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Career Trajectories after Graduating from a University-Based Entrepreneurship Certificate Programme

Florian Huber

Research Associate, Strascheg Center for Entrepreneurship, Hessesstrasse 89, 80797 Munich, Germany, florian.huber@sce.de, www.sce.de

Ebru Turgut-Dao

Head of Academic Program for Entrepreneurship, Strascheg Center for Entrepreneurship

Klaus Sailer

Managing Director, Strascheg Center for Entrepreneurship

Thomas Peisl

Department of Business Administration, Munich University of Applied Sciences

ABSTRACT

Questions we Care About. What unites entrepreneurship educators is the aim to create impact. However, the effects of entrepreneurship education are often far-distant and can only be estimated with traditional evaluation methods. Therefore, we asked ourselves: How can we systematically keep track of what entrepreneurship education graduates actually “end up doing” in the long-run?

Approach. We collected data by profiling graduates from the Academic Program for Entrepreneurship (APE) via the professional social networks LinkedIn and Xing. This allowed us to compile a robust dataset (n = 169, > 89 % of the target population) in a short period of time. Based on this data, we explore the overall entrepreneurial activity of our graduates, highlight different career patterns, and explore several individual career paths. Through a series of interviews with former graduates, we also explore the impact which the entrepreneurship programme had on their career choices.

Results. The analysis of the collected dataset only revealed subtle changes in the proportion of the chosen careers over time. Overall, the likelihood of (co-)founding and/or working for a startup is highest within two years of graduating from the APE and slightly declines after that. In addition to these startups, several graduates have also turned their experience from the entrepreneurship education programme into a service offering in itself by creating independent freelance consulting businesses. However, the majority of graduates joined established companies in non-entrepreneurship-related roles following their participation in the programme.

Implications. Career paths are multi-faceted and highly individual. While some entrepreneurship education graduates might use their acquired mindset and skills to start-up their own businesses, others will tend to apply these qualities in a corporate environment. Both outcomes should be respected in the design of entrepreneurship education curricula.

Value/Originality. The presented research approach provides a novel perspective on how the career paths of entrepreneurship education graduates can be tracked and evaluated.

Keywords: entrepreneurship education, impact assessment, entrepreneurial intention, curriculum design

1. INTRODUCTION & BACKGROUND

As many authors have shown, entrepreneurs have a different way of seeing the world, which includes various facets such as opportunity recognition, achievement motivation, propensity to take risks, and locus of control (Brandstätter, 2011; Collins, Hanges & Locke, 2004; Parker, 2006; Shane, Locke & Collins, 2003; Stewart & Roth, 2007). As these qualities are often depicted as necessary skills for the immediate and far-distant future, the interest in effective entrepreneurship education at the university level has been growing rapidly across the world (Lorz et al., 2013; Martin et al., 2013). However, entrepreneurship education comes in many shapes and sizes (Fayolle & Gailly, 2008). A distinction is often made between teaching “for”, “through” and “with” entrepreneurship (Kuckertz, 2013), resulting in different pedagogical approaches. Several studies have also shown that effective entrepreneurship education needs to be tailored to the intended target groups, resulting in different teaching approaches in different disciplines (Maresch et al., 2016, Neck & Greene, 2011; Penaluna & Penaluna, 2008).

What unites entrepreneurship educators across different disciplines and pedagogical approaches is their aim to create impact through entrepreneurship education. This results in a need for structured frameworks to assess such impact. In their meta-analysis, Martin et al. (2013) report a significant relationship between entrepreneurship education training and entrepreneurship-related human capital assets (e.g. knowledge, skills, competencies, positive perception of entrepreneurship as well as intentions to start a business) as well as entrepreneurship outcomes (e.g. nascent behaviours such as writing a business plan or seeking funding) and entrepreneurship performance. Interestingly, the positive effect of entrepreneurship education is not just limited to careers as entrepreneurs. As Charney and Libecap (2000) have shown, entrepreneurship students often also outperform students from other disciplines in non-entrepreneurial careers. The authors found that an entrepreneurial mindset developed through targeted entrepreneurship education programmes will also make graduates better able to create wealth, more likely to be involved in developing new products and R&D, and more self-sufficient in smaller and larger organisations alike. According to the authors, this results in a willingness of employers to pay higher salaries to graduates from entrepreneurship majors.

