institutions. An explanation for this could be that despite the saturation in the ecosystem, the institutional order is not considered strict or extreme to the point where it constrains institutional entrepreneurship (A6, A7, A8).

4.1.2.3. How do incubators implement regulative institutional change?

Incubators that initiate a startup policy agenda have a clear vision on what this agenda should look like. Incubators work together to formulate a vision where governments should be involved with startups and provide financial resources to implement this vision. This vision is communicated with the government to convince them to support it. Incubators work together to promote their vision, so alliances between incubators are important. However, alliances with other actors to communicate a vision are not shown in the results. An explanation for this is that creating alliances costs resources,

which incubators are reluctant to direct towards external activities. Incubators have a limited amount of time and resources, and they are hesitant to direct these away from their core focus of helping entrepreneurs (E1, U3, W1). This is also the reason incubators rely on money from governments for executing a policy agenda.

4.1.3. Cultural-cognitive institutions

4.1.3.1 Vision of incubators on cultural-cognitve institutions

An important cultural aspect noticed by various incubators (A2, U2, U5, U6, W1, N2) is the rise and fall of the startup hype. During the economic recession around 2009 it became very popular to begin a startup, leading to a growing number of incubators and other startup support services. A culture therefore exists in which it is 'cool' to have a startup, leading to many entrepreneurs starting startups while lacking the drive, motivation and talent to do so. These so-called wantrepreneurs spend a lot of their time at events instead of working on their business. Some wantrepreneurs are also prone to 'incubator hopping', moving from one incubator to another gaining new funding to keep the startup alive without making a real effort to become a scale up (A4). Incubators want to keep the startup culture focused on building and scaling startups.

Another important cultural aspect are the efforts of incubators to create a culture of collaboration. Such collaboration can be between incubators both inside and outside their ecosystem, but also with governments and universities. This collaboration leads to the development of a startup ecosystem, which entails a culture and mindset in which startups thrive and on which other institutions can build. Incubators state they are all open to collaboration, but concrete collaborations between incubators are scarce. The results show concrete collaborations between Yes!Delft and Rockstart, ECE and StartLife as well as StartupBootcamp and ACE.

An important aspect of creating a startup culture by incubators is also the involvement of other actors in the ecosystem, particularly local governments and universities. There are differences in how much the incubators try to involve local governments and universities are in the startup ecosystem. Public incubators are trying to involve universities and local government, as they to use their track record to demonstrate that a strong startup culture is helpful in creating economic growth. Fully private incubators are less involved with local governments and universities. For example: in the collaboration between ACE and StartupBootcamp all meetings with universities and the local government were handled by ACE because the commercial nature of StartupBootcamp makes it difficult for universities and local governments to get involved (A8). Private incubators do have strong corporate networks and partners which they try to include in the ecosystem.

4.1.3.2. When do incubators change cultural-cognitive institutions?

Economic crises are an important enabling condition for cultural-cognitive institutions. The results show that the economic crisis of 2009 led to an increase in startups and entrepreneurship, because it was difficult to get a job at a corporate firm. This increase of entrepreneurship led to wantrepreneurship and the startup hype, which was directly enabled by economic crises. Economic circumstances also influence the involvement of governments in startups, as interviewees state that government are more willing to invest in and work with incubators during times of economic prosperity.

Concrete collaborations between incubators in some cities do not occur because other incubators are absent, or they are too small or young to be considered as a useful partner (D1, E1, W2). A diverse, institutionalized ecosystem with multiple developed incubators is therefore an important enabler for

collaboration. Another explanation for the lack of concrete collaboration is that setting up takes time and effort incubator staff would rather use for running the incubator (N2, U3, U4, A4, A6). Incubators are reluctant to dedicate resources towards external activities, they rather use resources for internal activities. Also, collaboration requires incubators to give up control and terminate parts of their own program (A2). Furthermore, governments are not eager to see their cities' incubator, which is party used to showcase the cities' innovativeness, work together with other incubators. Competition between cities is a big part of governments not stimulating collaboration between incubators (U2, E1).

