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**Entrepreneurship Research – Discussing Today the
Awareness of Tomorrow (YERC 2012)**

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Britta M. Gossel

Entrepreneurship Research in Germany – A young scientist's perspective

1 Introduction

Exploring the entrepreneurial landscape of Germany, a quite heterogeneous picture arises. Melitta Bentz, Gottlieb Daimler, Levi Strauss – a lot international well-known names decorate the long list of German inventors and entrepreneurs. Germany seems to be an innovative country, a “land of ideas”. Today the German capital Berlin becomes more and more a popular region for young entrepreneurs. Even founders from abroad, e.g. the team of soundcloud (Weigert 2010), immigrate to found their international businesses in Germany. This is quite amazing since studies about entrepreneurial activity in Germany show a different picture. Compared with other innovation driven countries, Germany's Total Early-stage Entrepreneurial Activity (TEA) is with 5,3 percent ranked low (grade 20 of 24 innovation driven countries) (Sternberg, Vorderwülbecke & Brixy 2012: 9) and far away from gender balance since in 2012 men outnumber women by TEA of 7,15 to 3,54 percent (ibid. 12). Flipside of the coin is a policy that strives a sustainable support of entrepreneurial activity. No other innovation driven country seems to have a better public grant program for entrepreneurship than Germany (ibid. 22). Germany, an entrepreneurial country?

These and other questions are discussed in the context of the still young field of entrepreneurship research. Not only questions on context and conditions of successful venture creation are discussed. As well questions beyond this

narrow definition, assuming entrepreneurship in a wider context are on the research agenda (e.g. Achtenhagen & Johannisson 2013). Not only the field is young: Beside established and international successful researchers in the 'golden age' of their academic career, a lot of young scientists are working in the field. Most of them are unknown, standing in their early stage of a scientific career. Their ideas, points to discuss and working issues, are not or slightly late part of the 'professional' scientific discourse. This can be seen as amendable. Based on these thoughts, the idea to a Young Entrepreneurship Research Colloquium (YERC) was born. Results of this innovative format are presented and discussed in this volume, according to the idea that the young of today might be the established entrepreneurship researchers of tomorrow. Therefore, this book was titled *Entrepreneurship Research – Discussing today the awareness of tomorrow*.

This chapter is structured as follows. In a first step, I will picture the current situation on entrepreneurship research in Germany. Thereafter, I will introduce idea and context of the Young Entrepreneurship Research Colloquium. Finally, I will give an overview on the contributions in this volume.

2 Entrepreneurship Research in Germany

Germany comes with about 110 chairs in entrepreneurship (FGF e.V. 2013), which means at least a quarter of all 427 German universities do research and teaching in entrepreneurship. Regarding a huge number of entrepreneurship centers and the freedom of research and teaching, even more activity can be assumed. The German research agenda was outlined several years ago in an internal study of the FGF e.V., one large German organization encouraging

entrepreneurship research, education and policy. Here, three big issues are highlighted: One issue is the aspect of general founding conditions including entrepreneurial spirit and culture in a country, financing options and knowledge or technology transfer from universities. The person of the entrepreneur and decision-making are seen as a second issue, including personal characteristics, attitudes and behavior, promoter and barriers, acquisition of resources in the pre-founding-phase. A third mentioned issue is the field of success factors, meaning strategies of market entry, financing, organizational setting and acquisition of staff, growth and growth barriers, marketing (Witt 2006). Recently, more topics – e.g. social entrepreneurship, cultural entrepreneurship (FGF e.V. 2013), media entrepreneurship (Hang & van Weezel 2007, Achtenhagen 2008, Gossel & Will 2012) or entrepreneurial communication (Gossel 2011; Mueller, Volery & von Siemens 2013) – come to the fore.

Compared to the international research, the German community differs in several distinct aspects related to research topics (Schmude, Welter & Heumann 2008), methodological and thematic contexts (Welter & Lasch 2008). For example, only few works contribute novelties in the context of the person of the entrepreneur in the meaning of individual/team-founding; several are on system specific aspects like East German entrepreneurs; a large part focuses environment and here enduring topics as financing, venture capital market, policies (Schmude, Welter & Heumann 2008: 303). A trend of phenomenon-driven research and environmental issues is described in the context of German specific ways of topic identification: “up to now entrepreneurship researchers in Germany apparently have followed different principles for identifying their topics of interest. They obviously paid more

attention to the context in which entrepreneurship takes place, thereby implicitly continuing the historical tradition of interpreting entrepreneurship as a holistic, embedded, and context-specific phenomenon” (ibid. 304). Even though the research landscape is changing in Germany as well, the picture is still diverse. Still economic modeling, descriptive and explorative approaches are dominant but “more recent studies converge on a ‘number-crunching’ approach, with sophisticated statistical techniques dominating and few exceptions drawing on experiments or qualitative research methods” (ibid. 305).

From the perspective of a young entrepreneurship scientist, the overview on the research landscape in Germany pictures a still young and aspiring community. Currently we identified 345 young researcher positions in Germany, including every career stage between university degree and full professorship. This new generation of younger researchers seem to be “no longer originating from other research areas such as small business research, which might foster a more open approach to entrepreneurship topics” (ibid. 305). This generation appears to be more oriented towards publishable topics, more to the international community. But from this perspective of a junior scientist, some deficits can be observed in Germany as well. The entrepreneurship research community is represented on a national and international level on a lot of conferences (e.G. gForum in Germany, RENT, IECER, ICSB, BCERC), but the scenery lacks of call for papers with freedom for own topics that offer researchers the chance for an unbiased presentation of current research issues. Of course, open tracks are offered often enough, but the access level seems to be high. Affordable possibilities for junior researchers to discuss and present, even more in current times of scarcity of

resources in science, are seldom observed. Chances and possibilities to think out of the box and connect with praxis are still rare in our science system. Even though a lot of programs are running (e.G. doctoral candidate seminars at RENT or gForum), we observe a need for more arenas especially for the academic offspring. Finally, scientific writing skills, especially in the English language, need to be learned and proved. Within this context, the idea to a new format titled as Young Entrepreneurship Research Colloquium (YERC) was born.

3 Young Entrepreneurship Research Colloquium (YERC)

Ilmenau University of Technology comes with about 7.000 students and is established in the fields of engineering, mathematics, natural sciences, economics and media. Since 2010 the Department of Media and Communication Management as well as the Department of Management and Organization are pushing forward the topic of entrepreneurship on the research-, education- and local praxis-agenda. Several activities show first results of this engagement. One example might be the implementation of the BA-Course “Entrepreneurship” for students in the field of Applied Media Sciences. Nearly 100 students learned basic entrepreneurial thinking and were encouraged to a career in their own enterprise. Another example is the voluntary initiative “auftakt. Das Gründerforum Ilmenau”, created as a bottom-up initiative by students, doctoral candidates, professors and founders to increase more entrepreneurial spirit.

In 2012, the big event „gründen.lernen.wissen.” (founding. learning. knowing.) was organized by “auftakt. Das Gründerforum Ilmenau”, aimed to bring entrepreneurship interested people from different contexts together. In three

different tracks, 260 experts from the fields of education, science, capital investment and entrepreneurs came from all over Germany to Ilmenau to discuss on entrepreneurship, to pitch and to connect. YERC was one of the three tracks in this big event. Young entrepreneurship researchers were invited with an open call to submit proposals. After a review process, a small sample was invited to discuss and present their current research issues in the field of entrepreneurship research. Locally, an open-door policy was not only set up by idea but filled with life in practice. So the researchers had to face the challenging situation, not only to discuss with researchers but with education professionals, young entrepreneurs and venture capitalists.

This book was edited to continue the idea to support and encourage young researchers' work, and that means not only completed research but work-in-progress projects. Another aim was to enlarge young researchers' publication skills and to offer an opportunity of producing research texts in English language. The discussion opened at the conference is continued in this book. The invited article of Leona Achtenhagen, Professor of Entrepreneurship and Business Development at Jönköping International Business School in Sweden offers in a final concluding chapter a shift from the German to an international perspective and a critical but encouraging reflection of each contribution from a profound entrepreneurship scientists perspective. This and the young researchers' contributions will be introduced by the following.

4 Contributions in this book

The first two contributions focus more on external conditions and context factors of entrepreneurship. Markus Lahr works on the phenomenon of creative labs. Under the title *Creative Labs in Open Innovation Processes – Types and Functions* he assumes Creative Labs as approach to support open innovation processes. He investigated and ranked 22 Creative Labs by organization types, target groups and concepts with the aim to identify different types of Creative Labs attributed to different stages of the innovation process. The second contribution researches investment criteria and is authored by Maximilian Brandenburger, Gerda Frank, André Presse and Orestis Terzidis. Their work titled with *Business Angels Decision Criteria in New Ventures in the Seed and Early Stage Phase* focuses on specialties of German business angels. The results of the sample are compared to studies in the U.S. and U.K.

The next two contributions focus more on a perspective on entrepreneurship as a process and organization creation. The authors Sebastian Hoppe and Stefan A. Uhlich pose the question *Is the process of business formation a business process?* By assuming the formation of a business as a process in three phases, they suggest that routines exist which can be handled by business process management. Mareike Schmidt explores the very special topic of *Organizational Learning of 'Born Transnationals'* dealing with the question whether and how far organizational learning and the absorptive capacity helps international start-ups attaining competitiveness. She introduces a theory-driven conceptual approach to identify core causalities and deduces propositions for later empirical work.

The last two contributions focus on specialties in entrepreneurship education. Orestis Terzidis, André Presse and Fabian Metzeler focus on *Creativity in*

Teaching and Learning – Existing Concepts and new Formats. They provide an analysis of North American and European entrepreneurship education programs related to the question, how creativity is being integrated. Finally, Martin Arnold and Tobias Michael provide an *Entrepreneurship Education Evaluation* related to describe an interdisciplinary social entrepreneurship course for humanities and social sciences. Furthermore, they introduce an evidence based approach to develop appropriate entrepreneurial education and evaluation programs.

This book closes with the concluding chapter *Summing up – moving entrepreneurship research forward* by Leona Achtenhagen. After introducing the relevance of the book, she lifts up the here opened German perspective on entrepreneurship research to an international perspective, including current trends and future directions in entrepreneurship research. To push the contributions included in this book forward, she briefly reviews every contribution, giving useful feedback and hints for further steps.

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Markus Lahr

Creative Labs in Open Innovation Processes – Types and Functions

1 Introduction

The concept of open innovation as a „... paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology“ (Chesbrough 2003) plays a major role in innovation management, in academic discussion and in the practical application (Huizingh 2011). The advantage of open innovation lies in its ability to “widen the extent of the idea and solution finding” (Reichwald & Piller 2005). External actors are included in the innovation process which leads to new input factors that increases quality of innovation potential. Therefore, it is important to create an environment that promotes innovation and gives its users the possibility to innovate successfully. Creative Labs are a popular concept to create such an environment. Accordingly numerous Creative Labs have been founded in the last couple of years but haven’t been subject to scientific research. It is still not clear how Creative Labs can be defined, how they can be differentiated and categorized, which factors are critical for success and which intention they follow and what their purpose is.

Labs do have for example a lot of similarities with incubators in terms of their administrative structure and type. Differences mainly exist in their respective concepts. Incubators and pre-incubators provide office spaces for rent, infrastructure and services for business start-ups and entrepreneurs over a

longer period of time. In contradiction Creative Labs accompany processes of idea creation and their implementation for business start-ups and business development often in workshops in a short but intense period of time.

The aim of this research is, therefore, to define a first systematization, to clarify the role of Creative Labs within the innovation process and to deviate follow up research questions.

Although there are many different definitions for creativity, there is currently no coherent definition for a Creative Lab. For this study a Creative Lab is understood as a concept that describes the framework for an open and interdisciplinary search and solution finding process between different actors that uses creativity methods to generate and implement ideas.

2 Methodical approach

By using literature analysis it has been assessed how current the research topic is. For this purpose different scientific databases have been searched for the terms „Creative Lab“, „Idea Lab“ and „Innovation Lab“. The same search was conducted using Google search engine. The different terms have been chosen due to the results of the desk research that shows that there is no fixed expression to describe a Creative Lab but that concept and name of a Lab are subject to its respective group of users.

A Google search conducted on the 25th of May 2012 for the term Creative Lab resulted in 1,030,000 hits. A similar number of search results was brought back by the term Innovation Lab 962,000 and Idea Lab 362,000 (see Table 1).

Due to the high number of results it was not possible to analyze all entries in terms of their thematic relevance. Exemplary the first 30 search results have been checked. 28 of 30 search results (93%) for the term Innovation Lab are in regard to their content related to the topic of Creative Labs. Searching for the

term Idea Lab, 24 of the first 30 (80%) results were related to the topic. The lowest identicalness (20 out of 30) was found when searching for Creative Labs.

These samples are not eligible to draw general conclusions but the high number of search results and the high ratio of thematically congruencies are showing a very high currentness and presence of this topic in non-academic literature.

In a second step different scientific databases have been evaluated to get an overview on the currentness in academic literature. Therefore, three of the most popular databases have been chosen (see Table 1). Searches were conducted with the same three terms in Ebsco, Web of Knowledge and science direct.

| Database search-term | Google | ebsco (matching thematically) | Web of knowledge (matching thematically) | Science direct (matching thematically) |
|----------------------|-----------|----------------------------------|---|---|
| Creative Lab | 1.030.000 | 0 (0) | 0 (0) | 166 (13) |
| Idea Lab | 362.000 | 0 (0) | 6 (4) | 23 (0) |
| Innovation Lab | 962.000 | 0(0) | 380 (12) | 102(5) |

Table 1: thematically matching of search results

Similar to the Google search the terms Idea Lab, Creative Lab and Innovation Lab were searched for. The results show a significantly lower number of hits compared to the Google search. Especially the term Idea Lab, which resulted in a combined 29 hits seems to be underrepresented in academic literature.

Only four of these hits were related to creativity. The term Creative Lab returned 166 results of which were 13 (8%) related to creativity. Most search results were brought back by the search for the term Innovation Lab although only 17 hits or 4.2% were relevant to the topic of creativity. Although not representative, these results again indicate that research in the area of Creative Labs is still not a major focus in entrepreneurship research.

After analyzing search results the next step was to identify Creative Labs on a global scale by desk research. In sum 22 Labs were found that resemble the earlier stated definition for Creative Labs. To gain an overview in regards to their functions, target groups and overall concepts and to allow for comparison between Labs specific features have been collected and were summarized in a matrix.

3 Systematization of different Creative Lab Types

The role of Creative Labs as part of open innovation was until recently not in the focus of the scientific discourse (see Table 1.) Until now research dealt with the systematization of incubators and pre-incubators which often act as the administrative framework for Creative Labs. By using different criteria (Barbero, Casillas, Ramos & Guitar 2012) incubators can be differentiated by their strategic direction (Carayannis & Von Zedtwitz 2005; Von Zedtwitz & Grimaldi 2006 in Barbero et.al 2012), their philosophy and included business sectors (Aernoudt 2004 in Barbero et al. 2012), as well as their business model (Allen & McCluskey 1990 in Barbero et al. 2012) and business targets (Gassmann & Becker 2005).

The differentiation of pre-incubators was drawn along similar criterias. Fischer differentiates between operator, targets, business models, economic background of users and target groups (Fischer 2011: 54). Feller et al. on the other hand were the first to research the impact of Creative Labs as knowledge intermediaries (see figure 1) on the exchange of knowledge, meanwhile Dell’Era & Verganti categorized „design-driven-Laboratories” within companies (Dell’Era & Verganti 2009).



Figure 1: System of knowledge brokering (compiled by the author)

The following figure (see figure 2) gives a brief overview on the strategic alignment of Creative Labs, their respective type of administration with their operation structure and their long term target. Meanwhile there are four different types of Creative Labs in terms of their administrative structure which are either for-profit or non-profit Labs. Most of the non-profit Labs are incorporated in Universities as they mostly work with students. Labs are also administered by governmental bodies and NGOs. Only a few of the found examples are with companies and pursue a for-profit policy. There are three overall concepts of Creative Labs. The first one is the promotion of business start-ups, the second one is business development and third one is social innovation.

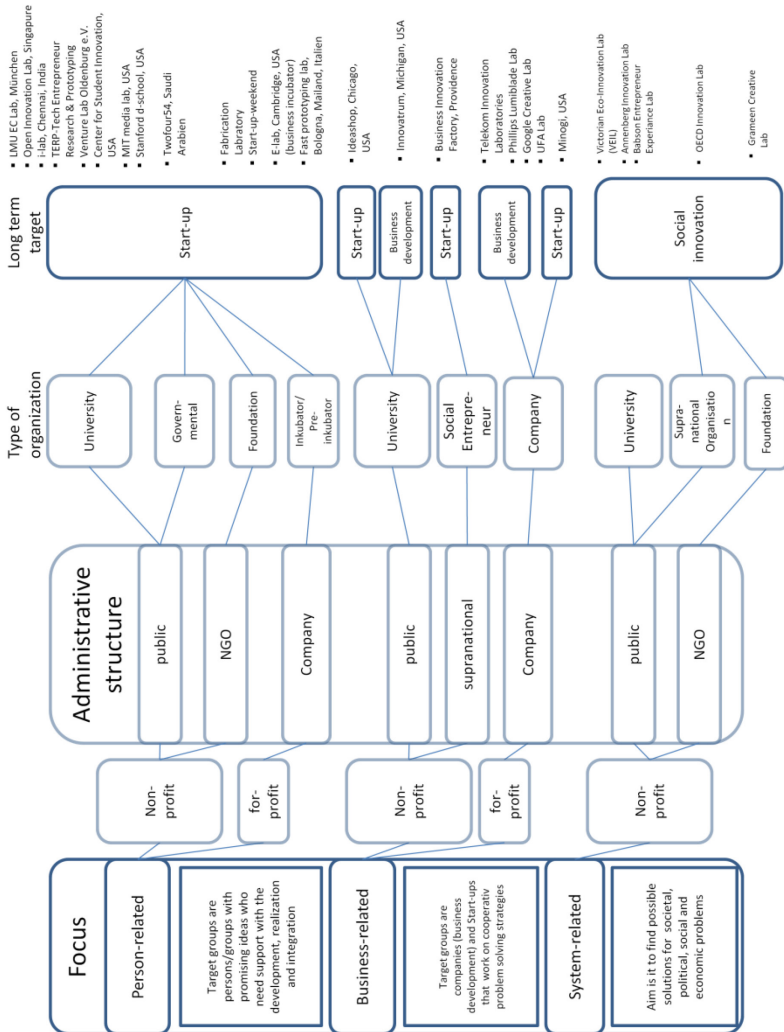


Figure 2: Systematization of Creative Labs (compiled by the author after Gassmann & Becker 2005)

4 Categorization of Creative Labs

On the basis of desk research and newly developed Lab-summaries three major types of Creative Labs

- Person-related Creative Labs,
- Business-related Creative Labs and
- System-related Creative Labs

have been deviated. The categorization is oriented on the concept of knowledge brokering (Feller et al. 2010) and describes the different roles of the Labs within the concept.

