

**Challenges to the development of an entrepreneurial university ecosystem:  
The case of a Finnish university campus**

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## **Challenges to the development of an entrepreneurial university ecosystem: The case of a Finnish university campus**

### **Abstract**

The purpose of this study is to add to the literature on entrepreneurial university ecosystems by highlighting the ways in which academics engage or decouple in entrepreneurship processes and thereby in the emerging entrepreneurial ecosystem. The study extends our understanding of the emergence of the entrepreneurial university ecosystem by providing an in-depth analysis of a Finnish university campus that investigates how individuals' perceptions respond to the societal and institutional demands to foster entrepreneurship. The findings suggest that education and research are regarded as the highly institutionalized logics of universities and they tend to be maintained since more rewards are associated with them than are associated with the logic of entrepreneurial actions. These competing logics lead to conflicting interests and cause intentional and unintentional decoupling in the adaptation and implementation of entrepreneurial actions in universities.

### **Keywords**

Entrepreneurial ecosystem, entrepreneurial university, entrepreneurship, academic entrepreneurship, institutional theory

Entrepreneurial ecosystems have emerged as a concept for describing entrepreneurship in regions. The entrepreneurial ecosystems consist of a set of interdependent actors (Cohen, 2006; Spigel, 2017; Stam, 2015) that produces high-growth entrepreneurship, spin-offs and start-ups, as well as new jobs, through entrepreneurial activities (Cohen, 2006; Stam, 2015). In the university context, an entrepreneurial ecosystem echoes the Triple Helix concept, in which academia, state and industry form tri-lateral networks and hybrid organizations, the actions of which are often encouraged, but not controlled, by the government (Etzkowitz and Leydesdorff, 2000; Ranga and Etzkowitz, 2013).

Universities have become important contributors to the development of entrepreneurial ecosystems through the research and education of a skilled labour force. Besides providing knowledge and human capital (students and staff), universities promote entrepreneurial culture, and provide and act as a catalyst for start-ups and spin-offs (Cohen, 2006; Guerrero et al., 2016). Despite this acknowledgement, relatively little is known whether universities should contribute to the entrepreneurship and, if so, how (Davey et al., 2016).

Stam (2015) suggests that the focus of entrepreneurial ecosystems is on the individual entrepreneur rather than on the enterprise. A limited amount of attention has been paid to the entrepreneurial individuals that form the centre of the ecosystem (Stam, 2015), as well as to the antecedents of the initial processes that lead to entrepreneurship (Brown and Mason, 2017). Additionally, entrepreneurial ecosystem literature lacks information on what kind of formal and informal institutions and relations matter in various stages of ecosystem development (Alvedalen and Boschma, 2017).

In Finland, entrepreneurship promotion has been high on the Ministry of Education and Culture's agenda for a decade. However, the ministry can only promote entrepreneurship policies through non-binding incentives and steering. Therefore, universities are not rewarded for the successful implementation of entrepreneurial actions, like they are for research and education. Furthermore, the ministry has established different working groups and initiatives for preparing reports and recommendations, but Finnish universities enjoy strong autonomy in how they utilize such reports (Lahikainen et al., 2018).

This study focuses on investigating academic individuals' engagement in entrepreneurial actions in the campus of two Finnish universities (one of which is a university of applied sciences) in Lappeenranta, eastern Finland. The aim of the study is to find out how individuals can identify their roles in participating in the academic

entrepreneurship processes in the entrepreneurial university ecosystems. Studying individuals' perceptions, which have been overlooked by previous studies, is important since entrepreneurial ecosystems are largely based on individuals engaging in entrepreneurial action, as well as providing guidance to support emergent processes. In entrepreneurial university ecosystems in particular, academics can be seen as key individuals whose inventions serve as a seedbed for high-growth companies and start-ups. The research question we address is: How do participants in entrepreneurship processes engage with the emerging entrepreneurial university ecosystem?

This paper contributes to the literature on entrepreneurial university ecosystems by illustrating a case that highlights the ways in which academics engage or decouple in entrepreneurship processes and thereby in the emerging entrepreneurial ecosystem. We continue from the themes raised by Pinheiro et al. (2015) by showing that even if a tendency to decouple societal engagement from universities' core activities (namely teaching and research) exists – for example, due to lack of binding incentives – academics are strongly motivated to provide a meaningful contribution to society. Second, this study provides new insights into the importance of the cognitive and normative influences that guide individual action in entrepreneurial activities (rather than university regulations, as discussed by Abreu et al. [2016]). This study shows that the engagement or decoupling of individuals in

entrepreneurship depends on two factors. The first factor is how individuals perceive their roles in the entrepreneurship processes. The second factor is whether they interpret institutional demands as complementary or counterproductive to their academic work

We use institutional theory (Scott, 2014) as a theoretical background for the study in order to offer a framework with which to investigate both interactions in an institutional context and individual behaviour. The study is based on an institutional logics approach and on the micro-level cognitive-cultural elements of institutional theory (Thornton and Ocasio, 2008).