Despite limited concrete collaboration, there is an open culture between incubators, as public incubators state they often talk and visit each other to share insights (W2, N2, D1, U2). Because of the open culture, Incubators can obtain divergent information which can come from different sectors. Since divergent information is an enabling condition for institutional entrepreneurship (Battilana et al., 2009) it is interesting to note that there are differences in divergent information between ecosystems. Amsterdam and Utrecht have diverse knowledge from a variety of sectors, which is considered crucial (A8, U6). There are also ecosystems that are driven by specialized corporates or a university: Wageningen (Agro-food), Delft (engineering) and Eindhoven (high tech). The incubators in these ecosystems are also specialized in these sectors and possess crucial technical and market knowledge on how to help startups in these sectors. Because of this specialized knowledge, these incubators do not worry about talent migrating to the Randstad (W1, E1). This is a concern in cities less specialized such as Nijmegen and Groningen (N1, N2, E1). The specialized incubators do admit that there is a lack of knowledge in their ecosystem on complementary services such as marketing and communication (W1, D1).

The involvement of local government and universities also differs between ecosystems. The results show that incubators try to change culture with the actors most involved with entrepreneurship in their ecosystem, which varies per ecosystem. In ecosystems where entrepreneurship is mainly done with specialized knowledge from universities and research institutes (Delft, Wageningen) the government is generally less involved with influencing the culture in the ecosystem. Particularly in Wageningen, the government is not involved with entrepreneurship, but the university is (W1, W2). W1 states that this involvement in a direct result of national government decreeing that valorization should be a third pillar of the university, which is also supported by A3. This once again shows that external shocks and crises are an important enabling condition (Battilana, 2009). In Eindhoven, incubators work with startups who use knowledge useful to large corporates (Philips, ASML), so they play a big role in the culture in the ecosystem (E1). In fact, Philips, ASML and the NTS-group were among the founding parties of HightechXL (E1). They did so because they felt startups were missing in the ecosystem, so they wanted to make the ecosystem more heterogenous by creating an incubator. In ecosystems were entrepreneurship is less dominated by a specific sector (Utrecht, Amsterdam, Nijmegen) incubators are more looking at the local government to bring actors together and create a culture of entrepreneurship.

4.1.3.3. How do incubators implement cultural-cognitive institutional change?

Incubators communicate their vision on preventing wantrepreneurship similarly to the methods described in sector 4.1.1.3. Wantrepreneurs are often warned by incubators about the effort needed to succeed, and if the unwanted behavior continues, they receive more passive coaching like the process described in paragraph 4.1.1.1. In the long run, interviewees are convinced that poor incubators, events and startups will die out (A1, A2), so they are more passive in changing these institutions than they are in changing normative institutions. Incubators do not mobilize allies to change this institution as they try to deal with wantrepreneurs on their own.

Incubators try to formulate a vision on what an open culture should look like. For example, U3 stated that when founding StartupUtrecht, culture was the biggest elephant to tackle. Sometimes incubators disagree on this vision (U5) and they try to reach agreement by creating narratives and finding allies in other incubators. When trying to involve other actors in an open culture, alliances are important. Incubators try to create alliances with actors most involved with entrepreneurship in the region. However, incubators find it difficult to invest resources in these alliances because they want to direct those resources towards internal activities. This is also the case for public incubators, who receive public funding to build startups, so they feel they cannot use public money for other purposes. Private incubators also direct resources towards building startups, because startups will be their source of income for the incubator.

5. Conclusion

This study concludes that incubators do act as institutional entrepreneurs, and that the degree in which they so do differs per incubator, per ecosystem and per type of institution. An overview of conclusions can be found below in table 4.