4.1 Type 1 – Person-related Creative Labs

The majority of type 1 Labs is incorporated in Universities and Research Institutes. Utmost concern of these Labs is to support individuals and groups, like students and entrepreneurs with potential ideas, to review, develop, realize and integrate. These specific projects that are either being developed by individuals or teams with the help and under supervision of the Lab are the projects of cooperating businesses with specific problems that allow Lab participants to practical apply their theoretical knowledge. The focus of these Labs is always to provide its participants (solver) with personal development measures to further qualify them. Labs are acting as intermediaries of knowledge and skills. In addition some Labs use their contacts to businesses (seeker) to allow participants (e.g. students) to work on real life problems that these companies are facing during their product development. Main difference to type 2 Labs is the emphasis on personal development measures and only secondarily the cooperation with businesses. The cooperation with companies is more seen as a possibility to leave the theoretical level and to raise funds for Lab operations. The companies on the other hand gain access to cost-effective

external problem solving capacities. An example for type 1 Labs are Fabrication Laboratories (FabLabs). Organized in a global network and regulated by the FabLab Charta, these non-profit Labs provide ways such as lasercutters, 3D-printers, sewing machines or just a PC workstation to allow its users to work on and realize their ideas.

4.2 Type 2 – Business-related Creative Labs

Most of these Labs are either independent companies, are part of a company or are integrated in for-profit institutes. Target group of type 2 Labs are businesses that want to use the Lab for business development activities and start-ups which still have to place their product in the market and who want to engage in problems solving in cooperation with the Lab participants. The enterprise (seeker) approaches the Lab with a concrete problem statement and mandates it to develop creative strategies and solutions. The Lab acts as an intermediary and is working in close cooperation with volunteers e.g. to the principle of crowdsourcing, with groups of students or in some cases with a team of own employees to find solutions. These Labs focus mainly on the cooperation with companies as they are working for-profit. They work on given problems by the seeker in order to fulfill the tasks agreed upon. Personal development measures for participating volunteers, students or staff (solver) is only of minor interest for the Lab.

4.3 Type 3 – System-related Creative Labs

Labs categorized as type 3 are neither working for profit nor are they focusing on personal development measures. Their aim is to develop approaches for societal, political, social and economic problems, such as climate change, that often are of global scale and high relevance. This type of Lab is not acting as

an intermediary but as a seeker as it most of the times provides its own problem statement. Seekers as well as solvers are acting in the public interest. Type 3 Labs are often run by foundations, non-governmental organizations or Universities.

4.4 Additional classification

Besides the above described Lab type's further categorization in terms of the administrative structure was carried out. As already said Creative Labs can have a for-profit and non-profit orientation (see picture 2). Meanwhile non-profit Labs are mostly run by foundations and Universities and exist as each of the three Lab types, for-profit Labs are most of the time independent profit seeking companies that cultivate close ties to Universities and Research Institutes. Depending on the conceptual framework of a Lab they either focus on business development or the support of start-ups.

Next to an administrative classification of Creative Labs the author also tried to find out in which stages of the innovation process Labs are exerting most influence on their respective project. With the help of the created matrix and additional desk research it was possible to deviate in which structural context the Lab is integrated and which methods each Lab is using. As all results are based on desk research and the analysis of literature and internet sources a certain degree of imprecision in regards to the exert of influence has to be considered. Basis for the classification is the model of the innovation process after Tsifidaris (Tsifidaris 1994).

Of special interest for this paper are stage I (observing), stage III (idea generation) and stage V (development) as the stages in the innovation process that are from the authors point of view the most relevant for Creative Labs. As seen in figure 3, type 1 Labs do mostly focus on idea generation and

development and accompany the products until they reach test stage. Business related Labs often start engaging in projects that are still in the observing stage and accompany the product until it reaches the testing stage or even its commercial launch. Type 3 Labs follow a similar approach. It has to be stated that only 3 out of 22 Labs actively support projects beyond the commercial launch (see figure 3).

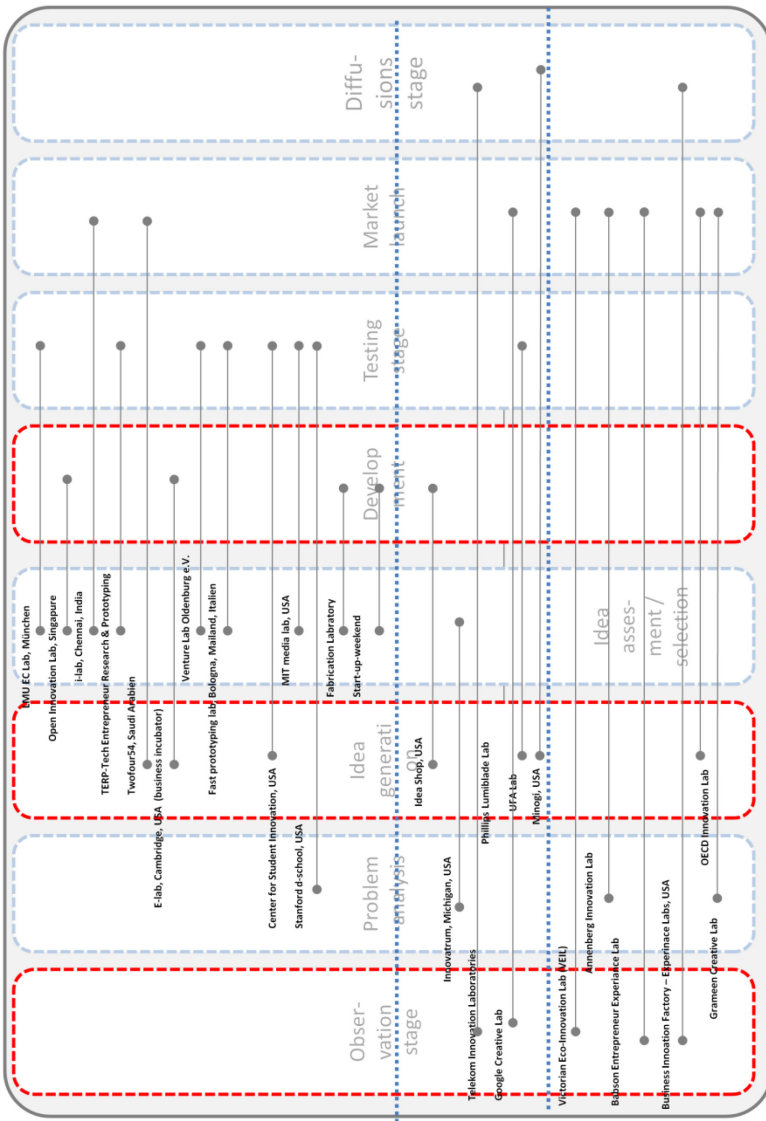


Figure 3: Stages of the innovations process (modified after Tsvidaris 1994)

5 Conclusion and further research questions

First results show, that although there are numerous different Lab concepts overall similarities between the identified Lab types do exist. It should be pointed out that Creative Labs can be differentiated in three major types. Creative Labs are (1) often tightly enmeshed with Universities and provide training for students as well as support for the advancement of start-ups. They can seek (2) a close cooperation with businesses and as a contractor are not limited to certain enterprises which makes them accessible for various types of stakeholders. One of the main tasks is to host and carry out search and problem-solving processes. Furthermore, there are Labs (3) that act in public interest and use expert knowledge to work on current and often global scaled problems.

This work is able to make first statements to show in which stage of the innovation process the analyzed Creative Labs are playing an active role and which of the eight process stages from the author's point of view is of significant importance. In the next step a more detailed examination of selected Creative Labs is necessary to further validate and to render the results more specific.

From the findings of this paper a number of follow up questions derive for the area of entrepreneurship and innovation research. These questions mainly focus on aspects of performance measurement and best practice examples. For this purpose the aim is to develop with the help of detailed case studies a set of indicators that allows to measure and rate the performance of Creative Labs. Therefore, in a first step it is important to find a clear definition for the terms performance and success in regards to Creative Labs.

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Business Angels Decision Criteria in New Ventures in the Seed and Early Stage Phase

1 Introduction

Research on the decision criteria and investment process of business angels as well as their motives has been carried out since the late 90s (Van Osnabrugge 1998; Brettel, Jaugey & Rost 2000; Stedler & Peters 2002; Hill & Power 2002; Sudek 2006). Most studies were focused on business angels located in the United States and in the United Kingdom. The studies of Brettel et al. and Stedler et al. were the first studies analyzing the informal venture capital market in Germany and surveyed the informal venture capital market. Stedler's empirical approach covers business angels rather than their investment criteria: the personality, the deal-flow, the due diligence as well as the investments itself. Also in Brettel's study about German business angels investment criteria contribute a relatively small section. Van Osnabrugge has contributed the most extensive research on investment criteria. His research includes a comparison of business angels and venture capitalists' investment decision criteria as well as their procedures in Britain. There is very little empirical analysis on German business angels' investment decision criteria. Therefore, this study focuses on German business angels' investment criteria and how they prioritize them. The results of this study will be compared to studies in the U.S. and U.K. with a similar focus. The study is based on investment criteria applied by a set of business angels in Germany. These investment criteria are the focus of this

paper and are divided in four different categories. The most important category is the “Entrepreneur’s Characteristics”. Our research shows that “trustworthiness of entrepreneur” is the most relevant criterion for German Business Angels to invest in a start-up.

2 Method/Creation of the Questionnaire

For the empirical analysis, 26 business angels were surveyed with. An online questionnaire had been sent to the interviewees and where eligible, personal interviews have been conducted. The quantitative phase consisted of surveying business angels on their investment criteria and their priorities. Prior literature review identified several formats for questionnaires (Brettel et al. 2000; Stedler et al. 2002; Sudek 2006; Van Osnabrugge 1998). This study builds on those four questionnaires, whereas Van Osnabrugge’s (1998: 452) questionnaire served as a primary model. Adjusting the questionnaire to the German business angel culture, new questions were added and existing questions modified. The adjustment was conducted in a pilot study with personal interviews. Examples for modifications are: “regional support” (investing motivation), “appreciable proportion of self-financing by the entrepreneur”, “term till exit”, “frustration tolerance”, self-confidence” or “achievement motivation” (decision criteria).

Some business angels have agreed to be interviewed by telephone. Telephone interviews were semi-structured with seven questions as a basis and took ten minutes time. The goal of the qualitative phase was to confirm the findings of the online survey, to find important investment criteria which have not been surveyed and to collect their opinion about the future role of the informal venture capital market.

3 Data-Gathering Process

The surveyed business angels were contacted in several ways. For the pre-study, individual contacts business angels were utilized to determine whether all essential aspects have been addressed by the questionnaire. Secondly, a regional business angel network was addressed and thirdly, all 43 business angel networks listed in the German Business Angel Network (BAND, Business Angel Network Deutschland) have been addressed by e-mail or telephone.

The survey was put online on May 1, 2012 and was online until June 3, 2012. In total, 32 business angels participated in the study. Six of them agreed to a further telephone interview. Six business angels gave up before completing the survey. These incomplete questionnaires were not considered in the analysis.

4 Results

4.1 Investment Decision Criteria of German Business Angels

This chapter ranks the various investment decision criteria of the business angels surveyed. The following chapter (4.2) compares those findings with the investment criteria of British and American business angels.

For the majority of business angels, the most attractive group of investment criteria is “the entrepreneur/management-team”, followed by “market/product”. This is followed by “financial” factors and then by “other business attributes”.

In the following sections the various criteria groups are examined closer and some criteria are highlighted in detail.

The Entrepreneurs and the Management Team

Trustworthiness and enthusiasm of the entrepreneur can be identified as the criteria most relevant to German business angels. With a mean of 1.1¹, 5 84.6 percent rated trustworthiness and enthusiasm as “very important” and only 15.4 percent merely as “important”. Entrepreneurs with those qualities have received more interest from angels and are more successful in being financed. As the ventures are in their first stages of business development, business angels invest in people rather than companies. Therefore, it is important that the angels trust those entrepreneurs and that they have a “good chemistry” to work properly together. To have confidence in an entrepreneur is also important to reduce the information asymmetries and the resulting lack of information. Generally, the entrepreneur knows more about his start-up, ideas and plans than the investor. Consequently the business angel has to be sure that he is well informed about the intentions of the entrepreneur. Moreover, business angels tend to have less interest in entrepreneurs who lack enthusiasm.

This may be because if an entrepreneur is not enthusiastic about his product or service, the start-up will less likely succeed. One business angel, when interviewed, made very astute comments on the criterion “achievement

¹ Note: respondents ranked variables: 1 = very important; 2 = important; 3 = of concern; 4 = unimportant; 5 = very unimportant // n = 26

motivation”. He compared the investment process of an entrepreneur finding a business angel with a sports competition in presence of a talent scout. In this metaphor, the entrepreneur is the athlete and the business angel is a coach who seeks for new talents. If an athlete wants to win the competition and reach the winner’s podium, that is fine but not enough. The talent scout wants athletes who have the motivation to win the competition and set a new world record on top. Table 1 lists all investment criteria in connection with the characteristics of the “entrepreneur/management-team”. Six criteria of this group belong to the top 10, 4 head the list. This emphasizes again the importance of the entrepreneur during the decision process of business angels. Obviously, business angels take the entrepreneur’s characteristics as a good indicator for the willingness and seriousness of the entrepreneur’s intention and the start-up’s success. Moreover it strikes that the important entrepreneur’s characteristics are subjective² rather than objective. Objective criteria³ like the experience or a track record of the entrepreneur are ranked at the end. This may be because the business angel tries to support the entrepreneurs in many fields of activity and, therefore, they do not have to be particularly experienced. Additionally, the subjective criteria like enthusiasm, achievement motivation and frustration tolerance contribute to build up a

² Non measurable items

³ Measurable items

successful venture and thereby, develop the objective criteria like experience and track record.

| Entrepreneur's Characteristics | Overall Ranking |
|--|-----------------|
| Trustworthiness of entrepreneur | 1 |
| Enthusiasm of entrepreneur | 2 |
| Achievement motivation | 4 |
| Ability to communicate the product | 5 |
| Frustration tolerance | 9 |
| Self-confidence | 10 |
| Focusing on core product | 11 |
| Sympathy for entrepreneur | 12 |
| Conflict management skills of entrepreneur | 16 |
| Experiences of entrepreneur | 19 |
| Balanced management team | 20 |
| Track record of entrepreneur | 35 |

Table 1 Entrepreneur's characteristics in attracting a business angel (own illustration)

The criterion "balanced management team" is ranked 20th because business angels do not expect that the start-up team is balanced or complete. Van Osnabrugge stated that "a well-balanced management team was often impossible with firms at such an early stage of business formation, and [that business angels] believed that their own skills might help to balance the team" (Van Osnabrugge 1998: 248). Apart from that, business angels know "what team members need to be added" (Sudek 2006: 95).

The Product and Market

The second most important group of investment criteria is "Product and Market" and is shown in table 2. Van Osnabrugge was the first who combined the characteristics of the product with the characteristics of the market since they are closely related (Van Osnabrugge 1998: 255). Those criteria fill up the rest of the places in the list of the top 10 investment criteria. With a mean of

1.38⁵, the surveyed business angels ranked the criterion of “product’s sales potential” third. So the mean of the criterion “product’s sales potential” is very close to the mean of “trustworthiness” and “enthusiasm”. Generally, it is noticeable that the averages of the first six criteria are close together and therefore they all can be considered important and decisive. For the success of a start-up, the sales potential of a product is very important (Hill & Power 2002: 226). It is in the interest of every company to sell their product and to earn money in order to grow. To have the ability to grow, it is also of importance that the product has an overall competitive protection, even though the formal competitive protection in form of patents is not all that important. The surveyed business angels ranked the criterion of overall protection at the end of the first half, and the literature shows that this criterion is more important to venture capitalists (Van Osnabrugge 2000: 129).

Moreover, unique product features ensure the difference to other competitors in order to have more sales pitches or a completely new product. The literature research has shown that business angels prefer markets with a growth potential since “early birds are not always winners [...], but late comers are almost always losers” (Sahlmann & Stevenson 1985: 8). That the criterion of the growth potential is of importance can be confirmed with these results.

| Product and Market Characteristics | Overall Ranking |
|---|------------------------|
| Product's sales potential | 3 |
| Growth potential of market | 6 |
| Product meets pledged properties | 7 |
| Unique feature of product | 8 |
| Product's overall competitive protection | 15 |
| Market experience of entrepreneur | 17 |
| Barriers to entry for competitors | 26 |
| Niche market | 36 |
| Product's formal competitive protection (patents) | 37 |

Table 2: Product or market characteristics that attract business angels

The Financials

The third group of characteristics in attracting business angels is financials and is presented in table 3. Realizing financial returns is one of the primary motivation in this group (Van Osnabrugge & Robinson 2000). Some market characteristics, in fact, can also be seen as financial criteria, or affect financial returns directly, such as growth potential and product's sales potential. The "real" financial criteria are ranked behind the market characteristics as business angels possibly do not place so much emphasis on raw numbers; rather they trust in their gut feeling and the origin of financial success (growth, sales) (Van Osnabrugge 1998: 260).

An important criterion is the appreciable proportion of self-financing by the entrepreneur, which has not analyzed in previous research. This criterion was added after the literature research and the resulting question whether it is important for entrepreneurs to make their financial contribution at the beginning of a venture. As is known, a funding gap arises between the financing of founder, family and friends and venture capitalists, which business angels can bridge. As the criterion is ranked on place 14 with a mean of 2.12⁵ it

is important to some extent. So, what exactly is an appreciable proportion and how much will the entrepreneur have to invest in the start-up? Interviewed business angels said that it can be considered an appreciable proportion when the entrepreneur invests a larger part of his own savings into the venture and therefore makes sacrifices to start the venture. They further said that with self-financing, the entrepreneur demonstrates his willingness, his achievement motivation and his self-confidence to push the start-up to success. Moreover this investment teaches the entrepreneur the value of money.

| Financial Characteristics | Overall Ranking |
|--|-----------------|
| Appreciable proportion of self-financing by entrepreneur | 14 |
| Perceived financial rewards | 18 |
| Ability to reach break-even without further funding | 21 |
| Low overheads | 22 |
| Size of investment | 24 |
| Low initial costs to test market | 25 |
| High margins of the business | 28 |
| Low initial capital expenditures | 31 |
| High ratio of investment to the total volume | 33 |
| Term till exit | 34 |

Table 3: Financial characteristics that attract business angels

Van Osnabrugge (2000) states that business angels are more concerned about financial variables, which affect day-to-day business. This is caused by the lack of trust in the experience of entrepreneurs and the extensive experiences business angels have (Van Osnabrugge & Robinson 2000: 134). Therefore, the criteria “ability to reach break-even without further funding” and “low overheads” rank highest in this group. Business angels want to be sure that their first round of financing is enough for the start-up to reach break-even. Although German business angels expect the duration of investments to be between 4 to 10 years, the criterion “term till exit” was ranked near the bottom

(Brettel et al. 2000: 167). Therefore, the criterion is of concern for most business angels, but is not a decisive one. This strengthens further the assumption that business angels like to invest their money in ventures (motivation ‘fun’), and financial variables are not the most crucial ones.