In the university context a wide description of entrepreneurship is commonly used, meaning that the entrepreneurship approach includes the entrepreneurial mind-set and a skill set for entrepreneurs, resource providers, suppliers, customers and policy makers, in addition to starting up new businesses (Greene et al., 2010). This study applies a narrow description of entrepreneurship, which echoes the concept of academic entrepreneurship, which in turn refers to the commercialized outcomes of academic research (Grimaldi et al., 2011). Consequently, the results of this study reflect the perceptions of academics regarding academic entrepreneurship. Therefore, other aspects of entrepreneurship (for example entrepreneurial teaching and learning, and student entrepreneurship) are left outside this study.

This paper is organized as follows: first, we introduce the theoretical framework. Second, we present the research design. Third, we describe the findings of the study. Finally, we conclude by discussing the findings and limitations of the study.

### **Theoretical framework**

The literature on entrepreneurial ecosystems agrees that the ecosystems build on combinations of cultural, financial, human, institutional and political factors within a region, aiming at supporting the development and growth of start-ups and encouraging nascent entrepreneurs and other actors to start, fund and assist high-risk ventures (Spigel, 2017). Key success factors when establishing a sustainable entrepreneurial university ecosystem include, for example, a strategic view by the management, long-term commitment on all levels, sponsors and collaborators within and outside the university, appropriate organizational infrastructure and substantial financial resources (Rice et al., 2014). Figure 1 illustrates the main elements of the entrepreneurial university ecosystem, showing its connectedness to regional stakeholders. In Figure 1 (modified from Miller and Acs, 2017) the university ecosystem is presented within a dotted line, describing the openness of the entrepreneurial university ecosystem.



**[Insert Figure 1.]**

*An entrepreneurial university*

The entrepreneurial university mission is built on the academic tasks of research and education, with entrepreneurship having been introduced as a third element during the last two decades (Goldstein, 2010; Wissema, 2009; Kirby, 2006; Clark, 1998). The development of entrepreneurial universities has accelerated along with universities adopting new responsibilities for knowledge transfer and technological innovation (Martinelli et al., 2008; Bramwell and Wolfe, 2008). This is due to both the internal development of universities and external influences, such as the increased need for new knowledge in regions (Etzkowitz, 2003; Etzkowitz et al., 2000; Goldstein, 2010). The idea of an entrepreneurial university is described as providing an answer to increasing global academic competition and need for supporting economic growth with knowledge transfer (Wissema, 2009).

An entrepreneurial university can be defined as an organization that finds new solutions in order to address pressures and challenges that stem from an uncertain and unpredictable environment (Hannon, 2013). By addressing the pressures and challenges in an entrepreneurial manner, universities have a better chance to control their destinies and

become significant actors on their own terms (Clark, 1998). The development of entrepreneurial universities is conditioned by formal and informal external factors, and by internal factors that consist of resources and capabilities (Guerrero and Urbano, 2012). The external factors include, for example, the entrepreneurial organizational and governance structure, new teaching methods, rewards and incentives, the formation of strategic alliances with external stakeholders, technology transfer offices and business incubators (Goldstein, 2010; Guerrero and Urbano, 2012).

The attitudes of academics and students towards entrepreneurship are identified as the most critical factors that affect the development of entrepreneurial universities (Guerrero and Urbano, 2012). According to Kirby (2006, 600) central preconditions for the entrepreneurial university are academics believing in their entrepreneurial potential and a supportive atmosphere in the university. In university faculties, a strong commitment to the research and teaching missions exist. Therefore, it is challenging for university administration and governance to implement top-down reforms and restructuring in a way that leads to changes in the actual behaviour of faculty members (Goldstein, 2010). Additionally, designing uniform entrepreneurial models might lead to the increased power of central administration (Clark, 1998), which academics can understand as an attempt to

gain stronger control over their work and as increasing expectations for their performance (Pinheiro and Stensaker, 2014).

### *Entrepreneurship in an academic setting*

In this study, we concentrate on the sources of academic entrepreneurship in a broad sense that includes all kinds of spin-off creation, patenting, licencing and university–industry partnerships for commercializing research outcomes (Grimaldi et al., 2011; Bronstein and Reihlen, 2014). One way to categorize forms of academic entrepreneurship is by whether they are based on direct or indirect spin-off activities (with or without immaterial rights). Another is to categorize them by the type of business model (consulting, technology or product model) the enterprise is based on (Pilegaard, Moroz and Neergaard, 2010). From the individual point of view, academic entrepreneurs can be considered those who grasp internal and external opportunities with the aim of not only generating economic value for themselves or for their academic institutions, but also aiming for creating societal value and impact change (Mars and Rios-Aguilar, 2010). This refers to the idea of entrepreneurship as not just a business-oriented activity but also as a vehicle for societal change and serving the greater good (see, e.g. Rae, 2011, 46).

Most academics have traditionally seen their role as that of a teacher and researcher, not that of an entrepreneur (Etzkowitz, 2003). Academic culture and identity seem to conflict with entrepreneurship and entrepreneurial values at many levels in the university context (Kolhinen, 2015; Ylijoki, 2003, 2014). In particular, the gap between the priorities set by the university management and administration, and the faculties' actual behaviour can be broad (Goldstein, 2010). However, Clark (1998) already stated that including entrepreneurial activities into the context of a university does not necessarily conflict with the traditional academic missions. It can be seen more as a continuum and expansion of values.