Table 4: Overview of conclusions on institutional entrepreneurship by incubators

Type of institution	Institution	Do public incubators function as institutional entrepreneurs?	Do private incubators function as institutional entrepreneurs?	Differences between ecosystems?
Normative	Behavior of incubatees	Yes	Yes	No
	Startup-mindset in Corporates	Once	Yes	Yes
	Sanctions for incubatees	Yes	Yes	No
Regulative	National legislation	No	No	No
	Local legislation	Yes	No	Yes
	Policy agenda	Yes	Yes	Yes
Cultural-cognitive	Startup-Hype	Yes	Yes, but less than public incubators	Yes
	Collaboration on culture between incubators	Yes, mostly informal	Yes, mostly formal	Yes
	Involvement of other actors by incubators on culture	Yes, with universities and governments	Yes, more with corporate partners	Yes

From table 4 can be observed that no differences between public and private incubators were found in normative institutions internal to the incubator or in regulations on the national level. Table 4 also shows the strongest differences in institutional entrepreneurship between public and private incubators in how they change cultural-cognitive institutions. Public incubators are trying to involve universities and governments whereas private incubators are working more with corporate partners. Also, there is more informal contact and information sharing between public incubators. Private incubators do have formal collaborations with public incubators, but they have less informal contact and do not work together with other private incubators. The results show that public incubators also work closer with governments in removing legislative challenges for startups, private incubators do not do this. Private incubators are on the other hand, more involved with changing behavior of their

corporate partners, teaching them startups methodologies and involving them in their incubation programs. This study therefore concludes that public and private incubators change institutions differently when the institutions affects their ecosystem. When the institutions are internal to the incubator or on the national level, there are no differences between public and private incubators. Furthermore, table 4 shows that for regulative and cultural-cognitive institutions, external to the incubator, there are differences between ecosystems in how incubators change these institutions. No differences between ecosystems were found for normative institutions internal to the incubator or for institutions on the national level.

This study also creates insights in the conditions that enable institutional entrepreneurship. Based on the results, external shocks are an important and effective enabling condition for changing regulative and cultural-cognitive institutions. Changes in both national and local government policy and government coalitions provide room for institutional change. Furthermore, economic crises also influence the entrepreneurial culture in the region and provide room for incubators to influence this culture. Furthermore, the results show that the two most institutionalized ecosystems, Utrecht and Amsterdam, are the ecosystems where incubators are most active in changing regulative institutions. Explanations for this are that these incubators have more access to allies which help them change institutions. Furthermore, an institutionalized field is more visible to local governments, corporates and universities, increasing the legitimacy of the incubators that want to change institutions. Another explanation lies in the diversity of Utrecht and Amsterdam. These cities have diverse universities and many sources of entrepreneurship which provide divergent viewpoints on how the ecosystem should develop. This study therefore concludes that incubators in a heterogenous, institutionalized field with access to divergent information are more enabled to become institutional entrepreneurs.

This study also gained insights in how incubators change institutions when the opportunity for change arises. Incubators have a clear vision on what the institutional context of the ecosystems should look like. In all ecosystems, incubators are found suitable organizations to implement a vision as they possess a high status in the eyes of other actors. This status originates from a good track record, which adds to the incubators reputation as a source of valorization and job growth. Furthermore, incubators also make excellent PR-objects to use to demonstrate the innovative capacity of the ecosystem. Furthermore, incubators generally take a central position in their networks since they interact with many different actors. This central position provides them with the power to change institutions. It also helps if incubators unionize themselves in a platform, which voices their combined wishes to other actors and then functions as the central hub in the network. When looking at the implementation of a vision, incubators are reluctant to spend resources on external activities, meaning they rely on governments and universities to provide resources used for regulative and cultural-cognitive institutional entrepreneurship. Incubators prefer to dedicate their resources towards internal activities such as changing behavior of startups. When changing external institutions, incubator do look for formal and informal alliances with other incubators, governments, universities and corporates. This leads to the conclusion that incubators mobilize financial and human resources when changing normative institutions and mobilize allies to change regulative and cultural-cognitive institutions.

6. Discussion

6.1. Limitations

As with all studies, this study has some theoretical and methodological limitations. First, there is an uneven distribution in this studies' sample of interviewees. Private incubators are underrepresented in the sample because the Netherlands only have two purely private incubators: Rockstart and StartupBootcamp. These are the only two incubators found in the Netherlands that take an equity in their incubatees. PortXL also has a possibility to get equity in their startups, but their startups can also opt for a loan. There are other incubators that are started by private entrepreneurs, but these incubators are all partly funded by public funds. Also, Rockstart and StartupBootcamp are international organizations, with programs in multiple countries. Differences between these incubators and other incubators might therefore also be attributed to their international nature and not just to their private nature. However, since both Rockstart and StartupBootcamp are from Amsterdam, there are results of how private and public incubators function in this ecosystem.