Other Business Attributes

In addition to the three main groups, some miscellaneous criteria are of importance in attracting business angels. Those concern mainly the business angels themselves (table 4).

| Other Business Attributes | Overall Ranking |
|---|------------------------|
| Investor’s involvement possible (contribute skills) | 13 |
| Investor’s strengths to fill gaps in business | 23 |
| Potential exit routes | 27 |
| Investor’s experience in the industry | 29 |
| Venture is local (geographically close) | 30 |
| Co-investors present | 32 |

Table 4 Other business attributes that attract business angels

The first two criteria further corroborate business angels’ motivation to support young entrepreneurs and to be involved with the entrepreneurial business. Therefore, the criterion “investor’s involvement possible” is ranked 13 and top in this group. This criterion may be important to the business angels because of the pleasure of being involved in a new venture; through their involvement, business angels try to steer the venture in the right direction. Wetzel & Freear stated that this involvement “can make the difference between success and failure for their investee firms” (Wetzel & Freear 1996). The business angels were also asked about their way of involvement (table 5). The most intensive involvement is with the strategic orientation of the start-ups. With their professional experience as entrepreneur

and business angel, they help to develop the investee ventures. This result is rather contrary to the findings of Brettel (Brettel et al. 2000). In his set of 48 business angels, only 11 percent rated strategic orientation as a contribution to the venture. The difference may result of the dissimilar method design, which was used for this question. The second most important involvement is the one of bringing in contacts and networks. The network of contacts may contain connections to industry, the financial world and miscellaneous experts, such as lawyers, accountants and consultants.

| Involvement of Business Angel | Mean⁴ | SD |
|--------------------------------------|-------------------------|-----------|
| Strategic orientation | 1.77 | 0.710 |
| Networks/contacts | 1.88 | 0.952 |
| Coaching | 2.04 | 0.871 |
| Financial know-how | 2.27 | 0.827 |
| Industry/sector know-how | 2.50 | 1.068 |
| Organizational development | 2.54 | 0.811 |
| Management | 3.00 | 1.058 |

Table 5 Way of involvement of business angels

The presence of potential exit routes has a mean of 2.65⁵ and, therefore, this criterion is valued between “important” and “of concern”. Some interviewed business angels stated that it is important to see some sort of potential exit routes even though they are not fully developed in most cases. However, the literature shows that venture capitalists are significantly more attracted to

⁴ Note: respondents ranked variables: 1 = very intensive; 2 = intensive; 3 = moderately; 4 = not intensive; 5 = not at all // n = 26

“potential exit routes” and investor’s experience in the industry” than business angels (Van Osnabrugge 1998: 269). The criterion “venture is local” can be connected to the other results of the study, as the major part of surveyed business angels has invested in ventures, which are more than 50 kilometers away from their home, the criterion “venture is local” is not the most important one for them.

The surveyed business angels invest often (34.6 percent) or occasionally (38.5 percent) with co-investors. Nevertheless, it is not a motivating investment decision criterion for all angels. Some interviewed business angels stated that they only invest with other business angels they know personally. The most important advantage of investing with another angel is when the co-investor has a different key area of professional experience.

Summary

A summary of all investment criteria including the ranking of the data is given in table 6.

To see whether there is a relationship between the experience of business angels and the investment decision criteria, several correlation analyses were performed. First, the business angels’ experience was evaluated on the number of founded companies, in a second run on the years of being active as business angel. The analyses showed no significant relationship between the experience of the surveyed business angels and the investment criteria. However, a link between the variable “number of founded companies” and the investment criteria “enthusiasm of the entrepreneur” as well as “product’s sales potential” could be found. If the business angels are grouped into inexperienced and experienced investors (concerning their career as entrepreneur) dependent on the number of founded companies, the importance of the two investment

criteria “enthusiasm of the entrepreneur” and “product’s sales potential” increases with a growing experience of the business angels.

Also, no significant differences between the various industries and the investment criteria can be identified.

| Investment Criteria | Mean | SD | Rank |
|--|-------------|-----------|-------------|
| Trustworthiness of entrepreneur | 1.15 | 0.368 | 1 |
| Enthusiasm of entrepreneur | 1.15 | 0.368 | 2 |
| Product's sales potential | 1.38 | 0.496 | 3 |
| Achievement motivation | 1.46 | 0.582 | 4 |
| Ability to communicate product | 1.46 | 0.706 | 5 |
| Growth potential of market | 1.50 | 0.510 | 6 |
| Product meet pledged properties | 1.69 | 0.736 | 7 |
| Unique feature of product | 1.85 | 0.864 | 8 |
| Frustration tolerance | 1.88 | 0.864 | 9 |
| Self-confidence | 1.92 | 0.796 | 10 |
| Focusing on core product | 1.96 | 0.999 | 11 |
| Sympathy for entrepreneur | 2.08 | 0.744 | 12 |
| Investor's involvement possible (contribute skills) | 2.12 | 0.766 | 13 |
| Appreciable proportion of self-financing by entrepreneur | 2.12 | 0.993 | 14 |
| Product's overall competitive protection | 2.15 | 0.784 | 15 |
| Conflict management skills of entrepreneur | 2.19 | 0.801 | 16 |
| Market experience of entrepreneur | 2.31 | 0.838 | 17 |
| Perceived financial rewards | 2.31 | 0.549 | 18 |
| Experiences of entrepreneur | 2.42 | 0.758 | 19 |
| Balanced management team | 2.50 | 1.068 | 20 |
| Ability to reach break-even without further funding | 2.54 | 0,761 | 21 |
| Low overheads | 2.54 | 0.811 | 22 |
| Investor's strengths to fill gaps in business | 2.54 | 0.989 | 23 |
| Size of investment | 2.58 | 1.027 | 24 |
| Potential exit routes | 2.65 | 0.485 | 25 |
| Barriers to entry for competitors | 2.65 | 0.936 | 26 |
| Low initial costs to test market | 2.65 | 1.164 | 27 |
| High margins of the business | 2.69 | 0.788 | 28 |
| Investors experience in the industry | 2.69 | 0.884 | 29 |
| Venture is local (geographically close) | 2.81 | 1.021 | 30 |
| Low initial capital expenditures | 2.92 | 0.842 | 31 |
| Co-investors present | 2.96 | 0.824 | 32 |
| High ratio of investment to the total volume | 3.04 | 0.871 | 33 |
| Term till exit | 3,04 | 0.871 | 34 |
| Track record of entrepreneur | 3.08 | 0.688 | 35 |
| Niche market | 3.08 | 0.977 | 36 |
| Product's formal competitive protection (patents) | 3.19 | 0.849 | 37 |

Table 6 Summary of investment criteria

4.2 International comparison of top 10 investment decision criteria

This section will compare the findings of the actual study with previous ones. To the author's knowledge the following four studies on business angels' investment decision criteria are the only comparable ones. As in 1998 Van Osnabrugge's study about the investment criteria was the first one of its kind, Sudek's as well as this study about German business angels' investment behavior build right on the work of Van Osnabrugge. Hill's and Power's book "Attracting Capital from Angels" as well as the empirical study of Stedler and Peters are two broadly conceived research studies about business angels itself, with a chapter about the angel's investment decision criteria.

Comparing business angels of 3 different countries is difficult. The data-gathering process was not the same. Sudek limited his study to business angels of only one network, Tech Coast Angels (TCA), which is located in California. Van Osnabrugge had a similar approach as this study, i.e. contacting several business angel networks and using private contacts to business angels. Because of the following reasons, Van Osnabrugge took a critical view of an international comparison, "different time periods, different methodologies, different geographical locations and different degrees of heterogeneity within each group" (Van Osnabrugge 1998: 159). Therefore, no clear conclusions between the different business angels can be drawn, but a comparison with the top 10 investment decision criteria may discover trends of similarities or differences.

The range of the means in this study is similar to the studies of Van Osnabrugge (1.13 – 3.20) and Sudek (1.19 – 3.15).

| Investment Criteria | Van Osnabrugge & Robertson (2000) | Hill & Power (2002) | Sudek (2006) | Stedler & Peter (2002) | Brandenburger et al. ⁵ (2013) |
|-----------------------------------|-----------------------------------|---------------------|----------------|------------------------|--|
| Origin of Business Angels | U.K. n = 118 | U.S. | U.S. n = 72 | GER n = 232 | GER n = 26 |
| Enthusiasm of the Entrepreneur | 1 | | 3 | 4 | 2 (2) |
| Trustworthiness of Entrepreneur | 2 | | 1 | | 1 (1) |
| Product's Sales Potential | 3 | | 5 | | 3(3) |
| Expertise of the Entrepreneur | 4 | 1 | 2/6 | 1 | 19 (11) |
| Liked Entrepreneur upon Meeting | 5 | | 14 | | 12 (6) |
| Growth Potential of the Market | 6 | 2 | 7 | 2 | 6 (4) |
| Quality of the Product | 7 | | | 3 | 7 (5) |
| Return on Investment | 8 | 7 | 8 | 5 | 18 (10) |
| Presence of a Niche Market | 9 | | 20 | 9 | 36 (26) |
| Track Record of Entrepreneur | 10 | | 12 | 6 | 35 (25) |
| Proprietary Nature of the Product | | 3 | 10 | | 15 (8) |
| Size of the Market | | 4 | | | |
| Presence of Barriers to Entry | | 5 | 9 | | 26 (17) |
| Nature of the Competition | 17 | 6 | 13 | | |
| Industry the Venture is in | | 8 | | | |
| Stage of Company Development | | 9 | | | |
| Potential Exit Routes | 24 | | 4 | 7 | 27 (18) |
| Achievement Motivation | | | | | 4 |
| Ability to Communicate Product | | | | | 5 |
| Unique Feature of Product | | | | | 8 |
| Frustration Tolerance | | | | | 9 |
| Self-Confidence | | | | | 10 |

Table 7 Comparison of Top 10 investment decision criteria

⁵ (1) – (26): This study includes new investment decision criteria, which have not been considered before in any other study. The ranking without brackets includes those new investment criteria, the ranking with brackets excludes the newly introduced investment criteria and contains only those, which are present in the Van Osnabrugge & Robertsons (2000) study.

The three most important criteria, “enthusiasm of the entrepreneur”, “trustworthiness of the entrepreneur” and “product’s sales potential” are identical for German and British business angels. Only the order of the first and second criterion is reversed. The top criterion of American and German angels is identical, “trustworthiness of the entrepreneur”. The Americans ranked the criterion “enthusiasm of the entrepreneur” third. As a result it can be stated that the two characteristics of entrepreneurs, “enthusiasm” and “trustworthiness”, are the most important criteria, which attract business angels from the United States of America, Great Britain and Germany alike. Upon further consideration of the criteria it becomes apparent that only two more criteria, namely “growth potential of the market” and “quality of the product/product meets pledged properties” match with British angels. There are two reasons for this: First, the newly introduced criteria, which were derived from the business angels in the pilot study or from literature research not surveyed in the comparing studies. This mixes the ranking. Secondly, the distributions of mean values differ from both the U.S. and U.K. studies. Therefore, the ranking may be different, but in fact the mean values are similar.

For further comparison based on the ranking, the newly introduced criteria are excluded. The new ranking of German business angels’ investment criteria is listed behind the original ranking in round brackets. Now there is a greater overlap of similar ratings with British angels, namely the criteria “sympathy for entrepreneur”, “growth potential of market”, “quality of the product” and “return on investment”. In general, German business angels tend to invest more like British angels rather than American angels.

This general tendency is supported by the comparison of the individual mean values. From the perspective of German business angels, the average deviation

for investment criteria is 0.24 to British business angels and 0.42 to American business angels. While comparing the means, it stands out that in 6 of 20 cases the mean values of German and British angels are very similar, in another 7 of 20 cases the criteria's mean value are similar and they differ on average by 0.18. The comparison of German and American business angels reveal that only 3 of 19 cases are very similar, in 5 of 19 cases they are similar, and differ by 0.18 on average.

Besides these similarities there are also some differences between German business angels and their international colleagues. The first big difference arises between German and American business angels when it comes to the criterion "potential exit routes". German angels ranked this criterion on place 18 (mean 2.65), whereas American angels ranked it on place 4 (mean 1.47). A t-test yields that the two values differ significantly ($p = 0.000$, 99 percent confidence interval). A reason for this difference may be that the life cycle of start-ups is getting more short-lived. In the United States, where the "spirit of entrepreneurship" is older, this process is more advanced than in Germany. Therefore, the American entrepreneurs and business angels may be more serious about potential exit routes than German angels.

A further difference is in the criterion "investor's involvement possible". From a t-test results that the two values differ significantly ($p = 0.000$, 99 percent confidence interval). German business angels ranked it on place 7 (mean 2.12), whereas American angels ranked it 25 (mean 3.15). Possible reasons or explanations for the low desire of being involved could not be found in the literature. But again it may be related to the fact that for German business angels, getting involved in ventures is more in the nature of a hobby and that the support for entrepreneurs through their experience is very important to them. Due to a lack of literature on the characteristics of American business

angels, no comparison with the amount of time spent within the venture can be drawn. But as 23 percent of German business angels support their investee ventures with more than ten days and 34.6 percent with five to nine days, and with the indications in the literature taken into account, it can be assumed that the work quota of American angels is not higher.

The last difference is in the “track record of entrepreneur”. For German business angels this criterion is only of minor concern (rank 35, mean 3.08) whereas British and American angels rated it as important (mean 2.12 and 2.0).

5 Discussion

Even though the original questionnaire has been revised in a pilot study, this study shows similar results to the Van Osnabrugge survey. A more in-depth understanding of investment criteria can improve the overall outcomes in several ways. First, the entrepreneurs will benefit from the greater understanding of business angels’ investment decision process as they can adjust their process of getting financed accordingly. Second, German business angels can compare and reconsider their own investment process and their investment decision criteria.

First, it can be argued whether 26 business angels are representative for about 5,000 business angels in Germany (BAND 2013). Other studies on this topic about business angels surveyed 48 to 232 business angels, but it has to be considered that the budget, timeframe and the number of researchers who conducted the survey were larger. Second, an even distribution of surveyed business angels across all states of Germany could not be achieved; some states do not appear in the study at all. Although all business angel networks listed in the Business Angel Network Germany have been contacted, some of them have refused to forward the survey. A longer timeframe for the survey

could have led to a higher acceptance and response rate. With that it would have been possible to draw more accurate conclusions on the characteristics of German business angels. Third, the design of a self-reported survey may be an issue of accuracy. It is possible that the respondents have taken pains to deliver “socially acceptable” replies. Lastly, a self-selection bias has to be acknowledged, which may have led business angels to select themselves into the survey who rather have a more altruistic investment philosophy and those business angels with a pure return focus have not responded, as the participation in the survey does not yield immediate financial returns.

6 Conclusion and Outlook

This study addresses a gap in current German literature about business angels. It surveys the investment decision criteria of German business angels and thus sheds light on their investment process. No matter whether the investment was made in Germany, Great Britain or the United States of America, the two most important criteria to the business angels are characteristics of the entrepreneur, being “trustworthiness of the entrepreneur” as well as “enthusiasm of the entrepreneur”. The findings confirm the results of Sudek’s study “angel investment criteria”. As investing in start-ups is more like investing in people, these two criteria give some indication about the entrepreneur and his willingness to make the company successful. This study includes more investment decision criteria than other comparable studies. Those additional criteria were well chosen because German business angels ranked the newly introduced criteria at top places. This does not mean, however, that international business angels would not consider them as important. After a closer look at the ranking of the investment criteria, the following conclusion can be drawn: it is particularly the entrepreneur and his

characteristics, such as enthusiasm, trustworthiness, achievement motivation, ability to communicate the product and self-confidence, which attract business angels. After these entrepreneur-focused aspects, the product's sales potential with its unique product features is of second most relevance.

One possible step following this study is to address the above-mentioned limitations and develop the design of the survey further. Therefore, a larger sample is needed to verify the findings. Due to the invisibility of the informal venture capital market and especially of the business angels, several research institutes all over Germany ought to conduct a study together. This would increase the credibility, the response rate and reduces the flood of polls, which many business angels complained about.

In order to get even more insight in the investment process of business angels, the top criteria could be analyzed in more depth. All studies about research investment criteria are about the investor's point of view, what criteria he thinks are important. In a long-term study monitoring the investments, the correlation of high-ranked investment criteria and the success of ventures and these criteria could be analyzed. Further information about the investment process will help entrepreneurs to gain a better understanding what business angels are looking for and to achieve success with their start-ups. Business angels will be able to review their decision process; and all this may lead to a better overall investment process.

Especially because the informal venture capital market is still in its beginnings, it is important to understand the processes of this market. Some business angels stated that for further growth of the informal venture capital market in Germany, the economic and legal conditions have to be changed. As an answer to the question, which difficulties business angels may become in future, one business angel answered "developments like Kickstarter".

Kickstarter or Y Combinator are crowdfunding platforms, which are receiving more and more attention because they allow everyone to invest in start-ups.

While these threats exist, the informal venture capital market in Germany will continue to grow and will play an increasingly important role in the seed financing of new ventures. With more successful start-ups in the future, more entrepreneurs can act as business angels in the future and support future entrepreneurs.

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Sebastian Hoppe & Stefan A. Uhlich

Is the process of business formation a business process?

1 Introduction

Today effectiveness and efficiency are becoming more and more catchwords for the economic world. Followed by the effectiveness, the efficiency represents the measure of the success of the company.¹ Consequently, a company's success in the market is determined by effective (and efficient) processes. A forceful method of strategic and tactical management to achieve a process to become more effective is business process management. It's target is to satisfy the customers and other interest group's needs, and contributes significantly to the achievement of the strategic and operational goals of the company (Schmelzer & Sesselmann 2010: 6).

To be successful in economic activities it is essential to perform processes effective and efficient (Zairi 1997: 78). The formation of a business is a process itself. It consists of many little and bigger tasks in a certain sequence. Due the start-up is in centrality itself, post- and pre-start activities also belong

¹ Drucker defines the difference between effectiveness and efficiency as the difference "*between doing the right things and doing things right*" (Drucker 1963: 53).

to the process (Fueglistaller et al. 2012: 33f). Undoubtedly, these three phases are different for each individual business formation. By writing this paper we suggest that there are existing routines which can be handled by business process management.

First of all we want to give a short definition of a process itself and characterize the business process briefly (see chapter 2). Chapter 3 delineates the process of business formation. Thereafter we want to examine at the example of selected kinds of business formation whether the process of business formation is consistent with a business process (see chapter 4). If it is so, the process of business formation can be organized and improved by business process management. The arising result and its implementation are given in chapter 5.

2 Definition of a process and a business process

Companies aim to create performances, which requirements meet the customer wishes and needs. Therewith the economic success of an enterprise will be ensured by commercialization of these performances. Performances are the output of processes. These performances can be also products and services (Schmelzer & Sesselmann 2010: 62).

Processes are structures of action (Davenport 1993: 5). In that way a process describes a procedure that is to say the flow and the transformation of material, information, operations and decisions (Osterloh & Frost 2006: 33). *“So a process is simply a structured, measured set of activities designed to produce a specified output for a particular customer market”* (Davenport 1993: 5). The elements of such a structure are tasks, their administrators, materials and information, which are connected by logical entailments. The structure of a process has a defined

frame which is distinguished by a starting point (input) and a result (output) and serves a value for customers (Fischermanns 2009: 12).

In conclusion of defining a process, there are five essential parts of that structure:

- An input and an output,
- the customer,
- the value (for the customer),
- elements with logical entailments and
- (different) dimensions² (Fischermanns 2009: 12).

Business processes are processes, too. Nevertheless, not every process is a business process. A clean classification has not been found and in that way the scientific references display many various definitions, more or less different.