However, fostering academic entrepreneurship requires acknowledging and aligning entrepreneurial and academic values (Kolhinen, 2015; Pittaway and Hannon, 2008). In particular, involving multiple university actors in venture creation (e.g. through entrepreneurship centres, laboratories and action-based education) enhances the entrepreneurial and academic roles of university scientists (Lundqvist and Williams Middleton, 2013). In order to respond to the growing expectations for fostering entrepreneurship, universities must face new challenges. They need to align the competing institutional logics and find a balance between research, education and entrepreneurship.

*The institutional context*

According to Scott (2014), institutions are comprised of three pillars: 1) the regulative pillar (for example, rules and incentives); 2) the normative pillar (for example, values and norms); and 3) the cognitive pillar (for example, beliefs and taken-for-granted elements). By its simplest definition, institutional logic is the way a particular social world works. The core assumption of institutional logics is that they embed the interests, identities, values and assumptions of individuals and organizations (Thornton and Ocasio, 2008).

The creation of legitimated formal rules and entities can lead to increased commitment or heightened expectations of internal participants and external stakeholders. It can also lead to a greater chance of failure if the activity is not mature enough or not integrated into the practical action of the institution. For this reason, institutionalization may lead to higher potential for an activity to survive, but may damage its original efficiency (Pittaway and Hannon, 2008). In order to resolve the conflict between ceremonial rules and efficiency, organizations can decouple the official structures and activities (Meyer and Rowan, 1977). This means the appearance of being an entrepreneurial university is kept up, while at the same time the university's core tasks (teaching and research) are protected by decoupling third-mission activities (Pinheiro et al., 2015), and in practice the most appropriate or efficient ways of working are allowed (Foss and Gibson, 2015). Even if the entrepreneurial practices are accepted, decoupling may occur in two distinct ways. First,

intentional decoupling can take place if the participants have a low acceptance level and passive approach to implementation, which leads to ceremonial adoption of the practice. This would mean that the organization would label itself *entrepreneurial* without its members changing their behaviour. Second, unintentional decoupling can occur when participants have a high level of acceptance but are less involved in the process and less conscious of the process. This means that some existing practices may be unintentionally retained, preventing entrepreneurial actions from being fully integrated in the day-to-day work (Gondo and Amis, 2013).

From the cultural-cognitive perspective, change and the required action of the organizational members require that organizational members need to internalize and value the desired action, and change drives need to be culturally supported (Palthe, 2014). Both normative factors and, in particular, cognitive factors have a stronger impact on the entrepreneurial activities of academics than the impact of university regulations. Individuals who are more inclined to become involved in entrepreneurial actions can act as ‘change agents’ in framing new institutional structures in their organizations by sustaining a collective identity and by bringing together the interests of different groups (Pachero et al., 2010).

Earlier studies show that universities that emphasize entrepreneurship in their strategic mission foster researchers' intentions to engage in spin-off creation and intellectual property rights, but not university–industry collaboration in general (Huyghe and Knockaert, 2015). This implies that by tradition, university–industry collaboration is based on personal relationships between industrial companies and individual departments or professors, and therefore, it was already an institutionalized practice prior to it being designated as universities' third task (Huyghe and Knockaert, 2015).

Entrepreneurial ecosystems emphasize the interaction between individuals and their institutional contexts, which results in entrepreneurial action that is based on the attitudes, ability and aspirations of individuals (Ács et al., 2014). This study further investigates the challenges of developing an entrepreneurial university ecosystem by studying academics' perceptions of fostering entrepreneurship in universities.

### **Research design**

To explore academics' perceptions of academic entrepreneurship we used a qualitative, single-case research design, which enabled us to get access to in-depth and information-rich data (Patton, 2002) and to understand how individuals' perspectives are a response to societal and institutional demands in a socially constructed context (Patton, 2002; Stake, 1995).

In this paper, we present the findings from the case analysis of the emerging entrepreneurial ecosystem of a university campus that is located in south-east Finland and is formed of Lappeenranta University of Technology (LUT) and Saimaa University of Applied Sciences (Saimaa UAS). LUT's latest strategy, launched in 2014, includes entrepreneurship in its mission emphasizing the broad scope of entrepreneurial actions. Since LUT has long traditions of collaborating with industry and it has included entrepreneurship in its strategic mission, it can be considered an entrepreneurial university (Foss and Gibson, 2015). This can be seen as a concrete action towards changing the university's role in society, which was in fact noted in the Finnish University Act (Yliopistolaki 558/2009) that introduced the third mission of societal interaction and impact. In actions related to fostering academic entrepreneurship, LUT and Saimaa UAS collaborate closely with Green Campus Innovations Ltd (GCI), which is partly owned by LUT, Saimaa UAS and two other regional stakeholders. GCI is a hybrid organization that offers seed funding, acceleration and incubation for the most promising research-based business ideas in the field of cleantech. The role of Saimaa UAS is to provide practical applications for the inventions originated from LUT research. The campus has a leading role in the region in promoting entrepreneurship and establishing new knowledge-intensive start-ups. In addition to local companies and start-ups, the main regional stakeholders are the city of Lappeenranta, the



Regional Council of South Karelia and the regional Centre for Economic Development, Transport and the Environment.