A second limitation is that there is an uneven distribution between the studied ecosystems. Utrecht and Amsterdam are relatively overrepresented in terms of interviews. This is partly because these were the initial ecosystems in the scope of this study, but also because these ecosystems contain the highest number of incubators. Incubators in other cities stated that there were no other noteworthy incubators in their ecosystem, which was supported by web searches done by the researcher. However, the incubators that were studied were very cooperative and open, so a comprehensive view of the ecosystem was still obtained.

There is also a definitional limitation in the sample, as not all incubators call themselves an incubator. Besides incubators, some studied organizations call themselves an accelerator or a venture builder. These organizations mainly differ in the phase of the startup life-cycle on which they focus and timespan in which they support the incubatees. Some organizations accept entrepreneurs with only an idea and spend up to 5 years developing this idea into a product. Other organizations accept entrepreneurs with an MVP or prototype and accelerate this idea over the course of 3 to 6 months. However, these definitional differences do not greatly influence the results as the final goal and the means to achieve this goal are very similar. All organizations aim to help entrepreneurs develop a successful startup with a combination of workspace, workshops & advice, and network access.

A suggestion for a research design which mitigates these limitations would to be do a cross-country qualitative study on incubators. The suggestion would be to study StartupBootcamp and/or Rockstart in each city where they have a program and compare them to a public incubator or accelerator also active in this city. This would provide more data on private incubators and also remove some of the definitional disparity, as all studied organizations would be an accelerator from the same organization. This research design shows if StartupBootcamp or Rockstart act differently in different cities which also provides additional insight in the effect of the ecosystem on the activities of the accelerator. Since each ecosystem would have a private and public incubator, such a study would also be suited to provide additional insights in the differences between private and public incubator.

6.2. Theoretical contributions and avenues for further research

In terms of academic contributions, this study has shown that incubators act as institutional entrepreneurs, and that the influence of the ecosystem and the nature of the incubator differs per type of institution. The results show differences between public and private incubators in how they change external institutions, further research on institutional change should acknowledge these

differences. This study found that private and public organizations mobilize different allies, further research could focus on differences in how public and private organizations create their vision and their narrative. Furthermore, this study has brought some initial insights in how the nature of the ecosystem affects institutional entrepreneurship by incubators. When incubators change institutions in their external ecosystem, it matters how diverse and institutionalized this ecosystem is. This study found that private incubators are less connected to the ecosystem than public incubators and less involved with changing regulative and cultural-cognitive institutions. However, some private incubators are much more involved than other. The role of the dominant actor in the ecosystem is particularly important for incubators who want to change entrepreneurs. An avenue for further research would be to look at the changes in institutional entrepreneurship during the growth of the entrepreneurial ecosystem. This study found increasing institutional change in institutionalized ecosystems, further research should look at how incubators institutionalize their ecosystem, and if their change tactics evolve over time.

In terms of enabling conditions, incubators all state that political shocks are effective enabling conditions for changing regulative institutions, which confirms existing literature. Status in the eyes of actors is also an important enabling condition for changing each type of institution. The status of incubators is partly coming from the central position in the network but also from a good track record. It is interesting to note that incubators most active in changing regulative and cultural-cognitive institutions specifically mention they are not the most central hub in the network. Network position of the incubator changes over time, comparing these changes to changes in institutions over time provides further insight in how network position affects institutional entrepreneurship.

Finally, the results of this study show that the way incubators change institutions differs per type of institution. Literature on institutional change should acknowledge the differences between types of institutions and account for this in further research. Tactics successful in changing normative institutions, might not necessarily be successful in changing regulative or cultural-cognitive institutions and vice versa. This study provides a foundation for further research, which could focus at the tactics needed to change regulative of cultural-cognitive institutions inside an organization or look closer at institutions on a national level. Testing for differences between types of institutions in other cases can provide a more general theory on change tactics per type of institution.