In accordance to Gaitanides (2007: 21-23) and Osterloh & Frost (2006: 33) business processes are marked by the bundling and the structured sequence of cross-functional activities. Business processes allow an enterprise to create the output. The created output is determined by explicit and implicit goals for external and internal receivers/customers of the venture (Rosenkranz 2006: 3). It is essential to meet the customer's needs to assemble the operative and strategic goals of a company (Schmelzer & Sesselmann 2010: 6).

² Dimensions of processes are time, space and terms of quantity (Fischermanns 2009: 18 *and* Rosenkranz 2006: 7).

Among the essential parts of a process, business processes also have a strategic focus, to aim the output creation, the customer orientation and a defined point of beginning and of ending.

3 The process of business formation

The formation of a company isn't a static state, it's a dynamic procedure which is determined by a logical sequence of action from the beginning (first input) until the end (first output) and creates value to a "customer". Therefore the formation of a company meets all requirements of a process (Fischermanns 2009: 12). Thus it can be mentioned as a process executed by an entrepreneur who realizes an opportunity (Fueglistaller et al. 2012: 34).

This process normally embraces a preparation and planning phase, the start-up phase and a growth phase (Brandkamp 2000: 23). Some authors only declare the preparation and planning phase and the start-up phase as the process of business formation, others break up the process up to eight phases (Gruber, Henkel & Witzler 2002: 16). It is obvious that the difference between all those phase models is only the kind of fractionation or pooling of sections (Freiling 2006: 155). As in figure 1 can be seen, Volkmann & Tokarski (2006: 49-52) try to split the three main phases into shorter self-contained processes. The terms, sequences and fragmentations of those sections are determined by the complexity of the business idea, the branch, the skills and the environment of the nascent entrepreneur (Leiner 2007: 47)

The preparation and planning phase starts with the first idea and ends with first business activity, specified as first sales (Mertens & Kohl 2009: 333). Therefore it is necessary to plan a lot of details and to make some critical decisions, for example decisions about the location, the organization and legal structure of a company (Klandt 2006: 53). Certainly every planned and decided

detail can be seen as a little process itself. The same applies to the start-up phase which contains all formal activities to starting up a business, for example the business registration and the application for a tax number (Mertens & Kohl 2009: 333), and the growth phase which contains all business activities itself, for example the sound accounting practice and ordering assumption (Klandt 2006: 53). For a detailed list of essential duties a (nascent) entrepreneur has to do and embarrassments he has to cope with see Lang-von Wins et al. (2002: 108-116).

It can be summarized that the business formation consists of many sub-processes (see figure 1). The whole process seems to be individual for every start-up activity, however the sub-processes can be seen as standardized construction kit elements, which could represent business processes.

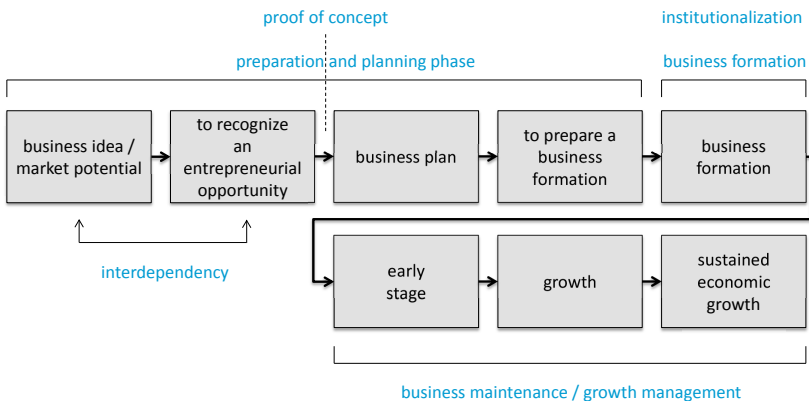


Figure 1: The process of business formation (Volkman & Tokarski 2006: 50)

4 Is the process of business formation a business process?

There are a lot of different kinds of and views on business formation defined in literature. In this paper we only want to deal with some of them: Distinct business formation, franchise and habitual entrepreneurship.

A distinct business formation is the classical one which establishes new capacities and creates a new output (Becker & Dietz 2002: 237f). Thinking about the process of a distinct business formation we only find two compliances with the four criteria of a business process: The strategic focus to realize an idea by starting up a business and the business itself which can be interpreted as the created output (Fueglistaller et al. 2012: 36-38). It is open to dispute, if the (nascent) entrepreneur himself could be considered as an intern customer, but finally due to the fact that there isn't an end point, because of the never-ending growth phase (Drumm & Dowling 2002: 15), we can note not that the formation of a distinct business is a business process.

What about a franchise? A franchise is (in many cases) a distinct business formation with the exception that a franchise always depends on the franchisor and a franchise agreement (Volkman & Tokarski 2006: 32). Due to the fact that the franchise agreement has contractually agreed points of beginning and end, a third criterion is consistent (FRANDATA 2000: 116). – But what about the customer orientation? Therefore the question whether the franchisee is a customer or not has to dispute. From the franchisors point of view of course he is! From the franchisees point of view he can't be one himself (Gaitanides 2007: 68f). Subsequently we can note that the formation of a franchise is a business process only from the franchisors point of view.

Habitual Entrepreneurs are *“those individuals who engage in multiple start-ups, management buyouts, management buy-ins and combinations of these activities”* (Wright et al. 1997: 251). Assuming that a habitual entrepreneur starts a lot of distinct

businesses, the criteria of strategic focus and output creation are true again. The fixed point of beginning always is the point of the business idea. But only when we assume that a habitual entrepreneur sells his business at a well-defined instant of time (for instance at the breakeven) also a fixed end point can be determined. And in this case also a customer can be detected obviously – the company or guy who buy the business. Therefore habitual entrepreneurship can be noted as a business process.

5 Conclusion

As we have shown, the process of business formation isn't a business process at all. Some kinds of business formations offer striking parallels in their detailed activities. Especially when the process of business formation is more a service than the tasks an entrepreneur has to fulfill, it seems to be a business process and can therefore be controlled by business process management.

Examples of these kinds of business process services are the routinized behaviors of habitual entrepreneurs and franchisors. These actors try to improve their processes in terms of the economic principle. Hence these groups can benefit from a matured business process management.

Other stakeholders who clearly profit from an installed business process management are corporate venture capital firms which clearly are involved in the business formation process even if they did not promote it.

Further research has to find out how sub-processes can be converted into business processes. Therefor it is necessary to define or find out the points of beginning and end of each step of the stairs of business formation.

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Mareike Schmidt

Organizational Learning of 'Born Transnationals'

1 Introduction

Reality challenges the notion of chains of internationalization increasingly. Improvements in speed, quality, and efficiency of international communication and transportation reduce the transaction costs of multinational interchange progressively (Knight & Cavusgil 1996, 2004; Porter 1990). The advances in international communication and transportation simplify and shorten the process of firm internationalization (Oviatt & McDougall 1994). At the same time, international market opportunities arise for young firms and attract their attention (Andersson, Gabrielsson & Wictor 2004; Fillis 2007). Although there might be liabilities of newness, smallness, and/or adolescence for young firms in international business (Lee H., Kelley, Lee, J., Lee, S. 2012), transnational business activities are often able to successfully establish new ventures from an early stage of organizational development. If this model of instant internationalization is applicable, what are the basic cornerstones that make new ventures become competitive players in international markets? There may be different answers to this question. This paper focuses on the role of organizational learning in markets and, thus, acknowledges the role business relationships play to facilitate the adoption of external knowledge. More specifically, it is argued that attaining international competitiveness depends on the pace and the alignment of processes of external and internal learning of international start-ups. The absorptive capacity as introduced by Cohen &

Levinthal (1990) plays a pivotal role in the process of organizational learning. Insofar, the research question of the paper is whether and how far organizational learning and, particularly, the absorptive capacity helps international start-ups attaining competitiveness.

In the face of different archetypes of international firms (e.g. Bartlett & Ghoshal 1989), the paper concentrates on transnational companies and is in particular concerned with the so-called 'born transnationals' which will be introduced in more detail below. Little has been said on 'born transnationals' so far, in particular in terms of learning processes. In this respect, this paper seeks to explore the key causality outlined in the research question. To better understand the peculiarities of born transnationals, notably in terms of external and internal learning processes, we employ a conceptual approach. This conceptual approach is theory-driven for the sake of identifying core causalities and developing research propositions for later empirical work. Referring to resource-based and competence-based theory, we employ the Crossan, Lane & White (1999) model of organizational learning and the Freiling & Fichtner (2010) extension of the model to consider the debate on absorptive capacity.

The paper proceeds as follows: In the next section we introduce the debate on internationalization of start-ups in more detail, explain the peculiarities of transnational companies, and extract factors that explain internationalization of start-ups right from the inception. In this section we consider previous research in the realm of the topic. The follow-up section deals with illuminating the basic problem of the race to learn from a 'born transnationals' angle in the light of competence-based theory and the organizational learning

model mentioned above. Another section is dedicated to the development of research propositions and a discussion of the findings of the paper. Finally, a brief summary and outlook close this paper.

2 Born Transnationals – Their very nature and their learning challenge

Empirical evidence suggests that international markets can be more easily accessed by young firms (Andersson et al. 2004; Fillis 2007). Although there might be different liabilities especially in international business (Lee et al. 2012), new ventures are often able to cope with these challenges in terms of survival when employing transnational structures and principles. Against this background, this paper concentrates on so-called 'Born Transnationals' as young transnational companies that engage in international business from or near inception. This relatively new type of transnational corporations is already a part of business practice since many international new ventures (INV) adopted, intended or not, transnational structures. In academia, however, this archetype has been ignored. Insofar, this paper intends to shed more light on this type of INV.

Sometimes the debate on transnationality is related to issues of migration (Chen & Tan 2009; Portes, Haller & Guranizo 2002). If such a viewpoint is chosen, research deals with individuals rather than with organizational entities. To avoid misunderstandings, in this paper the transnational discussion refers to a particular governance structure of organizations in their business and social environment rather than to any kind of migration. The transnational company views the world as a common, global marketplace (Levitt 1983). Understood as an internationally distributed network (Bartlett & Ghoshal

1989), a transnational company has typically a limited commitment to the country-of-origin and transcends national boundaries by integrating value-added processes into heterarchical networks with multi-domestic location structures.

Compared to global enterprises, transnational corporations are typically not hub-focused, but more or less 'hub-less' networks with strong linkages among local units. Different from multinational companies, the local units of transnational companies do not act autonomously. Instead, the transnational type rests on a much higher level of interconnectedness among the local subsidiaries and between the local units and the headquarters structures. Against this background, transnational companies are aligned by an overall set of targets that can only be accomplished in case of internal alignment among centralized and local units. Sharing information and knowledge among the corporate units becomes a pivotal issue in this regard.

Keeping this in mind, we develop a deeper understanding of 'born transnationals'. This debate plugs in more recent discussions on the phenomenon of 'born globals'. Since the 1990s this phenomenon has gained attention. It challenges the stage theory of internationalization of firms, developed in particular by the Uppsala School (Bilkey & Tesar 1977; Cavusgil 1980; Czinkota 1982; Johanson & Vahlne 1977, 1990; Johanson & Wiedersheim-Paul 1975). The stage theory suggests that internationalization is an ongoing, gradual process over several periods of time, e.g. depending on psychic distance and/or resources available. However, more and more firms start operating internationally and globally with or shortly after inception without going through the phases of the traditional stage model (Bell,

McNaughton & Young 2001; Dickson 2007; Kuivalainen, Sundqvist & Servais 2007; Oviatt & McDougall 1997, 2005; Rialp, A., Rialp, J. & Knight 2005; Zuchella & Scabini 2007). Firms like these are called 'international new ventures' (Oviatt & McDougall 1994), 'instant internationals' (Litvak 1990), and 'rapid internationalizers' (Humerita-Peltomäki 2004) or simply 'born globals' (Knight et al. 1996; Rennie 1993). With growing research in this area, additional terms have emerged which all try to express the rapid speed of internationalization (Gabrielsson 2005).

Oviatt & McDougall's (1994) definition states, that an international new venture is "... a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries" (p.49). In a later publication they point out the decisive role of the commitment of resources and the direct investment in foreign countries (Oviatt & McDougall 1997) for the status of born globals. International new ventures with the particular profile of transnational companies as described above are thus called 'born transnationals'. For the purpose of clarity we state: *'Born transnationals' are start-ups with a limited commitment to the country-of-origin that represent heterarchical networks with multi-domestic location structures right from the inception phase. 'Born transnationals' are not hub-focused but arrange a high level of internal coherence by well-adapted and strong linkages among local units. These 'born transnational' firms are highly entrepreneurial and challenge the conventional theories of incremental or gradual internationalization.* The entrepreneurs of such firms have a global orientation from inception that developed from a global mindset (Harveston, Kedia & Davis 2000) which is in line with Knight & Cavusgil (2004) who state that the entrepreneurs have a borderless view of markets. 'Born transnationals' are newly founded firms with limited foreign

business and institutional knowledge and no domestic operations in the back. If foreign experience relevant to business issues is available, it is typically bound to the entrepreneur(s) so that it is not institutionalized, yet (Knight et al. 2004; Madsen & Servais 1997; Weerawardena, Mort, Liesch & Knight 2007). However, the knowledge base available drives the rapid internationalization process - with the founder as a centrepiece. The question is how firms can speed up the process of organizational learning on a global scale - as the potential key to successful establishment on international markets and competing in the race to learn. We refer to this open question in the next section by employing the Crossan et al. (1999) learning model.

3 A competence-based perspective on organizational learning

Typical streams of organization theory regard the firm as a safe port in the stormy and risky sea of competition - with a sound and final protection from opportunistic behaviour (Williamson 1985). In fact, firms might be to some extent a nexus of contracts. However, more recent approaches suggest that firms are at the same time learning entities (Kogut & Zander 1992, 1996). Equipped with a certain organizational ambience, firms employ more sophisticated modes of organizational learning (Freiling, Gersch & Goeke 2008). In firms people know each other quite well. Being aware of the necessity of cooperation, a sound mutual understanding makes people share tacit knowledge which would be simply impossible in typical markets due to lacking incentive schemes. Competence-based theory addresses the asymmetrical distribution of knowledge and personal skills directly and all the processes of knowledge exchange and learning for the sake of competence building that rests on organizational learning.

The competence-based theory of the firm (CbTF) (Foss & Ishikawa 2007; Freiling et al. 2008) assumes radical uncertainty with two different consequences: risks as the 'dark side' of uncertainty with problems such as opportunism, hold-up etc. and the 'bright side' with considerable opportunities of the market process to be discovered by alert and skilled players. As an evolutionary theory based on market process theory of the Austrian School (Kirzner 1973; Mises 1949), the other antecedents of the competence-based theory of the firm are (Freiling et al. 2008): subjectivism, human behaviour modelled according to the acting man ('homo agens'), temporal interconnectedness of actions/decisions ('time matters'), and moderate voluntarism, i.e. firms, although socially embedded (Granovetter 1985), are to some extent able to shape outer conditions the way they like. Competence-based theory adopts methodological individualism and, thus, traces back action in organizations to the individuals. However, by employing the 'explanatory individualism' (Kincaid 2004) competence-based theory is able to explain all social phenomena - and so organizational learning as well. In terms of the competence-based theory of the firm companies are open systems, fuelled by resources and capabilities, steered by a strategic logic of decision-makers, and constantly longing for the integration of promising external assets to upgrade the own endowment (Sanchez, Heene & Thomas 1996). Firms constantly develop and this motion is enabled by processes of competence building and leveraging. All these processes rest on knowledge and processes of organizational learning. Fiol & Lyles (1985) define organizational learning as the process of improving actions through better knowledge and understanding. This definition highlights the importance of acquiring and applying new knowledge for improved behaviour of the organization. Hirsch & Levin (1999) discussed the breadth of the organizational learning concept

where individuals, teams, as well as entire institutions are involved in. In this vein, research on organizational learning embraces a huge diversity of units of analysis, including individual learning (Argyris & Schön 1978), collective learning (Tucker, Edmondson & Spear 2002), and learning that is embedded in organizational processes and structures (Bontis, Crossan & Hulland 2002). Rather than focussing on a single unit of analysis, our research is devoted to the dynamic interplay among all the three mentioned levels.

Among the models of organizational learning (cf. Easterby-Smith & Lyles 2011 for an overview) Crossan, Lane & White (1999) directly address organizational learning on and between the above-mentioned layers and sheds light on the dynamic interrelationships. Thus, we refer to the Crossan et al. (1999) model henceforth. The model is consistent with CbTF's basic antecedents and reasoning (Freiling & Fichtner 2010) and describes processes of competence building along the three ontological levels of a firm, namely individual, group, and organization.

Crossan, Lane & White's (1999) framework on organizational learning highlights strategic renewal. Based on March (1991), the authors assume that such renewal involves exploration of new knowledge and exploitation of what has already been learned. So, the framework includes four basic antecedents: (1) there is a tension between assimilating new learning (exploration) and using what has been learned (exploitation); (2) organizational learning is a multilevel construct involving the individual, group, and organizational layer; (3) these three levels are linked by social and psychological processes: intuiting, interpreting, integrating, and institutionalizing; and (4) cognition affects action and vice versa.

According to antecedent (1), organizational learning involves a tension between exploration and exploitation (March 1971). Whereas March focuses more on the balance not on the tension, both sides of the interplay of exploration and exploitation are essential for organizations (March 1971). Exploration can be seen as a feed forward process of learning across the individual, group and organisation levels. Feedback processes relate to exploitation and to the way in which institutionalized learning affects individuals and groups (Crossan et al. 1999).

As for the antecedents (2) and (3), the '4I' framework contains four sub-processes that serve to link the three ontological levels (individual, group, and organisation) and locate learning within organisations. While intuiting and interpreting occur at the individual level as well as interpreting and integrating happen on the group level, integrating and institutionalizing take place on the organizational level (Crossan & Bedrow 2003). Thus, the sub-processes are to some extent level-specific and some of them overlapping so that spill-over effects can happen (Crossan et al. 1999). The 4I framework helps explaining that the competitive position of a firm is not static but rather dynamic by pointing to learning in organizations and markets.

The first step in the learning process is intuiting. Intuiting is defined as "...preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" (Weick 1995: 25) and takes place at the individual level. There are two types of intuition: The first type is expert intuition as the recognition of patterns that have been learned in the past and are now tacit knowledge. The second type is entrepreneurial intuition, where new connections and possibilities are discerned (Crossan et al. 1999).

The second step is interpreting as the process of explaining an idea through words or actions to oneself or others (Crossan et al. 1999). Once new insights are created, individuals tend to check them. To this end, they communicate with other people and, thus, share knowledge - consciously or not. Hence, this step takes place on the individual as well as on the group level (Freiling & Fichtner 2010). Interpreting is crucial to learning because trying to give meaning implies structuring and restructuring of knowledge. Insofar, a core challenge is the inter-personal transfer of tacit knowledge into explicit knowledge.

Integrating is "... the process of developing shared understanding among individuals and of taking coordinated action through mutual adjustment" (Crossan et al. 1999: 525). A shared understanding is created through dialogues and joint actions. Integrating involves generating new knowledge based on interaction among people as well as the refinement of previously learned knowledge. First informal structures evolve and prepare the ground for institutionalizing, the next step in competence building.