Conversational thematic interviews were the primary data source of this study. The interviews were of 20–60 minutes duration and were conducted between February and August 2016. We used a purposive sampling technique (Saunders, Lewis and Thornhill, 2016) and we selected interviewees based on prior knowledge of the key persons that have an active role in the academic entrepreneurship processes. The dataset comprises of 15 in-depth interviews of persons representing GCI, LUT, Saimaa UAS and the students' entrepreneurship society: vice rectors (2), administrative staff from research, development and innovation (R&D&I) (2), professors (2), associate professors (3), a research associate (1), senior lecturers (2), top management from GCI (2) and the chairman of the board from the students' entrepreneurship society (1).

The aim of the interviews was to shed light on and recognize the factors that foster entrepreneurship in an entrepreneurial university ecosystem. The interviewees were encouraged to talk about their perceptions of entrepreneurial and commercial activities as a part of their work. All the interviews were recorded and transcribed. Confidentiality was guaranteed to all the interviewees, and hence the interview quotations here – which are free translations from Finnish – are anonymous.

Each interview followed its own path. However, the researcher covered three broad themes during the interviews. First, regarding **networking and collaboration**, the interviewer asked the interviewee to name the most central actors in the ecosystem, asked what kind of interaction and collaboration he or she had, asked which are the most important means of collaboration and, finally, asked him or her to give examples of the successful and less successful outcomes of entrepreneurial actions. The second theme, **governance and leadership**, covered topics related to the strategic support of the region and the practical support of community leaders and civic officials in enhancing entrepreneurship in the region. Lastly, the interviewees were requested to provide information about **organizational barriers and support**.

We adopted an inductive approach and we used the thematic analysis technique since it is flexible and it allows for the identification of the key themes for further exploration (Saunders et al., 2016). We used *initial coding* and *focused coding*, in order to identify the emerging themes and constructs. The initial coding enabled summarizing data into conceptual categories that we derived from the research aims and from the loose theoretical assumptions. The focused coding enabled using the most significant categories for further analysis (Charmaz, 2016). For the data analysis, we used NVivo software.

The data analysis consisted of multiple stages (see Figure 2). The first stage, namely *initial coding*, involved categorization of the data into three broad categories comprising the main elements of the institutional theory: the regulative, normative and cognitive pillars (Scott, 2014). After this rough categorization of the data, we carefully read all the quotes that we had coded into each category and made sub-categories under each category. The themes of the sub-categories partly followed the themes that are identified to belong under each institutional pillar identified by the literature (such as norms, ways of working, incentives). Also, new context-specific themes emerged (such as entrepreneurial teams, students, incubation, personal characteristics).

The sub-categorization allowed us to get a more detailed picture of the phenomenon and we noticed that clear signs of conflicting interests and organizational resistance arose from the *cognitive factors* category and its sub-categories. To be confident with the coding, we double-checked the quotations under each category and made some revisions.

Following this, we conducted focused coding and, based on the initial findings, we made four new categories for further analysis. These new categories comprise the conflicting interests and organizational resistance, and we labelled the *conflicting interests* sub-categories as follows: *research and academic entrepreneurship*; *ordinary and exceptional*

*individuals; seed funding and incubation; and high-level strategies and ground-level practices.*

Figure 2 illustrates our data structure, including all the categories and sub-categories from which we developed the dimensions for further analysis. We discuss the results of the study in detail in the following chapters.

**[Insert Figure 2.]**

## **Findings**

In this section, we present the outcomes of the data analysis. We structure our findings according to the conceptual dimensions that we constructed, that is to say, according to the categories that emerged based on the focused coding (Figure 2).

### *Research versus academic entrepreneurship*

Besides the universities' traditional tasks, entrepreneurial universities have included societal interaction in their mission (Etzkowitz, 2003) in a specific way. However, implementation of the universities' third mission raises a set of contradictions. For example, it is considered

that societal interaction is not a real mission of universities since its implementation is not linked to any governmental reward mechanisms, such as there are for research and education.

The following excerpts describe typical quotations:

It would be contradictory to go for them [third-task activities], since the Ministry of Education emphasizes ranked publications. To say that we don't need to write publications, but need to do patenting – that is barking up the wrong tree. (Vice Rector)

The first problem is that it is not the university's mission. (Professor in technology)

Now, the third task is sort of a task mentioned in ceremonial speeches, but universities won't get rewarded for that. (Vice Rector)

Also, university strategy seems to guide academic entrepreneurship actions to a limited extent. On the one hand, the strategy-level discourse seems to give permission for entrepreneurial actions, but, on the other hand, there is a view that the interaction had evolved between researchers and industry partners well before the strategy was published.