6.3. Practical contributions

In terms of societal impact, this study shows incubators which enabling conditions are important when they want to change institutions. The researcher recommends that incubators take advantage of political changes to create awareness of institutional opportunities. In such a time, it is helpful to work together with other incubators and to ensure the incubator has status in the eyes of policy makers. This status can be achieved by highlighting successful startups and bringing new jobs to the ecosystem. Furthermore, if incubators want to develop the ecosystem, is it important that they try to do this with the most important actors in the ecosystem. In diverse, heterogenous ecosystems the local government is an important actor to bring together the entire ecosystem and should be an important facilitator in the ecosystem. In ecosystem where there is a more dominant position of a university or a corporate, the government is less involved, and the ecosystem should be built with this dominant actor. Also, since incubators are unanimous in how they change or create behavior in their startups, the researcher recommends that any new incubator applies this method as well.

Governments and universities can also use this study to help incubators change institutions. In diverse ecosystems, incubators should operate together, and there is an important role for the government to provide resources for dedicated entrepreneurs working on developing the ecosystem. These dedicated entrepreneurs can operate from a platform where all the relevant stakeholders are also present, so all

the initiatives are created bottom-up. Besides resources, local governments can also support incubators by openly stating entrepreneurship and innovation are important to them and look to incubators as a source of innovation. Startup in residence programs and networks are ways governments can facilitate this. Since incubators need talented startups to deliver impact and create legitimacy, there is a role for universities in helping incubators scout for these startups. This can be by done by stimulating and rewarding students and staff that want to engage with incubators and help commercialize their knowledge.

7. References

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8. Appendices

Appendix I: Interview guide

Introduction

- Introduce researcher, research and goal of the interview.
- Ask for permission to record the interview.

Personal questions

- What is your function in this organization?
- What is your personal background?
    - Education, previous employment
- How long have you been active in this ecosystem?

Public/Private incubator

- What sources of income does this incubator possess?
- Who is the owner/owners of this incubator?
- Is the incubator accountable to another actor/organization?
- Does your incubator copy organizational changes from other organizations?

Regulative institutions

For incubators

- How is the contact with the local government?
- To what extent do you lobby with government of new legislation?
- Do you try to influence national legislation?
- To what extent do you create rules and guidelines in the ecosystem?

For non-incubators

- To what extent do incubators influence rules and regulations in this ecosystem?

Normative institutions

For incubators

- To what extent to you push people to become entrepreneurs?
- Do you expect certain behavior from your incubatees?
    - If yes, how do you create this kind of behavior?
- Do you expect certain behavior from your partners?
    - If yes, how do you create this kind of behavior?
- Do you often talk with your incubatees or partners about their activities and actions?
- Are there certain norms and values actors in the ecosystem have to adhere to?
    - Do you play a part in creating these?
- Do you sanction entrepreneurs that fail to live up to your standards?

For non-incubators

- To what extent do incubators inspire/push you to change your behavior?
- To what extent do incubators inspire/push your partners to change their behavior?
- Do you talk with incubators about certain norms and values in the ecosystem?

Cultural-cognitive institutions

- Is there a deeper culture of entrepreneurship in the region?
- How do you contribute to the local ecosystem?
- Do you contribute to such a culture?
    - If so, how?

Field-level conditions

- To what extent in this ecosystem institutionalized?
    - Are there many rules and regulations?
    - Is there a certain code of behavior? Or are there many different codes?
- Do rules and regulations vary between organizations?
- Do the actors in this ecosystem act in a different way?
- Do current institutions/or lack thereover enable you to change the current ecosystem?
- Do you feel the ecosystem is saturated?
    - Does this prevent you from further changing the ecosystem?

Social position

- Do you have partners/incubatees from many different fields?
- What gives the incubator legitimacy in the eyes of government, university of corporate?
- To what extent do have influence over other actors?
- To what extent do other actors listen to your opinion?
- Do you mobilize resources to implement institutional change?
- Do you try to gain allies and support when you try to implement institutional change?
- Do you think the ecosystem needs changing?

End of interview

- Thank you for your cooperation, do you have any further questions?
- Can you recommend any other promising actors worth talking to?