Through institutionalizing learning is embedded in the organization, its systems, structures, routines, and practices. Structures, systems, and procedures provide a context for interactions. Tasks are defined, actions specified, and organizational mechanisms put in place. The process of ensuring that routine-based actions occur is the final step of structuring the run of events of embedding and internalizing knowledge (Crossan et al. 1999).

The learning process involves two directions: the feed-forward and the feedback process. Feed-forward means the absorption and embedding of new knowledge that passes the test of usefulness to people, groups, and/or

organizations. New ideas and actions flow from the individual to the group to the organization levels. At the same time, the feedback process runs in the opposite direction and regenerates what has already been learned from the organization to group and to individual levels (Crossan et al. 1999). The feedback process has the function to refresh and to deepen what has been learned. In the context of transnational firms, the feedback process allows distributing knowledge internally across national boundaries which is decisive in the race to learn.

Freiling & Fichtner (2010) refine the Crossan et al. (1999) model by adding that the source of knowledge can be outside the firm as well. External knowledge needs to be accessed and integrated. For the sake of identifying and utilizing externally generated knowledge, a so called "absorptive capacity" (Cohen & Levinthal 1990; Todorova & Durisin 2007; Zahra & George 2002) comes to the fore. Cohen & Levinthal (1990) introduced the absorptive capacity as "[the] ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (p. 128). Therefore, the absorptive capacity is composed of three sub skills: acquisition, assimilation, and exploitation.

The acquisition refers to a firm's capability to identify and to acquire external knowledge that is relevant, crucial, and valuable to its operations. The assimilation corresponds to the firm's routines and processes that allow for analyzing, interpreting, and understanding the information obtained from external sources (Kim 1997). The exploitation implies the use and the implementation of acquired and analyzed knowledge in the firm's operations.

On the one side, the learning process works internally including the four steps intuition, interpreting, integration, and institutionalizing. On the other side, we have the absorptive capacity with the three sub-skills of acquisition, assimilation and exploitation. In the Crossan et al. (1999) model assimilation and integration activities are already considered. This, however, does not hold true for the acquisition and particularly the recognition of the value of external knowledge. Thus, whenever we refer to the absorption of external knowledge we should keep that in mind. Accordingly, we consider the 'recognizing the value'-step in the model of Cohen & Levinthal (1990) as a separate element of organizational learning and call it according to Freiling & Fichtner (2010) absorbing. Figure 1 illustrates this extension.

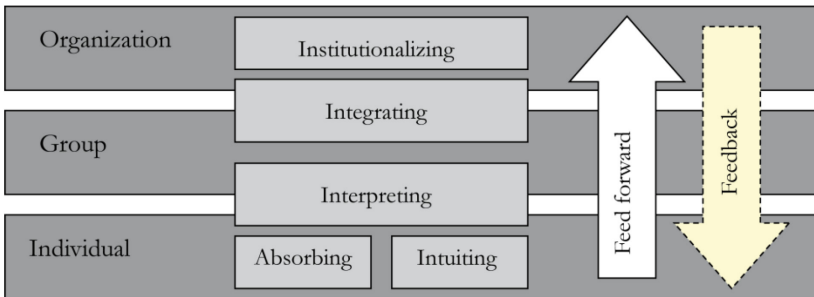


Figure 1: The Extended Learning Process of Crossan et al. (1999)

Source: Freiling & Fichtner 2010: 161

The model helps understanding the basic cornerstones of organizational learning and the interrelationships of the constructs. Based on this, we can proceed by employing this extended Crossan et al. (1999) learning model to develop a set of research propositions that can guide follow-up steps of

empirical work. We commence with the feed-forward process of learning in 'born transnationals'.

4 Developing research propositions

After the description of the learning process, we show whether and how far organizational learning, particularly the absorptive capacity, can help international start-ups to attain competitiveness.

Intuiting is the basic step of organizational learning on the individual level. The entrepreneur may have a certain impact on interpretations of people in the local units. In this vein, it is important to encourage the individuals to develop new ideas and to recognize patterns by the usage of prior knowledge (Sardana & Scott-Kemmis 2010). The entrepreneur acts as key personality, facilitator, role model, and sometimes even 'centre of competence' (Knight & Cavusgil 2009). In this role, (s)he supports trainings (e.g. a management development program or specific trainings for different social or cultural contexts) in local units to improve the expertise available. In this sense, the entrepreneur shapes the environment proactively and fosters expert intuition.

Proposition 1: By trainings, the entrepreneur of the 'born transnational' improves the expert intuition of the individuals and, thereby, stimulates organizational learning.

Through the process of interpreting individuals refine and develop intuitive insights. This process connects the individual and group level, but it does not spread to the organizational level (Crossan et al. 1999). Whether and how far new ideas and concepts penetrate groups and local units in host countries depends on social interaction and the social integration of individual

knowledge (Cohen & Levinthal 1990; Dyer & Singh 2002; Zahra & George 2002). Sharing newly developed knowledge with other people and interpreting largely depend on finding the 'right' partners to talk to. In many instances, individuals contact people they are familiar with. Not in every case, however, those people are in a position to make substantiated statements on the new ideas (Pedersen, Petersen & Sharma 2003). Insofar, people should be aware of the profile of other people belonging to the 'born transnational'. Due to the small size of new firms, it is much easier to be aware of these profiles. Brauner & Becker (2001) term the management of organizational learning processes usually as knowledge management and suggest that it takes particular modes of knowledge to identify adequate partners. The most important knowledge in this regard is the so-called 'transactive knowledge' (Brauner & Becker 2006; Wegner 1987) that relates to knowledge on other people, in particular colleagues. Interactions between members of different organizational subunits should lead to a network of organizationally interconnected transactive knowledge systems (Brauner & Becker 2001). Therefore, we suggest:

Proposition 2: Transactive knowledge fosters the identification of adequate people to share ideas with and, thus, fosters organizational learning in 'born transnationals'.

Integrating is crucial to leveraging learning processes from the group to the organizational level. In case of 'born transnationals', the transnational challenge for the new knowledge needs to be considered and accepted in the entire company and, thus, in all local units. If the process works, a shared understanding evolves through collective actions. Once again, a lot of distance - be it geographical or psychic (Cuervo-Cazurra & Genc 2008; Johanson &

Wiedersheim-Paul 1975; Nooteboom 2000) - is to be covered. Due to the central role of the entrepreneur, it is up to her/him to coordinate and control these collective actions. The entrepreneur is in the position to check and challenge the appropriateness of previously learned knowledge and to identify sound opportunities of organizational learning. She/he is often aware of application options in the entire transnational context and simultaneously in a core position as a facilitator of this process. Moreover, as a result of previous international experience the entrepreneur is aware of cultural peculiarities in the different organizational units. Therefore, the entrepreneur can be a core driver of creating mutual understanding by being a 'translator', facilitator, and sense-maker (Hordes, Clancy & Baddaley 1995). Obviously, there is a lot of facilitating functions of this process and it is up to the entrepreneur to organize the execution of these functions. Hence, we propose:

Proposition 3: Organizing the execution of facilitating functions by the entrepreneur supports the integrating process by creating a shared understanding and, therefore, fosters organizational learning.

According to Crossan et al. (1999), the process of institutionalizing is located solely on the organizational level. Knowledge is embedded in organizational routines and structures and spreads over the whole organization. Former explicit knowledge becomes well understood and part of workaday life. Basic assumptions and beliefs of workaday life that are shared by members of an organization are part of an organizational culture (Dodgson 1993). Freiling & Fichtner (2010) argue that organizational culture matters in case of organizational learning and competence building. Organizational culture is considered as a set of values, norms, guiding beliefs, and understandings

shared by members of an organization and taught to new members as the correct method to think, feel, and behave (Daft 2010). We should be aware that the process of developing an organizational culture is a rather long one. In case of start-ups it may take some time until cultural elements of people transform into an organizational culture. Although the corporate culture might be in a developing state within 'born transnationals' these cultural elements already work and, thus, need to be considered. In this regard, previous research points to a 'learning culture' (Bates & Khasawneh 2005) that facilitates learning processes. A learning culture captures e.g. the individual perception of the openness towards knowledge sharing and the availability of needed knowledge in the firm (Mahnke, Pedersen & Venzin 2004). Some of the criteria of a learning culture refer to larger organizations (e.g. flat hierarchical structures) - others, however, are relevant to 'born transnationals' as well. In this context, at least the ability to handle ambiguity in organizations and a high willingness for discussion constitute a learning culture.

Proposition 4: A learning culture fosters the institutionalizing process and, thus, facilitates organizational learning.

Above, we focussed the feed-forward dimension of the organizational learning process. One conclusion is that the entrepreneur of 'born transnationals' is involved in almost every step of the feed-forward process. Besides that, young firms develop first informal structures that support organizational learning as well. Next we will discuss whether and how far this holds true for the feedback process as well.

The steps involved in the feedback process are not precisely described in the literature. Freiling & Fichtner (2010) state that feedback is used to provide

institutionalized knowledge back from the organization to the individual. Crossan et al. (1999) point to the tension between assimilating new learning as the feed-forward part and exploiting/using what has already been learned as the feedback part - with an emphasis on the challenge of translating between institutionalizing and intuiting (cf. figure 1). They argue that institutionalization can easily drive out intuition. Besides that, 'born transnationals' need to care for applying in workaday life in the entire organization what previously has been learned (exploitation) without impeding exploration. Institutionalized knowledge should be available and applied in the home and the host countries. This implies that not only the initial local units receive feedback but units in other countries of a region are involved in this 'wheel of knowledge' as well. Feedback learning ensures that all members of the company will learn and use it (Vera & Crossan 2004). Crossan et al. (1999) argue that open communication supports this process. The same holds true for open-mindedness of people in 'born transnationals'. When new routines are established, motivated employees question established assumptions, look at problems from different angles, and approach familiar situations in novel ways (Sosik, Avolio & Kahai 1997). Thus, we propose:

Proposition 5: Open communication in organizations and open-mindedness of people involved facilitate the feedback process and, therefore, foster organizational learning.

So far, we focused the internal issues of organizational learning. Next, we address the absorption of external knowledge by highlighting the 'recognizing the value'-step according to Freiling & Fichtner (2010).

Cohen & Levinthal (1990) identify key antecedents of the absorptive capacity, namely prior related knowledge (basic skills and learning experience) and organizational factors, such as the structure of communication and distribution of knowledge. Absorbing involves alertness in connection with knowledge, skills, and evaluation criteria (Todorova & Durisin 2007). Prior related knowledge is required to recognize new knowledge (Cohen & Levinthal 1990). Capabilities are useful because an individual that has experience with one learning object is more effective with the next (Ellis 1965). Evaluation criteria are necessary in order to judge the value of the identified external knowledge (Todorova & Durisin 2007).

Cohen & Levinthal (1990) point out that "... the ability to evaluate and utilize outside knowledge is largely a function of the level of prior related knowledge" (p. 128). Prior knowledge and prior experience determine the information and sources of information to be accessed. The organisation's perception depends on existing search strategies that have been turned out to be valuable and, therefore, have been used several times. These search strategies are developed to find very specific information. Although often effective and invaluable, they might be defective for different information has no connection to prior knowledge. Furthermore, the prior knowledge determines also how information is interpreted and used (Cohen & Levinthal 1990; Todorova & Durisin 2007; Zahra & George 2002). As 'born transnationals' are newly founded firms with limited foreign business and institutional knowledge and no significant domestic operations in the back, search strategies do not exist on the organizational level and prior knowledge is thin on the ground. Thus, if search strategies are available, they are typically bound to the entrepreneur(s). We argue that the established individual search strategies for information

determine the direction for organizational search strategies. Therefore, we propose:

Proposition 6: Entrepreneurs with a clear direction of search strategies will foster the absorbing process of the 'born transnational' and so organizational learning.

5 Summary and outlook

Literature is unanimous on the importance of organizational learning (Barkema & Vermeulen 1998; Bartlett & Ghoshal 1987a, 1987b; Hitt, Hoskisson, & Ireland 1994; Huber 1994). International expansion can promote organizational learning (Barkema & Vermeulen 1998; Ghoshal 1987; McGrath, MacMillan & Venkataraman 1995) and facilitate the development of competences that can help achieving competitiveness (Dodgson 1993). What makes the difference in this regard is obviously the ability of young transnational firms to turn the 'wheel of knowledge', i.e. the dynamic interplay of feed-forward and feedback processes in the sense of the extended Crossan et al. (1999) model. It is neither enough to learn for exploitation purposes, nor is it sufficient to exploit available knowledge. The considerations above highlight the pivotal role of individuals in the organizational learning process. However, in particular in early steps of the organizational development, the entrepreneur is of utmost importance. While transnational companies are typically 'hub-less' in terms of a low commitment to the country-of-origin, 'born transnationals' are rather hub-dependent in terms of the entrepreneur(s).

Within the scope of this paper, we could not highlight individual attributes of the entrepreneur in detail. Literature tells us that those firms whose founders

have been exposed to internationalization in their previous employment may speed up the process of entering new markets (Sapienza, Autio, George & Zahra 2006). Before founding the firm, entrepreneurs of 'born transnationals' have already accumulated knowledge and built a personal absorptive capacity, that is relevant to internationalization. Thus, 'born transnationals' have to transfer and transform the individual knowledge and individual absorptive capacity into organizational knowledge and organizational absorptive capacity.

The development of an organization's absorptive capacity builds on prior investment in the development of its individuals' absorptive capacity. However, the firm's absorptive capacity is not simply the sum of the absorptive capacity of its people (Cohen & Levinthal 1990). The absorptive capacity applies not only to the acquisition and/or the assimilation of information by an organization but also to the organization's ability to exploit. Moreover, it depends on transfer of knowledge across and within subunits in the firm and on the structure of communication between the external environment and the organization, as well as on the kind and distribution of expertise within the organization. The firm's absorptive capacity rests on the individuals who stand at the interface of the firm and the external environment or at the interface between the subunits within the firm (Cohen & Levinthal 1990).

The paper addresses a topic that is still in an infant state. Thus, the nature of the paper is conceptual. For this point in time, this seems to be unproblematic. However, in case of follow-up steps empirical evidence is needed.

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Orestis Terzidis, André Presse & Fabian Metzeler

Creativity in Teaching and Learning – Existing Concepts and new Formats

1 Introduction

Increasing dynamics and complexity of a globalized environment lead to a rising importance of the ability to adapt and to anticipate individually and in social and organizational contexts. The entrepreneur, inventing and creating the future (Gibson 2012), is therefore playing an ever more vital role in today's societies. In order to succeed, she or he needs to re-discover and develop the existing knowledge and continuously implement new solutions.

Creativity is the ability to generate new and useful ideas (Sternberg & Lubart 1999: 3). As such, creativity is a necessary skill to be successful in the current and upcoming global settings (IBM Global CEO Study 2010). Creativity is recognized as one of the most important leadership skills to deal with complexity. Despite several disagreements in the research field of creativity, it is agreed that creative potentials can be developed (e. g. Plucker, Runco & Pritzker 2011). Notwithstanding its crucial role, current educational systems generally seem to develop creativity poorly (Jackson 2006: 2).

Since empirical studies focusing on the current situation in the entrepreneurship education could only hardly be found, we investigated how far and in which manner creativity is being integrated in the curricula of North American and European entrepreneurship education programs.

We start by describing the theoretical assumptions, on which our study is based. Then, after description of our methodology, we give an overview of the

results of our study. In the last part we will conclude on the necessity of the development of creativity in the entrepreneurship education and discuss effective ways of implementing creativity within entrepreneurship programs, allowing to ease its acceptance and to promote its diffusion.

2 Theoretical Foundation and assumptions

Everybody is creative, at an individual level and in every domain. Sternberg (1999) and Kaufman & Beghetto (2009) developed taxonomies to classify the different levels of creativity. In an entrepreneurial setting, however, the main question is whether a person is able to create something new, useful and sellable to the market (Ward 2004). Hence, a dichotomy of creativity levels may be sufficient for entrepreneurship education: either an entrepreneur is objectively creative and able to generate something original and useful to the market, or he is subjectively creative and only generates something original and useful for himself or his peer group. Since a new, useful and sellable idea is a *conditio sine qua non* for the entrepreneurial success, an entrepreneur needs to be objectively creative in at least one domain, and as a consequence entrepreneurship education needs to enable students to become objectively creative in at least one domain.

Creativity is affected by both internal and external factors and is a socio-individual phenomenon (Shalley, Zhou & Oldham 2004: 936). Among those factors intellectual abilities, expertise, motivation, thinking-styles, personality, society, field, culture and domain can be found, to mention only a few (Sternberg & Lubart 1991). The creative potential determines the level at which a person can be creative and influences the probability of creative action. However, without the right enablers, creativity will not occur. Those can either have a temporary character (e.g. sport activities or resting and

thinking) or a more constant character (e.g. social mobility). Therefore, "... creativity is context dependent, and arises in the interplay of a number of factors and requisites which can be supported and/or suppressed" (Ferrari, Cachia & Punie 2009: 47). Because of this tight intertwining, creative potential is not a guarantor for creative action. As the development of creativity, creative action subsumes a decision and an appropriate environment. Likewise creative action doesn't necessarily lead to a creative product since the field is determining the creativity of a product (Csikszentmihalyi 1999). Hence, creative products are neither in a linear relationship to creative actions nor to creative potentials. Consequently, a person's creativity should not be assessed through her or his creative achievements, especially in an educational setting (Runco 2008: 98). The creative potential of a person should be seen as a raw material to be shaped in order to increase the probability of creative actions and products.

Creativity is always a choice. A person *decides* to be creative (Sternberg 2005: 98). According to Lauer (1994) creativity is a distinct kind of problem solving. Referring to Newell, Shaw & Simon (1958) they distinguish creativity as "... a dynamic, heuristic, complex, and often chaotic group of problem-solving thought processes that are difficult, but not impossible to replicate" from other ways of problem solving which he defines as "... a logical algorithmic, ordered and rational group of thought processes that can be easily replicated". A person can decide whether to use existing paths and processes or to embark new paths. Likewise a person can choose to accept its current situation. Compliance can be understood as the opposite pole to creativity (Ehrensaff 2011: 7). Only creativity allows to break with the old and to drive development. Hence, from evolutionary perspective, creativity is a critical and

precious human asset (Urban 2004: 65) and can be characterized as the highest form of dealing with a situation, allowing humanity to progress.

The aforementioned multitude of variables results in high requirements for the development of creativity. In fact creativity can be developed (Plucker, Runco & Pritzker 2011: 456) but not controlled (Peat 2001: 2). The different levels of creativity have to be understood as developmental trajectory (Kaufman 2009: 46). Every person is born with a specific creative potential, which can be developed throughout her or his life. Whereas every person is mini-c and little-c creative, at least to some extent, only some people reach the level of pro-c or even big-C creativity in a domain (Kaufman 2009: 47). By reaching the pro-c level a person becomes objectively creative. This step requires a conscious decision, an active development and an appropriate environment.

In order to be effective, creativity development needs to act on several levels, transmit different types of knowledge and create a proper environment. Plucker et al. (2011) differentiate five components of creativity, which represent the targets of creativity development measures: cognitive components, emotional components, affective components, environmental components and interpersonal components. Based on these five components, we derive an approach for the development of creativity in university level entrepreneurship education. This approach is being discussed in the last section.