This is in line with the earlier findings of Huyghe and Knockaert (2015) who defined that industry–science interaction is strongly determined by personal relationships between industry and particular professors. Therefore, this type of academic entrepreneurship was already an institutionalized practice prior to the strategic mission that emphasized universities’ third mission (Huyghe and Knockaert, 2015).

The interviewees recognize that entrepreneurship is encouraged in various forms, for example, a university offers laboratory premises and services with reduced prices to its staff members and it supports part-time assignments in the industry. However, it was considered that there were no incentives for implementing universities’ third mission. Furthermore, within the university there are differences in individuals’ perceptions of whether they represent technology or business disciplines. Individuals (even if only a small group of them) representing technological disciplines are regarded as entrepreneurial, but individuals representing business are regarded to have a role in researching entrepreneurship and not in participating in entrepreneurial actions directly. The following excerpts serve as examples of the decoupling that is taking place:

Within the university, our staff is strongly divided in the sense that there is a small group of people who want to be involved in start-up creation or business development

and then there is a large bunch of people who just want to study what is going on out there. (Research Associate in technology)

There were contradictory expectations. For example, we were expected to call firms and sell in the project. As researchers we can't do that; we should do something else instead ... We tried to communicate that clearly. (Associate Professor in business)

We don't have any incentives for researchers to participate in these actions. When people realize that the funding is not targeted solely to research but it also requires commercialisation actions they consider that it is not worth participating. (Associate Professor in business)

Researchers in the field of technology consider academic entrepreneurship activities more as a complementary part of their work than do researchers in business. Even if the entrepreneurial activities are also in the hands of a few individuals in technology, there is a commonly shared understanding that education, research and societal interaction are genuinely intertwined. Researchers in business are more reluctant to participate in

entrepreneurship actions since they are considered consultancy work that is not rewarded.

As one interviewee put it:

I think that not participating in commercialisation projects is a mental issue. I think that even if there was a big monetary reward, there wouldn't be that many willing to participate, or many capable of completing the required tasks. (Associate Professor in business)

Strategic goals of LUT emphasize new business creation. The goal was considered ambitious and support mechanisms for start-up creation were considered inadequate. For example, a professor observed:

It [LUT's mission statement] just stated that start-ups are needed. (Professor in technology)

It is a long way to go before we reach the strategic goal. Something should be done; either framing the target less ambiguously or making things happen faster. (Associate Professor in business)



Additionally the talk around the start-ups was seen to guide actions too much towards establishing start-ups and forgetting other aspects, like licensing the inventions to the existing corporations, which is considered to be a more secure option in many cases in terms of new job creation and profitability.

To summarize, when reflecting both the strategic-level targets and the individuals' perceptions of academic entrepreneurship, gaps on both structural and operational levels can be identified. First, universities as institutions should be rewarded by the government for implementing their third mission. Second, universities should develop internal reward mechanisms and support services for entrepreneurial actions.

#### *Ordinary individuals versus exceptional individuals*

The lack of potential entrepreneurs is considered to be the biggest obstacle for academic entrepreneurship. A division is made between 'ordinary' researchers and the 'exceptions':

The university is full of ordinary researchers and an ordinary researcher can't take the risk of establishing a company. However, there are a few persons like me who

could be involved in business activities, but establishing a team among staff members within the university is impossible. (Research Associate in technology)

The 'ordinary' researchers are seen as the ones polishing the details and not being able to adjust to the timeframes that business requires and as those who do not recognize the business potential of their research. In between the 'ordinary' researchers and the 'exceptions' there are hard-working individuals who typically have an industry background. These persons have job creation and increasing societal welfare as their main motivational factors for participating in entrepreneurial actions. These persons are the ones who provide the entrepreneurial teams with needed business expertise and act as a driving force, but who are not necessarily interested in entrepreneurship for themselves. For example:

It must be my background in the industry. Additionally it is my personal will to create societal impact. I want to create new business and jobs. I see that at the university I have potential to do this. (Associate Professor in technology)

It was acknowledged that among the staff members there is a lack of potential entrepreneurs, but students were considered to be more capable of becoming entrepreneurs.

Students are considered competent in terms of knowledge, but they lack the experience that is needed in business, specifically in high-tech industry fields. The following excerpt describes the common view of students as entrepreneurs in university-based start-ups:

For sure, the theoretical background gained through education is adequate, but what they are often lacking is the practical experience and vision of the real business ... We are also talking about technology-intensive business here; you need to have great risk-taking ability in order to enter the markets and that is hard to gain. (Senior Lecturer in business)

Moreover, students from Saimaa UAS were regarded as more likely to become entrepreneurs than the LUT students. In addition, there was a commonly shared opinion that students and practices of Saimaa UAS were more flexible when combining studies and working in academic entrepreneurship projects:

It seems structurally easier to utilize students from Saimaa UAS in entrepreneurship projects than LUT students. In order to utilize LUT students, we would need a specific course which could be applied in the project work, but these are complex cases and

implementing them as coursework would be difficult. (Associate Professor in business)

The student-led entrepreneurial society, established some years ago, was greeted with pleasure, but the expectations were for something other than practical collaboration. The students' entrepreneurial society was seen rather as a social club than as an entity aiming at real entrepreneurship. As one interviewee put it:

We would have room, and it would be good if student entrepreneurship would be visible, but they are in their own location there. In addition, in real terms, they don't look for new openings with us. (a representative of R&D&I)

To conclude, the general opinion was that students work on their own ideas, which are mainly applications that can be easily commercialized, whereas academic entrepreneurship, based on scientific research, is more demanding. That means that students and academic scientists are not truly working together as equal participants in the ecosystem. Stronger involvement of students could be achieved by providing commercialization cases for them as part of their studies, but curriculums do not seem to be flexible enough,

especially at LUT. However, those researchers who had worked with the students from the both institutions were very satisfied with their work.