3 Method & empirical research context

In order to determine the current integration of creativity in entrepreneurship education curricula we made a qualitative analysis of twenty university-level entrepreneurship programs selected in the study *Good-Practice in der Entrepreneurship Ausbildung – Versuch eines internationalen Vergleichs* by the FGF e.

V.. In a first step we established a clear overview of the entire course offerings of the entrepreneurship education programs, having varying structures and anchoring. Afterwards, we identified and collected all available information online and contacted the universities in order to obtain further course-related information (e.g. detailed course schedules and course syllabi). In the following we started to analyze the collected materials and to search for creativity-relevant elements. We defined creativity-relevant elements as course-elements aiming at developing one or more dimensions of the aforementioned creativity framework, e.g. course elements intending to explain students the nature and benefit of creativity or explicitly developing relevant cognitive elements. After an initial screening, we selected courses containing relevant elements and conducted an in-deep examination of the course materials, in order to identify patterns and to create an overview of the various course contents, formats and further characteristics. In conclusion, we edited a survey with the goal to gain insights about the following aspects: (1) the respective creativity understanding, (2) the importance of creativity for the entrepreneur, (3) a self-assessment of the current contribution of the respective program to the development of creativity as well as its degree of intention to develop creativity and (4) planned measures to increase its development.

4 Result overview

Overall, we identified 90 creativity-relevant courses at 18 different universities located in Europe and North America. By conducting an online research and contacting the different universities, we collected 37 complete course manuals as well as 53 detailed course descriptions. We could not identify information for five courses appearing relevant and for courses of the University of Tel Aviv.

During our analysis we differentiated various groups of contents. On a generic level the programs taught as well practical as theoretical contents. Practical contents focus on operational knowledge, required during the individual creative process. Theoretical contents focus on factual knowledge. Whereas practical topics contribute to the development of students' cognitive and interpersonal abilities, theoretical topics allow increasing awareness and motivation and building a sound base for a future development and application of procedural abilities¹. We divided each group into different subgroups:

- Practical contents:
 - **Opportunity recognition** contents, discussing strategies to identify mismatches and needs, by screening for instance users and technology landscapes
 - **Idea generation & evaluation** contents, discussing creativity techniques and methods to generate and select new ideas
 - **Idea communication** contents, discussing methods to promote and sell ideas

¹ Please refer to Plucker et al. (2011) for a categorization of creativity development elements

- Theoretical contents:
 - **Individual creativity** contents, discussing theories of individual creativity and the creative process
 - **Group creativity** contents, discussing the motivation and management of creative teams
 - **Creativity in organizations** contents, discussing possibilities to foster creativity through culture and organization
 - **Creativity, innovation and entrepreneurship** contents, discussing the link between those three phenomenon

Generally, practical topics were taught more often than theoretical topics both within European and Nord-American programs. Almost every program included relevant practical topics, in particular methods to enhance students' abilities to recognize opportunities and to generate and evaluate new ideas. Theoretical topics were taught less frequently. In Europe, less than half of the programs contained theoretical elements.

Creativity-relevant elements are taught in distinct courses and also integrated within several other courses across the entrepreneurship curricula. We defined seven major course types containing creativity relevant elements:

1. **Venture development courses** focus on a company's creation process. In general, creativity relevant elements only represent a minor part of the syllabi. The focus lies on the transmission of practical knowledge, in particular the recognition of opportunities and the generation and the evaluation of new concepts
2. **Creativity courses**, completely focusing on creativity, discuss both practical and theoretical topics extensively

3. **Product development courses** generally grant a more important part to creativity relevant contents. The focus mainly lies on techniques to generate and evaluate ideas
4. **Introductory courses** introduce students to entrepreneurship. Hereby creativity is often presented as an integral part of the entrepreneurial process, without being treated extensively
5. **Opportunity recognition courses** focus on the analysis of markets, customers and competitors. Various methods important to the beginning of the creative process are being treated within those courses
6. **Innovation courses**, focusing for instance on innovation management, discuss creativity as a part of the entrepreneurial process
7. **Corporate entrepreneurship courses** mainly discuss theoretical topics as individual creativity and creativity within organizations

Creativity relevant elements appear to be well integrated into entrepreneurship education programs. Their frequent embedding in a context, especially in process-oriented courses as venture or product development courses, allows to reach a wider audience and to introduce students to creativity in a familiar environment.

Most of the identified course had highly active formats – formats allowing and expecting students to participate in the courses – using activity-based evaluation systems (e.g. evaluation by participation, group projects and presentations) and practice-oriented course elements (e.g. workshops, group projects & presentations).

We did not identify significant differences in between the offers for bachelor and master students but the amount of offered courses: courses containing

creativity relevant elements are more frequently intended for master students. In terms of content and course type, however, both offerings were similar.

Whereas no significant difference in terms of course content or structure was made out in-between American and European Universities, American Institutions typically had a larger course offering and discussed theoretical topics more frequently. The wider and more integrated offer of American universities lead us to the assumption, that creativity is developed in a more complete way in the United States.

Our survey revealed that not all programs explicitly intend the development of creativity. Whereas the University of Twente indicated having no intention in developing creative potentials, the EPFL recognized it as a secondary target and the Chalmers Institute of Technology explicitly aimed at supporting their students in fostering their creativity.

Our research discloses that the development of creativity is already partially integrated in good-practice entrepreneurship education programs and that universities generally agree on the importance of creativity to the entrepreneur. Most programs transmit practical knowledge to the students, enhancing their cognitive and interpersonal abilities. However, theoretical topics are often neglected, especially in European programs. Furthermore our survey revealed that the intentions of the different institutions strongly differ. This leads us to the question of how the development of creativity can best be promoted across and integrated within entrepreneurship programs, regardless of their size and resources.

5 Discussion

We believe that creativity is an essential asset for every entrepreneur and entrepreneurial thinking person and appeal to develop creativity in *every*

entrepreneurship education program. Therefore, it is essential to determine how to develop creativity *effectively*. In this way, potential barriers can be overcome (e.g. caused by the fear of a curriculum overload), and the development of creativity can be integrated into every program, regardless of its size and resources. In order to develop creativity in a *lean* way, it is important to recognize that a first step towards a better creativity development can be made with a small effort and by unleashing potentials hidden in and around an existing entrepreneurship curriculum.

In the first section we briefly described the aspects that should be considered while developing creativity according to Plucker et al. (2011). In an entrepreneurship education context those elements should be considered in a specific order. First of all, the right environment has to be created. “Creativity takes place within, is constituted and influenced by, and has consequences for, a social context” (Westwood & Low 2003: 236). Hence, without an appropriate environment, creativity can neither occur nor be developed. Once such an environment has been created, the right understanding, awareness and motivation need to be built. The understanding of creativity is crucial: a person not convinced of her or his own creative ability is less likely to be creative (Plucker et al. 2011: 458). Besides understanding, students also need the motivation in order to actively develop and apply their creativity. Therefore, they need to be shown the benefits of creativity. Only after understanding these, students will consider to act creatively. Since creativity requires a decision, it also requires motivation. This motivation can be unleashed within a curricular context. In a third step, programs should focus on cognitive and interpersonal elements. In order to act creatively, people need to apply the proper instruments. Since creativity is arising inside of an organism and is as well a psychological as a social phenomenon, we need to develop both

cognitive and interpersonal abilities. The more generic abilities should be complemented by domain-specific abilities; for an entrepreneur for instance, abilities as detecting specific customer needs and market gaps or anticipating future technologies will be of high importance. Abilities and strategies are supporting the creative process in different domains to a very different extend: an adapted selection has to be made to meet the requirements of an entrepreneurship education.

Relating this framework to the results of our analysis, discloses a weak point of current entrepreneurship programs: the second step – the discussion of theoretical knowledge and as such the creation of awareness and motivation – is often skipped. For one thing this bears the risk that students do not fully benefit from the improvement of their cognitive and interpersonal skills because of a lack of awareness. For another thing the development of practical abilities usually requires more complex efforts and formats (e. g. workshops or business case studies requiring extensive preparation). Because of this, programs might become more reluctant to enhance the development of creativity of their programs. If the development of creativity is considered to require a lot of resources and timeless programs will be willing and able to integrate it into their programs

Looking at the implementation process through an “effort-lens”, we therefore propose a path to increase the development of creativity within entrepreneurship programs in a *lean* way. The tight intertwining in between entrepreneurship and creativity (Berglund & Wennberg 2006: 369) leads to a in some extent naturally fitting environment. For many programs the establishment of an appropriate environment should, therefore, not require many resources, but the maintaining and improvement of the existing

framework. Ferrari et al. (2009) sets out a structured list of possible enablers to this.

A good understanding of creativity is crucial in order to raise awareness and motivation and can be created by teaching factual knowledge and clarifying the concept of creativity. The transmission of such knowledge can be implemented in existing courses and only require changes of a course's content. Introductory and generic entrepreneurship courses appear particularly suitable, allowing to reach a wide audience and to introduce students to this (often quaint) concept in a familiar context.

Developing practical abilities is subject to more extensive changes, requiring an active application and involvement of the students. Corresponding tools and techniques shouldn't only be taught in traditional lectures but as well in tutorials or workshops allowing students to actively use and foster their cognitive and interpersonal skills.

Not every program can implement all of those changes; however, both the establishment of a favorable environment and the creation of awareness and motivation can be performed with few resources. For this reason, we consider the first two measures as mandatory to every entrepreneurship education program. We believe that by overcoming this threshold, a first important step towards a wider development of entrepreneurial creativity can be taken.

In conclusion, a hybrid curriculum appears to be well adapted to foster creativity. The successful development of creativity does not exclusively rely on new and innovative offerings but as well on the existence of a suitable environment and a good integration of creativity into the existing curricula. Once the right framework has been created and the awareness and motivation of the students have been aroused, further steps focusing on the practical abilities can be fully effective. As such, increasing the creativity-developing

effect of a program can be regarded as a two-step approach; the first step only necessitates marginal resources and is feasible for every program. Besides assuring that the mandatory aspects are being considered, programs should take a closer look at the existing offerings.

The literature points out the strong link in-between creativity and entrepreneurship and highlights cognition, personality and knowledge-related similarities among others (Berglund & Wennberg 2006: 369). In fact, many entrepreneurial abilities are as well creative abilities (Parthasarathy, Doholi & Paulus 2011: 46). On this account, several creative skills are probably already being taught within entrepreneurship programs. However, since many of those elements are not indicted as being creativity-relevant, it is hard for students to perceive all existing possibilities to enhance their creativity. To avoid this lack of awareness and the risk of unexhausted development possibilities we suggest developing *a creativity compass* summarizing all possibilities to develop students' creativity in the existing curriculum. For this purpose, we suggest the following measures:

- Clearly tag creativity-relevant elements within existing entrepreneurship education courses in order to highlight all the possibilities to develop students' creativity
- Consider the integration of external creativity-relevant elements into the entrepreneurship education curriculum, for instance courses offered by other faculties or institutions (e.g. art and design faculties or graduate schools)
- Develop a creativity development guideline, presenting students all the existing possibilities and paths to develop their creativity within and around an entrepreneurship education program

Creativity is the raw material of the future (Könönen et. al. 2008: 3) and “[n]ovel and useful ideas are the lifeblood of entrepreneurship” (Ward 2004: 174). The development of creativity in current and future curricula is a necessity, especially for entrepreneurship programs. As entrepreneurship offers a well-suited framework to foster creativity, the target of the entrepreneurship education should be to take a leading position in this field.

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Tobias Michael & Martin Arnold

Entrepreneurship Education Evaluation

1 Introduction

The promotion of entrepreneurship and specific facets such as social entrepreneurship received increasing importance in German universities within the last years (Hofer et al. 2010; Brock & Steiner 2009; Gebel, Neusüß & Star 2009). Studies (OECD 2009; Hofer et al. 2010) highlighted the foundation of entrepreneurship centres and networks as successful progress of universities in Eastern Germany. However, effects of current entrepreneurship education programs (EEP) on entrepreneurial intentions and subsequent business start-up activities remain ambiguous. In addition, evaluation programs that permit a comprehensive picture on the causes and impacts of EEP are generally scarce (Hofer et al. 2010; OECD 2009; BDP 2010; Short, Moss & Lumpkin 2009). The latter points are closely connected because the development of high quality EEP should succeed best based on evidence. Reliable empirical evidence in turn is gathered through profound evaluations (BDP 2010; Lorz, Mueller & Volery 2011).

Typically, EEP ground on the assumption that entrepreneurial competences are learned and so can be taught. The participation endows with knowledge, mind set and skills that are supposed to lighten the prospects of entrepreneurial endeavours (Olos 2010; Wilson 2008; Brock & Steiner 2009). But the aim of such programs is not the actual foundation. Rather it is the increase of the intention to found (Fayolle et al. 2006). A review of literature suggested that EEP support the formation of intentions indeed (Lorz et al. 2011). If this is true, one finds it surprising that almost all EEP are exclusively

parts of business or management curricula (Vázquez-Burgete et al. 2012; same applies for social entrepreneurship courses, see Brock & Steiner 2009, Table 2). Without additional assumptions students of other disciplines should form entrepreneurial competences and intentions through EEP too. Thus, it seems reasonable to advance EEP and evaluation research in order to increase the number of actual and presumably more successful start-ups (Vázquez-Burgete et al. 2012). Taking steps towards this future, this paper will describe an interdisciplinary social entrepreneurship course for humanities and social sciences at the University of Erfurt. Social entrepreneurship can be understood as a specific type of entrepreneurship, as “a process of creating value by combining resources in new ways [...] to explore and exploit opportunities to create social value by stimulating social change or meeting social needs” (Mair & Marti 2006: 37). Furthermore, we introduce an evidence based approach to develop appropriate entrepreneurial education and evaluation programs. This paper describes and discusses whether this approach is effective and whether students from humanities or social sciences can also benefit from EEP.

2 Theory & Hypotheses

According to psychological standards intervention design and evaluation strategy both should be grounded on theoretical assumptions and available empirical evidence (Hager & Hasselhorn 2000). Since one practical aim of EEP is the increase of entrepreneurial motivation among students, theoretical presumptions can be derived from models explaining the emergence of motivation. In entrepreneurship research intentions to found one's own business commonly are considered as the starting point for entrepreneurship (Krueger 2009). Ajzen's (1991) Theory of Planned Behavior (TPB) is one of the most prominent theoretical frameworks for the prediction of

entrepreneurial intentions (Krueger 2009) and widely applied for the prediction of start-up intentions among students (Graevenitz et al. 2010). According to Ajzen (1991) behavioral intentions “... are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior” (p. 181). In line with this definition, entrepreneurial intentions can be regarded as indicators of start-up motivation. Moreover, they are the most immediate predictors of subsequent behavior. Increasing intentions go along with an increasing likelihood of behavioral performance (Ajzen 1991).

In the TPB intentions are determined by attitudes toward the behavior, subjective norms, and perceived behavioral control concerning the behavioral performance (Ajzen 1991). Attitudes reflect evaluative judgements towards the performance of a specific behavior, subjective norms refer to the perceived social pressure concerning the performance of the behavior, and perceived behavioral control indicates the degree to which a person believes, that the behavioral performance is under their control. The higher these predictors are, the higher the intention to perform the behavior in question (Ajzen 1991).

2.1 Research Model

In addition to the rather static application in prediction of entrepreneurial intentions, Fayolle et al. (2006) introduced the TPB as a framework for assessing the impact of EEP. Mueller (2011) recently demonstrated the potential of this model for the explanation of entrepreneurial intentions among students. Following these approaches we adopted the TPB for evaluation purposes.

In a subsequent exploratory analysis among students of humanities and social sciences, Michael (2012) developed an extended TPB model for the prediction

of entrepreneurial intentions and identified meaningful predictors within this population. Given a sufficient amount of prior deliberation, entrepreneurial intentions of target group members could be predicted from attitudes, subjective norms, perceived behavioral control, self-identity, and the degree of two subjective beliefs, first of actually having enough entrepreneurial knowledge and second of actually having a potential start-up idea. The latter one had no independent main effect on intention within the subsample with higher elaboration ($n=220$) rather its influence was fully moderated by attitude (Michael 2012). This means having a business idea alone is not sufficient. It must come along with positive attitudes toward the behavior. The research model of the present study is shown in Figure 1.

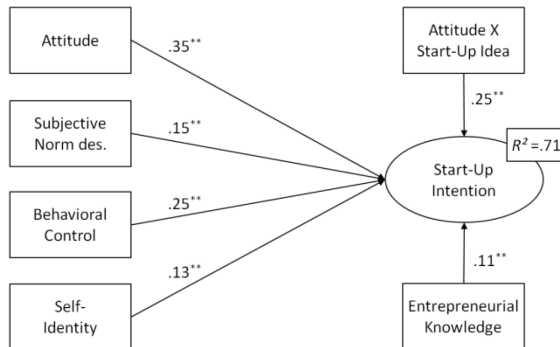


Figure 1: Research model for intervention design and evaluation (Michael 2012)

Notes. ** $p < .01$; $n = 220$; des. = descriptive Norms refer to the perceived behavior of others.

Furthermore, 54% of the total sample in this study ($N=600$; 80% female; $M_{age}=22$; $SD_{age}=2$; with 11% from economic related majors) stated that they would prefer social entrepreneurship in case of founding. Almost a third (34%) of surveyed students announced interest in an entrepreneurship workshop at their university. The same tendencies were observed for the subsample

($n=220$) with higher prior elaboration of entrepreneurship as potential career option. Of these students, 44% would prefer social business, and a total of 51% was interested in entrepreneurship training at the University of Erfurt (Michael 2012). Following an evidence based construction approach, we based our hypotheses and design considerations on these empirical findings.

2.2 Research hypotheses

It is assumed that the predictors of Michael's Model (2012) impact entrepreneurial intentions of students in humanities and social sciences significantly. Thus, an EEP to raise intentions should be effective by addressing these predictors. To test this assumption, the authors constructed an academic entrepreneurship course (as described in 3.1) with elements that tackle each predictor of the research model and conducted it as one semester course module. So the participation in that EEP should lead to an increase of entrepreneurial intentions compared to a similar course module with different learning objectives. Using a pretest-posttest-control group design, and assuming that all participants belong to the population in question, the stated presumptions transfer to four hypotheses. Hence, the first hypothesis was (Hypothesis 1): The mean pre-test start-up intention does not differ above chance between workshop group and control group.

The educational intervention was designed to impact on its participants intentions. Instead the course for control was meant to have no such effect. Consequently the second hypothesis claimed (Hypothesis 2): At post-test the mean start-up intention in the workshop group exceeds that of the control group.

The first two hypotheses implied that the educational intervention generated impact. So it should have been found that (Hypothesis 3): The mean start-up intention in the workshop group increases from pre- to post-test.

As argued above the participation in the control course should have left start-up intentions untouched. No, or random change in intentions should have occurred, explicitly (Hypothesis 4): The mean intention to found in the control group does not differ above chance from pre- to post-test.

3 Method

To test these hypotheses, we constructed an entrepreneurship course along the significant intention predictors (Michael 2012) and adopted evaluation design and measurement instruments as follows.