### *Seed funding versus incubation*

There are two main paths for new venture creation. First, in the idea screening or pre-incubation phase, research teams can apply for governmental funding that is targeted to researching commercialization projects. Second, when the start-up is already established or is about to be established, seed funding is offered by GCI. Even if there are these governmental and university-based support mechanisms, researchers have contradictory expectations for different reasons. First, seed funding provided by GCI is only available for a few carefully selected teams and many promising ideas do not receive funding or support. Second, research teams would like to get support – for example, support in team formation and in scanning potential investors – and expect more of these kind of services from GCI. It is stated that, in addition to seed investments, the activities of GCI also include incubation and acceleration. In practice, however, the acceleration and incubation activities are based on ad hoc actions and the main goal of the company is to offer venture capital for university-based start-ups:

In real terms, we are an investment company which makes investments based on the same criteria as any other investment company. We are more interested in the outcomes of an incubation process than in incubation as such ... We are currently defining the incubation process, which has been more or less ad hoc so far – solely due to a lack of resources. (top management, GCI)

The interviewees, especially the professors and researchers, shared the general opinion that GCI's operations seem to be overvalued. The following excerpt describes the prevalent thinking:

We have the opinion that the operational logic of GCI is wrong. So far, it appears to us as just any venture capitalist, which operates by the same logic as any other venture capitalist, except for the fact that it doesn't have money. It could be thought that the most important task of the company was to form great teams and look for the funding elsewhere. (Professor in technology)

In general, governmental funding is considered very useful since it directs researchers to think about the commercial potential of their research. However, the funding provided has

its drawbacks. First, researchers tend to use it as a supplementary research funding and do not seriously consider establishing a business. Second, the rules for the funding are restrictive since they do not allow establishing a business, but allow developing different paths for academic entrepreneurship, which leaves the business development unfinished. The following excerpts describe a commonly shared opinion:

This funding is good when teams have real intentions to establish a company – when they are motivated. Additionally, if a team includes a person with business experience it has a good chance to be successful. Now we tend to apply for the funding or we have ongoing projects that just serve as additional funding for conducting research.  
(Research Associate in technology)

The expectations for greater support than GCI can currently offer cause unrealistic expectations and disappointment among the researchers who are interested in academic entrepreneurship. There is a clear need for support in team formation and incubation, but the services do not seem to be adequate, or at least they are not recognized, even if they have a high priority in the university's action plan for entrepreneurship.

*High-level strategies versus ground-level practices*

Little collaboration exists in academic entrepreneurship and new company creation between universities and other regional stakeholders. Existing collaboration was seen more to involve having meetings and drinking coffee together than being real reciprocal collaboration. It was regarded that there are several actors in the field, but they do their own work without knowing too much of others' work. For example:

In the region there are too many actors and each of them work separately and it results in collaboration that doesn't always work ... We have taken the development of entrepreneurship into our own hands here at the campus, just because the distance to regional actors using the operative means is too far. (Vice Rector)

The investment company provides pre-seed and equity investments for start-up growth companies and corporate spin-offs that are based on LUT research. It has a strong focus on cleantech and focuses on companies that can become world leaders in their field:

Our mission is our university's mission, which means that our message to the world is that we are small, focused and international. (top management, GCI)



In general, the entrepreneurial culture in the region was regarded to have stagnated and collaboration with the regional companies is not as active as it could be. LUT mainly collaborates with bigger corporations, which are not necessarily located in the region:

Our university tends to collaborate with big companies since it has demanding long-term research projects and SMEs don't have enough resources to join these projects.

(a representative of R&D&I)

LUT's strategy and its action plan for entrepreneurship encourages developing cooperation and fostering the mobility between the university and the surrounding society. Additionally, the regional strategy acknowledges the potential of universities in business development and in new business creation. The regional strategy encourages non-conventional interactions between entrepreneurs and experts from different fields in order to find new ways of collaboration. However, according to interviews, strong strategic support is not realized in concrete actions in academic entrepreneurship:

The investment company picks the very best and invests in a few individual companies, whereas university students or staff establish many more companies, but they don't go through incubators or accelerators. Graduates just establish companies and that's it. It doesn't require any specific effort. (Vice Rector)

We just need to do something else than generating projects that result in reports. That is a waste of funding. (Vice Rector)

It is much easier if we can work with existing companies with sufficient resources. Together with companies with which we have existing connections, we can create welfare in Finland. (Professor in technology)

The aforementioned excerpts describe the views of many interviewees. The collaboration with the regional stakeholders was considered as difficult or as unreasonable. Instead, the university–industry collaboration and new business creation tended to be focused on national or international markets.

*Common ground*

LUT has long and successful traditions in university–industry collaboration. Discourse on entrepreneurship has increased expectations for academic entrepreneurship, especially for start-up creation. The excerpt below describes the traditional way of working:

The existing path for patenting and licensing is functioning well. It is the traditional way, and we haven't made much noise about this and this is not shown in statistics. They are not the university's patents – the ownership belongs to the companies. (Vice Rector)

There is plenty of hidden potential beyond the traditional university–industry collaboration. The existing mechanisms for finding entrepreneurial potential and giving individuals the right support need to be strengthened in order to make the support mechanisms visible:

Yes, we have received support from LUT and Saimaa UAS, for example, we received support in creating the business plan. This support has been very valuable and this is exactly what is needed. (Senior Lecturer)

It looks as if clearer roles are needed between GCI, incubation services, and researchers representing technology and business:

It worked well with the technology teams with which we collaborated. They were eager to learn the commercial part and we achieved fruitful collaboration by combining technology and business in such a way that they were both pushed in opposite directions: technology towards business and business towards technology. Then we found the right interfaces. (Professor in business)

Moreover, it needs to be acknowledged that it is a different group of people who aim to conduct top research compared to those who run academic entrepreneurship projects. One interviewee put it as follows:

It cannot be required that someone who performs academic entrepreneurship actions also conducts top research. Of course, there are exceptions, but it is not necessarily very optimal to expect everyone to do everything. (Associate Professor in technology)

Lastly, regional collaboration could be strengthened by developing experimental platforms and by directing public investments to the testing of new technological solutions. This is also stated in the regional strategy and the interviews of this study and supported by the fact there are already some good practices and examples that could be enhanced.

### **Discussion and conclusions**

The purpose of the study is to add to the literature on entrepreneurial university ecosystems by highlighting the ways in which individuals engage or decouple in entrepreneurship processes. The study extends our understanding of entrepreneurial university ecosystems by providing an in-depth analysis of how individuals' perceptions are a response to the societal and institutional demands to foster entrepreneurship, especially academic entrepreneurship.

The results of the study confirm that establishing a successful entrepreneurial university ecosystem requires collaboration and contribution from all stakeholders within and outside university (Rice et al., 2014). This case shows that even if the promotion of entrepreneurship is high on the regional strategies and it is strongly supported by the university management as a top-down initiative, the university staff tend to interpret the incentive system as counterproductive and there is both intentional and unintentional decoupling if the staff is not engaged in entrepreneurship processes and if the strategic goals

and support mechanisms are not aligned. Additionally, intentional or unintentional decoupling may occur if individuals have contradictory expectations about each other's roles and if they consider that entrepreneurial activities do not compliment their academic work.

Additionally, in this case, concrete collaboration with external stakeholders is very limited, and therefore institutionalized practices are not visible. We claim that this is the result of unintentional decoupling, which means that some elements of the organization may be unintentionally retained and this prevents new practices from being fully integrated in day-to-day work (Gondo and Amis, 2013). Due to tradition, LUT has tight collaboration with large corporations and faculty researchers have established tight dyadic relationships with their industry partners. This collaboration has been very successful, and therefore, there has not been any immediate need for finding new regional partners, even if there is high-level strategic support for that. In addition, intentional coupling exists, meaning that there is lack of belief in the suggested practices improving the productive value of one's work, coupled with a passive approach to participation (Gondo and Amis, 2013). In practice, this showed that the new practices with the regional stakeholders are only implemented ceremonially.

Universities' third mission does not possess cognitive legitimacy among the interviewed individuals, but education and research are regarded as the highly

institutionalized logics of universities. These more institutionalized functions tend to be maintained and are more resistant to change (Zucker, 1991) since more rewards are associated with research and education than are associated with entrepreneurial actions.

For example, the individuals representing business disciplines mainly see their role as that of a researcher. For this reason, there is unintentional decoupling, which manifests as a high-acceptance level, but also in passive participation in academic entrepreneurship processes. Engagement in academic entrepreneurship is stronger among researchers in technology since they tend to consider that research, education and academic entrepreneurship are genuinely intertwined.

However, even the researchers in technology who consider themselves 'exceptional' are only interested in academic entrepreneurship to a limited extent. These persons are highly motivated to achieve societal impact, but they feel insufficient when faced by higher institutional demands to foster academic entrepreneurship. They expect a university or regional support services to take part of the burden of entrepreneurship from them. Additionally, they expect more support from their peer colleagues, like gaining business knowledge from the business school, meaning that the pressure for entrepreneurship would not be on the shoulders of a few individuals. They want to be involved in academic

entrepreneurship, but they expect that someone will lead the process and find the right resources and required competencies.

For the governmental decision-makers the results imply that universities' third mission activities should be acknowledged and rewarded. The regional stakeholders and university management need to acknowledge that, in order to create successful and sustainable entrepreneurial university ecosystems, networking and peer-support mechanisms need to be created, in addition to monetary support.