3.1 Development of the entrepreneurship course

An adequate course program should address each predictor of Michael's model (2012) for maximum impact. As a first point, the course had to offer reasons to establish favourable *attitudes towards founding a business*. To provide this, we announced a topic of special interest; a workshop to create a social business idea (see 2.1). Following their own interests and ideas should result in good subjective evaluations. Above this, working on the solution of societal problems, should be rated as meaningful and good. Furthermore, the final presentation ended in a celebration showing recognition of their work.

To adjust the *descriptive norm* concerning the relevant social reference group, we put the participants in the position of active entrepreneurs - motivated to do good. Working together with a big group of motivated as-if-entrepreneurs should alter the social norm, in particular by experiencing entrepreneurial activities as rather normal in their social context. In addition, all participants

interacted with several real entrepreneurs, and thereby received an even broader spectrum of entrepreneurial role models.

To *perceive behavioral control* on entrepreneurial tasks students needed to overcome convincingly and relevant challenges. They passed through a compressed founding preparation closing with a presentation of a sophisticated business concept. The course provided trainings in up-to-date methods, skills and knowledge, e.g. the business model canvas (Osterwalder & Pigneur 2009). Along the way the participants received constructive feedback and appreciation by experts and entrepreneurs. These aspects suggested that students should experience a greater controllability of entrepreneurial demands.

Aside from the core TPB factors the participants had to *identify themselves with an entrepreneurial perspective*. The interactions with entrepreneurs and the creation of the business concept made participants involved themselves in the endeavor and identify themselves as a potential entrepreneur.

As laid out above the participants received training in relevant entrepreneurial competences. By the end of the course they should hold even stronger *beliefs of actually having enough entrepreneurial knowledge*. And because the students elaborated their business ideas along with constructive feedback and persuasive appreciation, it becomes likely they would establish *beliefs of actually having a potential start-up idea* and discovers potential problems and needs.

The actual course program combined the measures described above with the demands of the creation of a business concept. The latter consisted of selected parts of a classic business plan (BMWi 2012). All content and criteria are adapted for social entrepreneurship reflecting the student's preference (see 2.1).

| Session | Duration | Content |
|---------|-------------------------|--|
| 1 | 2 hours | Introduction, Expectations, Goals |
| 2 | 8 hours | Assignment of the founder teams, analysis of societal problems, creation of business ideas and models |
| 3 | 8 hours | Definition of vision, goals and strategy |
| 4 | indefinite ^a | Consultation with the team's entrepreneur |
| 5 | 8 hours | Financing, liquidity planning |
| 6 | indefinite ^a | Consultation with the team's entrepreneur |
| 7 | 4 hours | Final presentation of all teams |
| 8 | indefinite | Self-directed compilation of the business plan and elaboration of the business idea's potential to resolve societal problems |

Table 1: The course of the Workshop with topics and durations

Notes. ^a dates for consultations with the counselling entrepreneurs had to be arranged by the students themselves.

These eight sessions were distributed over a five month semester with ample intervals in between for self-directed team work.

The treatment course was advertised in the university calendar for all faculties as a "(Social) Entrepreneurship" - create your own business idea workshop with personal contact to experienced entrepreneurs. A control group was recruited in a B.A. course in personnel psychology. In each course students had to do a term paper and received six ECTS credits. Participation was voluntary although after official registration the term paper was obligatory.

3.2 Evaluation Design & Procedure

The primary objective of the evaluation was to test whether or not and to what extent the objectives of the intervention have been attained (Hager 2000).

Therefore, we were particularly interested in the effects of the intervention on the start-up intentions of participants (see Hypothesis 2 & 3). For this purpose, we accomplished a pretest-posttest control-group study. Since self-selection is a core problem for EEP (Katz 2012), a control group was needed to keep this aspect in check (see Hypothesis 1 & 4). Since the subjects were not randomly assigned to groups, it was a quasi-experimental design (Hager 2000).

Data collection on pretest was done via paper and pencil at the beginning of the term. Posttest was set up as online survey after the completion of the business plan and submission of the term paper. Course and evaluation research took place during summer term 2012 between April and August at the University of Erfurt.

3.3 Measures

The questionnaire was based on the instrument developed in the exploratory study (Michael 2012) and extended for specific aspects from entrepreneurship research. It contained items designed to assess the four TPB constructs in relation to the behavior defined above: *attitude toward the behavior*, *subjective norm*, *perceived behavioral control*, and *start-up intention*. To measure start-up intention, the target behavior was defined as “founding one’s own company within five years after graduation”. As in the exploratory study *self-identity* was measured by two items. *Experiences* related to beginning entrepreneurship and *situational beliefs* concerning relevant aspects for start-up, e.g. actually having a potential start-up idea or actually having enough entrepreneurial knowledge to start-up, were measured by single items. Since these items were heterogeneous in content, they were not aggregated into a scale. Additionally, the *preferences* for entrepreneurial domains (business, social, or creative) were collected by a single choice question. For exploratory reasons, we also considered *opportunity*

perception (Ozgen & Baron 2007), *entrepreneurial self-efficacy* (McGee et al. 2009) and *entrepreneurial knowledge* (Shane 2000). Responses to all items were provided on a 11-point scale. Items were randomly spread in the questionnaire. Measures of age, sex, course, degree, term, code (for follow-ups), apprenticeship, previous work experience, internships, and previous start-up and freelance experiences completed the survey.

4 Results

To evaluate the effects of the course we first checked for appropriateness of the research model and actual entrepreneurial preferences in workshop group. Then the quality of the evaluation instrument was proven (Table 2). After consideration of the sample characteristics (Figure 2) and descriptive parameters (Table 3 and Figure 3), hypotheses were tested via inferential analysis (Table 4).

4.1 Quality Checks

Prior to the data analysis we checked the appropriateness of the research model for the workshop group. Therefore, the median score of elaboration, which is the amount of prior consideration of entrepreneurship as a career option, was computed. Workshop group members ($n=22$) indicate a median prior consideration of $Md=6$ in pretest and $Md=2$ for control group ($n=8$). Since sufficient prior consideration is a precondition for application of the research model, the requirements were met. Within the workshop group the preferences for entrepreneurial domain were nearly equally distributed ($business=8$; $social=7$; $creative=7$). To assess the quality of the questionnaire we conducted reliability analyses for constructs measured by multiple items (see Table 2).

| Scale/Construct | M | SD | Number of items | α |
|------------------------------------|-----|-----|-----------------|------------------|
| Entrepreneurial intention | 3.5 | 2.6 | 3 | .96 |
| Attitude | 5.2 | 2.6 | 3 | .93 |
| Subjective norm descriptive | 1.9 | 1.9 | 1 | - |
| Perceived behavioral control | 4.7 | 1.9 | 3 | .68 |
| Self-identity | 4.8 | 2.6 | 2 | .78 ^a |
| Opportunity identified (belief) | 3.6 | 2.8 | 1 | - |
| Entrepreneurial knowledge (belief) | 2.4 | 2.0 | 1 | - |

Table 2: Descriptive statistics and reliability coefficients of scales for total sample on pretest

Notes. $N = 32$; ^a parallel.

Table 2 shows that overall the constructed scales provide acceptable reliability; hence, expresses sufficient quality of the measures for evaluation purposes.

4.2 Sample and Descriptive Data

23 students ($n=13$ female; $M_{age}=22$; $SD=1.4$) self-administered the pre-test-questionnaire in the treatment group while 10 students (90% female; $M_{age}=23$; $SD=1.1$) did so in the control group. Due to incomplete processing of one attendee from workshop group in pretest and two attendees from control group in posttest, their responses were excluded from the data set. After sessions one and two (see Table 1), six students had dropped out. Another eight participants did not administer the posttest questionnaire. Finally, analyses at pretest refer to a total of 22 workshop participants and eight control group members (see Figure 2). From the responses in posttest, we were able to observe a differential picture of our sample as shown in Figure 2.

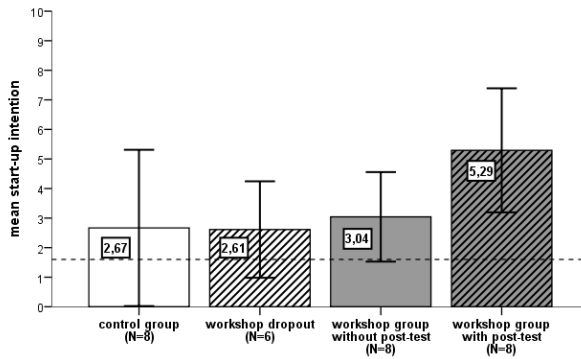


Figure 2: Differential sample sizes due to dropout and mean intentions in pretest

For all groups, the mean start-up intentions clearly lay above the threshold level within the population (dashed line) observed in exploratory study. For the remaining participants in the workshop group, the average entrepreneurial intention exceeds the scale's average. Indeed, for further analyses, eight members of each group remained (see Table 2). The means and standard deviations of assessed constructs for both groups and measurement times are given in Table 3.

| | control group (<i>n</i> =8) | | | | workshop group (<i>n</i> =8) | | | |
|---------------------------------------|------------------------------|------|------|------|-------------------------------|------|------|------|
| | pre | | post | | pre | | post | |
| | M | SD | M | SD | M | SD | M | SD |
| Entrepreneurial intention | 2.67 | 3.16 | 2.46 | 2.50 | 5.29 | 2.51 | 5.63 | 2.70 |
| Attitude | 4.38 | 3.18 | 4.29 | 3.00 | 7.21 | 1.96 | 7.33 | 1.89 |
| Subjective Norm des. ^a | 2.13 | 1.89 | 1.38 | 1.60 | 1.25 | 1.58 | 1.38 | 1.30 |
| Perc. behavioral control | 3.67 | 1.95 | 3.92 | 1.93 | 5.50 | 1.85 | 6.17 | 1.93 |
| Self-identity | 3.69 | 2.49 | 4.50 | 2.78 | 5.56 | 2.48 | 6.31 | 2.03 |
| Opportunity identified ^{a b} | 1.50 | 2.33 | 2.50 | 3.25 | 5.00 | 1.77 | 5.38 | 3.54 |
| Entrepren. knowledge ^{a b} | 1.50 | 2.07 | 2.00 | 2.00 | 3.75 | 1.98 | 5.88 | 2.47 |

Table 3: Means and standard deviations for control and workshop group on pre- and posttest

Notes. ^a = single item; ^b = belief; des. = descriptive; Perc. = perceived.

Table 3 shows the variables under investigation and reveals some tendencies within and between the groups. The observation of the mean values within the control group shows a mixed picture. Whereas, some means have increased, others had decreased over time. The latter is especially true for start-up intention. Striking homogeneous are the tendencies within workshop group. The means of almost all variables increased from pretest to posttest. In contrast to the control group the mean values for the workshop group were distinctly higher for both measurement times.

4.3 Inferential Analysis

To test our hypotheses for start-up intention we run T-tests (two-tailed) with the final samples in the control and workshop groups for both measurement occasions. Additionally, we calculated Cohen's *d* values to estimate the practical relevance of the findings (Sedlmeier & Renkewitz 2007). The results of these analyses are summarized in Table 4.

| | control group | workshop group | Hypotheses test |
|-----------------|---------------------------|---------------------------|--------------------------|
| Pretest | $M = 2.67$ $SD = 3.16$ | $M = 5.29$ $SD = 2.51$ | $p = .087$ $d = 0.83$ |
| Posttest | $M = 2.46$ $SD = 2.50$ | $M = 5.63$ $SD = 2.70$ | $p = .029$ $d = 1.27$ |
| Hypotheses test | $p = .82$ $d = 0.08$ | $p = .495$ $d = 0.12$ | |

Table 4: Hypotheses test statistics and Cohen's d values for control and workshop group

T-tests for independent samples were used for the comparisons of means between groups (Hypotheses 1 & 2). T-tests for dependent samples were also computed for within group comparisons (Hypotheses 3 & 4). With respect to the first hypothesis, Table 4 points out no statistically significant difference between the subjects of the control and workshop groups in pretest ($p=.087$). Thus, the first hypothesis is confirmed and there was no crucial self-selection effect. At the post measurement of start-up intentions there was a significant effect between control and workshop group ($p=.029$). This finding supports the second hypotheses that the mean intention in the workshop group exceeds that of control group after participation.

Concerning hypotheses 3 we expected an increased mean start-up intention for members of the workshop group in posttest compared to pretest. As seen from Table 4 there was a marginal increase in mean intention but not statistically significant. Hypotheses 3 were not confirmed. Since there was no significant change in mean intention in the control group (Table 4), expectations concerning hypotheses 4 were supported.

The same patterns (see Table 4) were observed for the intention predictors not reported in detail here. The only variable that showed a nearly significant difference within the workshop group was the subjective belief of having

sufficient entrepreneurial knowledge, which is one of the relevant predictors in the research model (Figure 1).

Besides the statistical differences reported we were interested in the practical relevance of the results. Therefore, we calculated standardized effect sizes using Cohen's d as shown in Table 4. The effect of being in the control group compared to the workshop group at pretest is with $d=.83$ large on Cohen's (1992) conventions which suggests a self-selection effect. The effect is even larger for the standardized posttest effect between groups ($d=1.27$), which reflects both, the slight decrease of mean intention in control group and the slight increase of mean intention in workshop group from pretest to posttest. Changes within the groups over time were observed with no practical importance. Even in the workshop group $d=.12$ remains low. On the basis of these estimates we could not clearly decide whether the workshop had a total effect on start-up intention.

To determine the overall effect we applied a procedure recommended for pretest-posttest-control group designs by Morris (2008). His "...results favored an effect size based on the mean pre-post change in the treatment group minus the mean pre-post change in the control group, divided by the pooled pretest standard deviation" (Morris 2008: 364). Following from this, the controlled and adjusted overall effect size for the intervention was $d=.19$ with a 95% confidence interval from $-.79$ to 1.17 , based on sample size of 16. This means that the workshop had, on average, a small effect on start-up intention according to Cohen's (1992) criteria. As confidence intervals indicate, this effect was not significant. The reported results are summarized in Table 4.

| Hypotheses | Supported | Rationale |
|------------|-----------|---|
| 1 | yes | similar start-up-intentions in both groups before the intervention |
| 2 | yes | higher mean start-up-intentions in workshop group as compared to the control group after intervention |
| 3 | no | no substantial intention increase in workshop after participation |
| 4 | yes | stable intentions in control group during observed time periode |

Table 5: Summary of Hypotheses tests

5 Discussion

It was assumed that an EEP deducted from a theoretically derived and empirically proven model should effectively increase entrepreneurial motivation respectively intention. Following this assumption, we developed an entrepreneurship workshop that influenced start-up intentions and determinants of intention within a particular population, namely students of humanities and social sciences. Hence, the workshop reflected the thematic preference of the target group for social entrepreneurship. In summary, we found a small effect of the course with respect to increasing entrepreneurial intentions. For nearly all determinants we observed increases in the mean tendencies after participation in the course. In light of the general findings on the mixed effects of EEP (Lorz et al. 2011; Graevenitz et al. 2010) our results are encouraging. Moreover, they suggest that it is fruitful, to pay more attention to theoretical, methodological, and empirical preconceptions. Furthermore, this study adds another example that entrepreneurship education for students in humanities and social sciences can be successful. Here we find a large group of potential beneficiaries that are still hardly addressed. And EEP

on social entrepreneurship seems to be particularly promising (Vázquez-Burgete et al. 2012).

5.1 Limitations and Extensions

A central problem in our study was the small sample size in the workshop group. Due to dropout during the course and missing responses on posttest within the workshop group, we were confronted with severe sample mortality. Therefore, only data of those students with already medium to high start-up intentions were available. This resulted in a lack of insight into those workshop participants with a low mean start-up intention in comparison to the control group (Figure 2). Hence, a generalization of results presented is marked with interpretative caution. Based on the actual results, we could not exclude a self-selection effect.

Another critical aspect that needs consideration is the question as to whether all relevant components of the research model (Figure 1) were adequately operationalized within and addressed by the social entrepreneurship course. As the results ruled out, the only nearly significant increase over time was observed for the entrepreneurial knowledge belief followed by self-identity in second place regarding the growth rates of workshop group members (Table 3). These two factors are necessary but not sufficient predictors in respect to the intention change. To increase start-up intention, an extraordinary increase in both would be needed. As mentioned earlier, there are at least three factors in the research model that have a stronger influence on start-up motivation, namely attitude towards start-up, perceived behavioural control and the interaction of attitude with the belief of having a founding idea identified (Figure 1).

Total change in perceived behavioral control was marginal and insignificant, although the workshop contained elements (Table 1) that demonstrated the impact of TPB factors such as perceived behavioral control (Mueller 2011). Same applies to opportunity belief (Table 3). As denoted (Figure 1) opportunity beliefs were moderated by attitudes. This means positive attitudes are necessary for opportunity beliefs, which in turn are connected to personal preferences. The idea creation in the workshop was a group task, possibly leading to ideas that did not relate to the participants attitudes or preferences. Therefore, the application of the selected method was not ideal. Hoffman & Eppler (2012: 3) reported, that participants "... felt rather fixed by the canvas structure". After all, only one third of the workshop participants did actually prefer social business, meaning the other participants would have preferred other ideas. In this respect the workshop group was not representative for the population (see 2.1). This could be another explanation for the lack of attitude increase in workshop group, which was supported by the lack of social entrepreneurship knowledge (Table 3).

Finally, due to the five month time period of workshop implementation, nothing could be said about predictive validity, which is crucial in determining whether start-up intention is a good evaluation criterion for actual founding.

5.2 Implications for Future

Evaluation of intervention is an aspect of rational action (Hager & Hasselhorn 2000) and thus helps us to make better decisions concerning necessary improvements in future. In that manner developing and evaluating a specific EEP, discussing the results and constraints gives lessons for subsequent research on that issue. In accordance with aspects discussed above we are aware of two areas of improvement: (1) workshop design, and (2) evaluation

method, which are mutually dependent upon each other. To improve both, we need to be explicit and differentiated with regard to particular aspects as pointed out hereinafter.

Since the aim of EEP in general and our workshop in particular is to increase start-up intention, it seems appropriate to take a closer look at motivational aspects within the pre-founding phase (Baron 2012; Shane, Locke & Collins 2003). For this purpose, the action phase model of Heckhausen (1989) could be used, which proposes four different stages in the course of action. Of particular relevance for our purposes are the first two phases, the pre-decisional and pre-actional phases. These phases differ in the mind sets of people (Heckhausen 1989; Gollwitzer 2012). The pre-decisional phase specifies the factors and processes that lead to sufficient amount of intention that allows individuals to move into the pre-actional phase. Whereas their mind set during the pre-decisional phase is characterized as "open-minded", they become "closed-minded" with entering the pre-actional phase (Gollwitzer 2012.), e.g. develop concrete plans for behavior implementation. To adequately address each individuals' corresponding needs, it is necessary to clarify their current status in course of action with respect to business start-up. Therefore, evaluation instruments must specify threshold levels to allow for precise classification, while EEP have to provide different treatments for different individual needs, e.g. start-up intention formation vs. start-up implementation planning. In order to determine the phase-adequate needs more precise, evaluation instruments could be expanded upon e.g. to include personal goals of participants for the workshop. The question is whether participants want to get first insights into entrepreneurship as a career option and corresponding affordances, or whether they want to work out their concrete start-up ideas in preparation for founding a business.