Naturally, our study has its limitations. The ecosystem consists of a group of interdependent actors (Cohen, 2006; Stam, 2015), and the conclusions that we have drawn from the analyses are based on the interviewees that we conducted among persons representing higher education institutions in the field of technology and business, leaving the perceptions of other regional actors and students beyond the scope of this study. Additionally, actions related to entrepreneurial education were not included in the study. However, the findings of the study indicate that students have more potential than is currently utilized. Therefore, future research could investigate how to involve students in the ecosystem's processes as equal members with researchers through teaching and extracurricular activities. Another avenue for future research could be conducting in-depth analysis of the factors that makes certain groups of individuals consider themselves as



exceptional in the academic entrepreneurship process; what are the underlying reasons for this judgement and from which factors do the differences stem?

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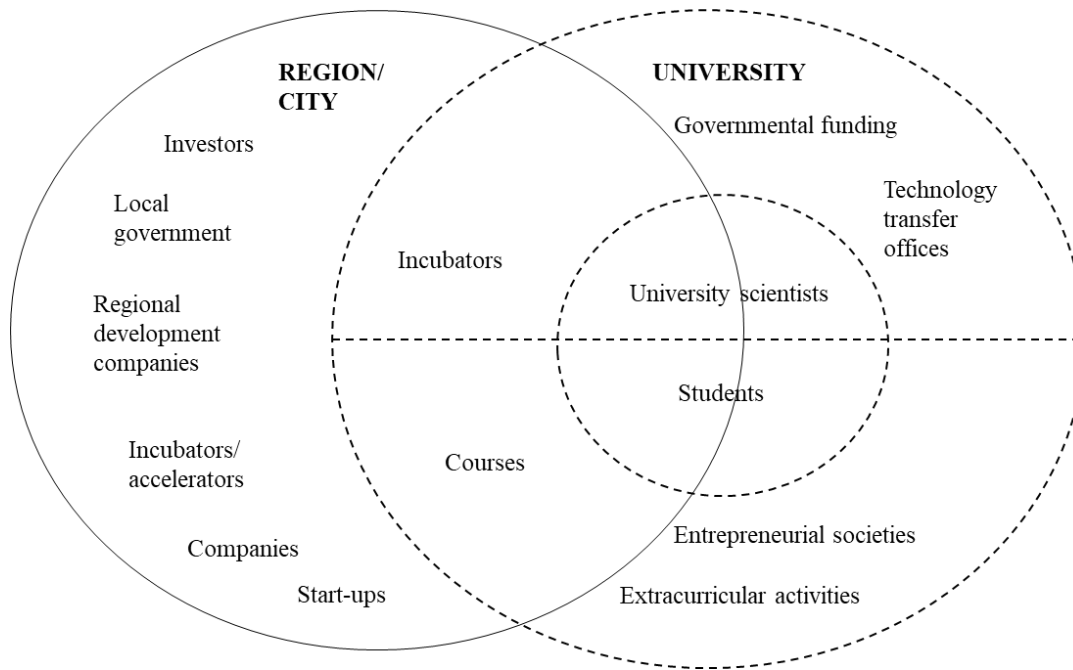
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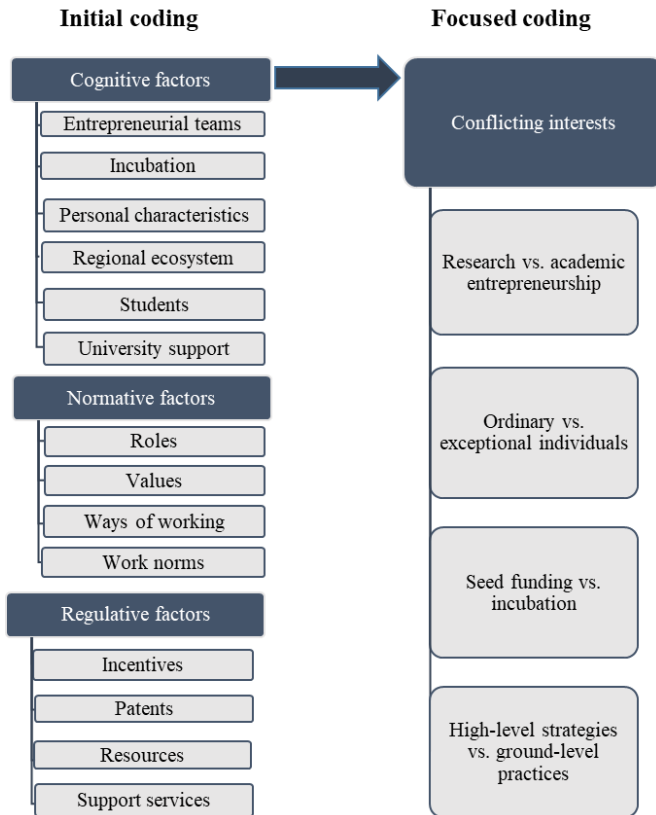
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**Figure 1.** The main elements of the entrepreneurial university ecosystem, showing its connectedness to regional stakeholders

*Source:* Modified from Miller and Acs (2017).



**Figure 2.** Data structure.