Being aware of this issue, workshops must be designed differently for individuals in different stages. For participants in the pre-decisional phase for instance an EEP must provide more room for developing potential start-up ideas and allow for creative modifications etc. If participants are closed-minded in the pre-actional phase, they need support to translate their idea into a structured business concept or plan. This means EEP should be adaptive and modular to accurately address the different needs with respect to the particular pre-founding stage.

Depending on which type of intention is treated, differences in the intention predictors must also be derived from the evaluation instrument. As the challenge in the pre-decisional phase is the weighing between desirability and feasibility, that is between attitudes and perceived behavioral control (Bagozzi & Dholakia 2005), an adaptive workshop should focus on this process predominantly. As we have seen in our example workshop group members seem to have improved their control beliefs. In contrast, if participants are in the pre-actional phase an EEP must allow participants to experience their actual control over the behavior, which reflects controllability when faced with obstacles in the given context during the course of action (Fishbein & Ajzen 2010). This might also cause a change in importance of constructs. Whereas individuals in the pre-decisional phase improving their control beliefs, individuals in the pre-actional phase improving their entrepreneurial self-efficacy. As Bandura (1997) stated, self-efficacy is more task specific and insofar better matched to affordances of pre-actional phase.

Another evaluation proposal is to enhance the design and provide additional follow up measures (Hager 2000). With supplemented measuring times it becomes possible to assess the intention stability over time. Intention stability is a moderator of the essential intention-behavior relation (Webb & Sheeran

2006). Hence, the stability of intention during the course of the study is an approximation for predictive validity. Furthermore, longitudinal study could reveal whether the criteria period of "founding within five years after graduation" corresponds to actual outcomes.

A concrete definition of an intervention's goals is another precondition for its success and a proper evaluation. Thereby, resulting success in EEP could mean both an increase or decrease of start-up motivation, presupposed that a particular effect is based upon informed decisions. Just about one third of all start-ups survive longer than 3 years (Hagen et al. 2012). If EEP are fostered to increase the number of innovative and powerful ventures and by this help society's prosperity, support should be concentrated e.g. on promising business ideas. As each founder bears precarious risks, and is liable for loss and damage, there is no lasting proof that EEP lead to success. Ultimately, it still depends on the individual founder himself to decide whether to take the risk or not. Though EEP can help make informed decisions based on sophisticated reflection, its aim should be to re-enforce confidence in entrepreneurial career exploration (Graevenitz et al. 2010). That is an important step in career decision making as pointed out by Hirschi and Läge (2007). Finally, it is part of the ethical responsibility of educators to enable students to make the best decision for themselves (Katz 2012). EEP should provide a clear picture of the affordances of an entrepreneurial career. Therefore, it is crucial to evaluate closely and address the individual goals and needs in EEP.

6 Conclusion

Overall, evaluating the effects of entrepreneurship education programs remains a challenging task. Recently, progress has been made in this area, which should encourage us to continuously optimize evaluation methods, and

apply systematic proven results to improve our EEP. In our opinion, EEP would benefit from three central improvements: (1) more differentiated analyses of stage depended motivational processes as well as participant's attributes, (2) a design of EEP based upon subsequent research, e.g. involving threshold levels of intention, (3) further criteria for success of EEP besides an intention increase, such as the confidence of an entrepreneurial career decision or the intention's stability should be addressed in longitudinal assessments. Ultimately, doing so should impact the desired outcome of successful entrepreneurship in the future.

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Leona Achtenhagen

Summing up – moving entrepreneurship research forward

1 Introduction – the relevance of this book

The papers compiled in this book proceed from the YERC Young Entrepreneurship Research Colloquium initiated by Britta Gossel at the Ilmenau University of Technology. The colloquium and its proceedings present an interesting attempt to provide an outlet for early-stage entrepreneurship researchers from German universities to publish their initial research ideas and results in English language. This attempt can be applauded, as it allows young researchers to communicate their research interests to a much wider audience, than would else be likely.

In the German university system, focus has traditionally been on German-language teaching and research, but it is currently undergoing a dramatic change of opening up towards international publications, written in English as *lingua franca* and with rigorous double-blind peer review processes. Research has shown that German academic texts follow a different discourse structure than English-language texts in terms of developing the main argument and of structuring the texts. More specifically, English – but *not* German – texts were found to apply linear progression, avoiding repetition and excluding material not relevant to the topic, developing the text from the end of one paragraph to the beginning of the next (Clyne, 1987). Thus, becoming part of the international publishing ‘game’ requires the ‘craft’ of producing research results

and internationally publishable texts which adhere to the English-language discourse structure. The earlier in a researcher's career this is practiced, the easier it will become over time. This book provides such a learning opportunity of crafting research texts in English language and lets its authors explore these grounds in a friendly setting. With publications becoming an ever more important part of building the own curriculum vitae, the published chapters also make a nice addition to the contributors' CVs.

The remainder of this chapter is structured as follows. In the following section, I will outline some current trends and future directions of entrepreneurship research as suggested by other entrepreneurship scholars. Thereafter, I will discuss the contributions to this volume in the light of these suggestions.

2 Entrepreneurship research – current trends and future directions

Entrepreneurship is a relatively young field of study (e.g. Cooper, 2003), argued by some to still have a low paradigmatic development (e.g. Ireland, Webb and Coombs, 2005). Thus, the search for a distinct theory of entrepreneurship continues (e.g. Phan, 2004). In an editorial to the *Academy of Management Journal*, Ireland et al. (2005: 557) argue that entrepreneurship i.a. concerns opportunity identification and exploitation (e.g. Shane and Venkatamaran, 2000), corporate renewal (e.g. Guth and Ginsburg, 1990), and the creation of new firms (e.g. Alvarez, 2003). Their review of published entrepreneurship research also shows that the vast majority of journal articles rely on advanced quantitative methods, and the authors predict that future entrepreneurship research will put more focus on study design, including aspects of statistical power, construct validation and interpreting effect sizes,

but also more emphasis on longitudinal and panel studies (Ireland et al., 2005: 562). In terms of questions to be addressed, they suggest a revived focus on the question of where do new firms come from (ibid).

Over the past years, different entrepreneurship scholars have provided their views on where they believe the field is moving and should be moving, suggesting relevant areas for further study. A recent special issue in a leading entrepreneurship journal gives a good overview of these directions elaborated on by well-known international scholars in the field (Wiklund, Davidsson, Audretsch and Karlsson, 2011). For example, in a paper exploring the development of capabilities and learning implications in new ventures during internationalization, Autio, George and Alexy (2011) stress the fundamental character of organizing processes in start-ups. In the same issue, Carter (2011) addresses that the financial rewards and consequences of entrepreneurship on individuals are largely unknown. Given the low median earnings of entrepreneurial activities, this apparent financial irrationality is explained by non-pecuniary compensating factors, such as autonomy and satisfaction. Carter argues that economic performance measures commonly used in entrepreneurship research are too narrow and static and that in reality a broad range of indicators collectively contribute to economic well-being. As mentioned above, entrepreneurial opportunities have been one core topic of entrepreneurship research for quite some time. Dimov (2011) provides a new view on opportunities by suggesting three premises for studying opportunities empirically, namely opportunities as happening, as expression of actions and as instituted in market structures (see also Short et al., 2010, for a review of the topic of opportunities). Another topic which has received much academic attention in recent years is that of business models. George and Back (2011)

systematically review and categorize the emerging literature from an entrepreneurship perspective, and find that the concept is considered highly relevant by practitioners. They suggest that an integrated approach to research on business models presents an opportunity to unlock entrepreneurial processes, evaluate firm configuration effects, and explain and predict entrepreneurial outcomes (2011: 107). Even more profound questions to be asked by entrepreneurship researchers, and linking the field more clearly to social and societal development, are suggested by Sarasvathy and Venkataraman (2011), such as what do entrepreneurs do?; how are markets made?; who is *not* a potential entrepreneur?; how does entrepreneurship drive social innovation and human development?; or are social ventures different from for-profit ventures?

Outside of this highly interesting special issue, Phan et al. (2009) outline that future studies of corporate entrepreneurship, i.e. entrepreneurship within existing organizations, should focus on processes and knowledge-based resources, but also appreciate the heterogeneity of corporate entrepreneurship in relation to new contexts. Busenitz et al. (2003) advocate focusing entrepreneurship research at the intersection of the constructs of individuals, opportunities, modes of organizing, and the environment and suggest different theoretical lenses to address these. One aspect of entrepreneurship which continues to be of high interest concerns the person of the entrepreneur. Even though studies of traits and personalities have yielded contradictory results, many people share the intuition that there would be something ‘special’ about successful entrepreneurs. Therefore, research into entrepreneurial cognition (e.g. Baron, 1998) or decision-making (e.g. Sarasvathy, 2008) continues to trigger interest. A recent meta-analysis of research on entrepreneurial traits

finds need for achievement, generalized self-efficacy, innovativeness, stress tolerance, need for autonomy and proactive personality to be positively correlated with entrepreneurial behavior (Rauch and Frese, 2007). However, these relationships are found to be of moderate size and their heterogeneity leads the authors to suggest ways forward for future research, for example by analyzing moderator variables.

An important development is the insight that entrepreneurship research should be firmly anchored in its context (e.g. Welter, 2011; Zahra, 2007), which would *i.a.* include questioning and probing widely held assumptions about a given theory and prior findings using it. In consequence, entrepreneurship research focusing on different types of contexts, such as transition economies (e.g. Smallbone, Welter and Xheneti, 2012), emerging economies (e.g. Bruton, Ahlstrom and Obloj, 2008), industry contexts (e.g. Achtenhagen, 2008, for entrepreneurship in media industries) or types of companies like family firms (e.g. Hall, Melin and Nordqvist, 2004; Rogoff and Heck, 2011) has become prominent. But also the entrepreneurial activities of specific groups, such as women (e.g. de Bruin, Brush and Welter, 2007; Achtenhagen and Tillmar, 2013) or ethnic minorities (e.g. Dana, 2008) have gained substantial research interest. This research makes evident that entrepreneurship is not restricted to for-profit activities of white, middle-aged men, as the common stereotype would suggest (see, for example, Ogbor, 2000). That entrepreneurship in reality has multiple facets is also underlined by research on social entrepreneurship (e.g. Short, Moss and Lumpkin, 2009), societal entrepreneurship (e.g. Berglund and Johannisson, 2012), sustainable entrepreneurship (e.g. Shepherd and Patzelt, 2011), development entrepreneurship (e.g. MacMullen, 2011), international entrepreneurship (e.g.

Dimitratos and Jones, 2005) as well as the proposition of dependent variables beyond financial performance measures to comprise economic, environmental and social value (e.g. Cohen, Smith and Mitchell, 2008). Another research focus is that of the entrepreneurial process (e.g. Welter, Smallbone and Van Gils, 2012) or ‘entrepreneuring’ (Johannisson, 2011), in which the activities of enacting entrepreneurship in practice are in focus. This processual focus is also becoming increasingly important in research on the role of networks for entrepreneurial activities (e.g. Slotte-Koch and Coviello, 2010).

Thus, a range of different topics are ‘en vogue’ in entrepreneurship research at the moment, and many different ways forward have been suggested. In the next section, I will briefly review the contributions to this volume and how they fit into this research landscape.

3 The contributions in this volume

The phenomenon of creative labs is addressed by Markus Lahr. Creative labs are understood as the institutionalized organizing of an open, interdisciplinary process to search for and identify solutions, drawing on creativity techniques and on interaction between different actors. His point of departure is the fact that a number of so-called Creative Labs have been founded in the past few years, but that it remains poorly understood what would characterize such labs and how they are related to the innovation process. Lahr shows how this topic is apparently relevant in practice, while it has not received much academic attention. Based on desk research, he analyzes and characterizes the activity focus and organizing of different labs, and finds three typical patterns of how creative labs work. With his early-stage results Lahr moves somewhere between the innovation field (starting out with open innovation processes and

attempting to place the creative labs' activities into phases of an ideal-type innovation process) and the entrepreneurship field (finding finds that creative labs in fact often act as incubators for entrepreneurial firms). Despite the obvious, Schumpeterian link between innovation and entrepreneurship, these two areas have developed into rather separate academic fields, and developing a coherent story line around these appears to be rather challenging. In further development of his work, Lahr could therefore consider communicating either to an entrepreneurship or an innovation audience, as this might make it easier to develop a theoretical contribution and to tell a coherent story.

The chapter by Maximilian Brandenberger and André Presse presents an investigation of which investment criteria German business angels have and how they prioritize them. After finding that the 'entrepreneurial management team', 'market/product' and 'financial factors' are the most important investment criteria, the authors compare these results to prior research results from the UK and the US. While such cross-country comparison is a promising idea, the low response rate of their own study limits the generalizability of the results so that rather little can be said beyond the own sample, and moreover the different study designs used in the different country studies further limit this approach. Adhering to Zahra's (2007) suggestions to anchor entrepreneurship research more firmly in its specific context to facilitate the development of more robust theory could add value to the further exploration of this research topic.

Whether the process of business formation is a business process is the question addressed by Sebastian Hoppe and Stefan A. Uhlich. Driven by the assumption that new venture creation is a process, they aim to find out where

in such processes routines exist that could be handled by business process management. While this assumption, if it held true, could entail quite some practical value, it is based on the textbook image of the business formation process as linear and sequential. Not quite surprisingly, the authors find that the ‘normal’ business formation process does not match the business process scheme. Only serial entrepreneurship and franchising, which are based on more routines and structural settings, could possibly be made more efficient by business process management. Thus, the findings are in line with Auttio et al.’s (2011) suggestion that how routines are *formed* would be a relevant question for entrepreneurship research. This chapter is an interesting example of applying an established concept, business process management, to a new empirical setting, namely business formation. However, it also shows the difficulty of building or developing theory through this approach, as that hardly happens by applying a concept alone. Here, exploring the micro-foundations of dynamic capabilities (Teece, 2007) or applying the strategy-as-practice perspective (e.g. Johnson et al., 2007) could be fruitful ways forward.

The call for more research on international entrepreneurship has been followed by Mareike Schmidt, who investigates organizational learning of young transnational firms. Rather than taking her main vantage point in the literature on international new ventures, she departs from Bartlett and Ghoshal’s (1989) model of the transnational organization and tries to apply this model, designed for large, established organizations, to the entrepreneurial small-firm context, arguing for the concept of ‘born transnationals’. The difference to the established concept of international new ventures remains somewhat unclear, and given the rather high level of fragmentation of the entrepreneurship field, the value of introducing yet another label can be

questioned. How theories for multinational firms hold for small firms has been outlined previously for example by Ruzzier, Hisrich and Antonic (2006). However, Schmidt manages to anchor her well-written chapter firmly in existing relevant literature on international strategy and organizational learning, and thereby, in my view, it provides the most advanced contribution to this volume. Given the early stages of her work, in some instances the difficulty of applying literature which is based on more mature, larger organizations to the new-firm context still is evident – why would, for example, strategic renewal (commonly related to turnaround processes of existing firms) be relevant for new firms? Additional inspiration for her future empirical work could be gained for example from Naldi (2008), who investigated the impact of international SME growth on learning ‘at home’.

Another aspect positively stands out with this chapter – it is the only one managing to use gender-neutral language consistently throughout the entire chapter. The other chapters typically talk about the entrepreneur as ‘he’, as if naturally all entrepreneurs were men or as if naturally men were more important than women and therefore a male label could be used to implicitly include women. More reflective research has shown how such (implicit) gendering of entrepreneurship as male reduces the opportunity of women to consider entrepreneurship as an inspiring career option (e.g. Achtenhagen and Welter, 2011). Similarly, the non-reflected, often unconscious assumption of the entrepreneur to be male in an overwhelming part of published entrepreneurship research is reproducing this image (e.g. Ahl, 2006). While this issue is (too!) little discussed in Germany, a lack of reflection about this topic by the upcoming generation of entrepreneurship educators could have dramatic effects – namely that only half of the potential nascent entrepreneurs

are reached with the attempts to enhance their entrepreneurial intentions. Ways out of this are most definitely *not* to add a footnote that for reasons of simplicity male notions are used in the paper. Instead, either plural forms can be used to avoid gendered labeling, female and male forms can be alternated, or female forms could be used to create more attention to this issue. In German language, gerund forms can help to avoid gender-biased language. The excuse that traditionally male labels have been used to sometimes implicitly include women is no valid reason to continue with such labeling; this tradition has manifested a gendered power structure, which by now is antiquated and therefore should be discontinued! In entrepreneurship education it is equally important to present both, male and female examples of entrepreneurs.

The chapter by Orestis Terzidis, André Presse and Fabian Metzeler investigates how creativity is being dealt with in North American and European entrepreneurship curricula. Their discussion opens up for a highly interesting question in entrepreneurship education, namely that of the basis for grading the students' performance. The authors point out that students' creativity should not be assessed through their creative achievements; instead the creative potential of students should be seen as raw material to be shaped in order to increase the probability of creative actions and products. While this is an interesting suggestion, it appears as rather challenging to be implemented in our educational systems, which currently focus on results rather than processes, and which take an absolute, rather than relative stance - meaning that the results of different students are compared to each other, and not the process (or result) of all students are evaluated in relation to their initial potential.

The last chapter in the book, written by Martin Arnold and Tobias Michael, also addresses entrepreneurship education, this time by investigating how entrepreneurship education manages to foster a favorable attitude towards founding a venture. Thus, based on the assumption that entrepreneurial intentions can be positively influenced, they design and conduct a workshop to achieve this, including a control group design. The authors find this workshop to only have a small effect on increasing entrepreneurial intentions. One possible explanation for this rather small effect could be the set-up of the workshop, which follows the typical business plan set-up at the heart of the vast majority of entrepreneurship courses (see for example Honig, 2004). Not only are research results of whether business plans improve new venture performance inconclusive and therefore the value of this dominant focus in entrepreneurship education questionable (e.g. Honig and Karlsson, 2004). Also, students who have not yet developed entrepreneurial intentions might be put off entrepreneurship by developing a business plan for a real or fictitious idea; instead, it might be more fruitful to support students in crafting their entrepreneurial selves (see Achtenhagen and Johannisson, 2013, for a more detailed discussion).

4 Ways forward

A number of the chapters in this book can be related to the trend in entrepreneurship to explore the entrepreneurial process. Also, explorations of how entrepreneurial intentions and skills could be enhanced are of course highly relevant aspects.

Generally, some of the chapters are missing a more explicit problematization that argues for why the topic under investigation would be counterintuitive,

relevant and linked to the state-of-the-art of relevant theories. This is of course never an easy task, especially in earlier stages of the doctoral studies. Here, it could be helpful to think about the research problem as an enigma to be solved. This enigma should go beyond identifying a gap in research – as a gap in research might not mean that it must be studied, it might simply mean that it has not been studied yet because it is not worthwhile the effort. Thus, it is more important to ask a research question of relevance, than asking the most novel question. Talking to entrepreneurs to find out more about what kind of questions are relevant to them could be an approach to start developing an empirically relevant question. A shortcut to finding a theoretically relevant question can be by consulting the sections on suggested future research, for example of review articles.

A final reflection concerns the scope of entrepreneurship presented in this book – which (except for one section in one chapter) covers for-profit entrepreneurship only. Thus, multiple other facets of entrepreneurship are left to be further explored. I look forward to reading the results of the next edition of the Young Entrepreneurship Research Colloquium!

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