One of the prevailing models in the assessment of entrepreneurship education is the construct of entrepreneurial intention (Krueger & Carsrud, 2000) as a planned behaviour (Ajzen, 1991), which estimates the likelihood of future entrepreneurial actions. While providing educators with an immediate way to assess the impact of an educational intervention during and after different entrepreneurship course formats, this assessment metric only provides an estimation of future entrepreneurial behaviour. Limiting the impact assessment to what graduates “intend to do” and not to what they “actually do” only offers a very rudimentary understanding of the actual career progressions entrepreneurship programme graduates might have.

In the following chapters, we therefore present findings from an ongoing research study about the career trajectories of graduates from an advanced university-based entrepreneurship education programme, which employs a different approach to data collection and analysis. For this study, we collected data by profiling graduates via the professional social networks LinkedIn and Xing. This allowed us to compile an extensive dataset (> 89 % of the target population) in a short amount of time, without the need to rely on surveys. Based on this data, we explore the career paths of graduates and highlight different career patterns. Through a series of interviews with former graduates, we also probe for the benefits which entrepreneurship education had on the graduates’ career paths.

2. RESEARCH APPROACH

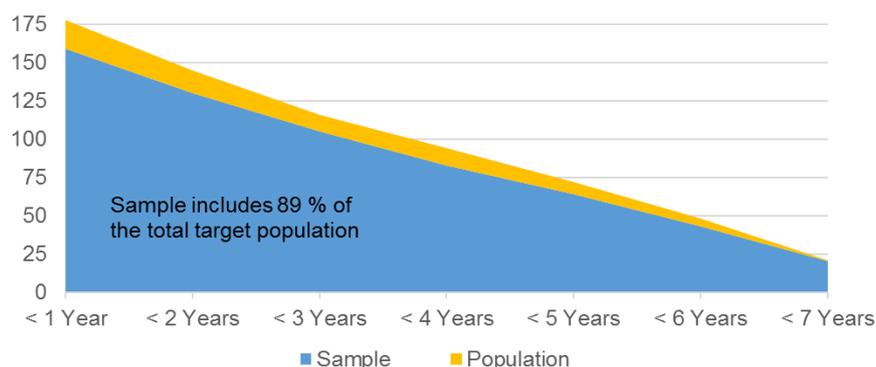
Our research study builds on a two-phased research design, which combines quantitative data about the career progression of graduates from a university-based entrepreneurship education programme with short retrospective qualitative interviews with former programme participants.

To collect the quantitative data, we manually compiled information about the career progression of former graduates of the Academic Program for Entrepreneurship (APE) by examining individual career profiles on the professional social networks LinkedIn and Xing. This publicly available data allowed us to create a robust dataset in a short amount of time without the need to rely on surveys. Since most of the young university graduates in Germany are registered either on LinkedIn, Xing, or on both platforms this enabled us to include a large proportion of the APE alumni population in our study.

Our dataset includes the publicly available data from LinkedIn and Xing of 159 alumni from the APE, who have graduated between 2010 and 2016. The dataset represents 89 % of the total APE alumni population. The APE is a 10-months certificate programme hosted by the Munich University of Applied Sciences (MUAS) with a total workload of around 500 hours. It provides intensive training in entrepreneurial thinking and action for students from the MUAS and other local universities as well as industry professionals. The programme syllabus includes design thinking-based innovation approaches (Huber et al., 2016), lean startup methodologies and effectuation theory. Unlike mandatory curriculum-based entrepreneurship courses at MUAS (Turgut-Dao et al., 2015), APE is a voluntary programme and therefore attracts participants with a predisposition towards entrepreneurial careers.

Due to the chosen longitudinal research design, the target population and sample size decreases over time, as shown in Figure 1. Our analysis on the career progression within the first year of graduation was based on a total of 159 alumni from seven programme cohorts. Once we extended our analysis further back to the graduating class of 2010, our sample size was reduced to only one cohort consisting of 20 programme alumni.

Figure 1: Sample Size vs. Population over Time



In the chosen longitudinal study design, the total study population and resulting sample size is reduced the further the APE programme alumni were tracked back in time. Overall, our sample includes 89 % of all programme alumni. For 66 % of the cases, career data was available both from LinkedIn and Xing.

In the collected dataset, 66 % of the programme alumni are male. Around 58 % were studying full-time while they were completing the APE. Another 26 % were working full-time, while 12 % were working and studying part-time while they attended the APE. The programme graduates come from a variety of academic backgrounds, including e.g. business administration, engineering, IT, design, psychology and arts. About 44 % of the APE alumni ended up graduating with a bachelor's degree as their highest academic award, while 48 % of the alumni completed a master's degree and 7 % a PhD.

To allow for the statistical analysis of the collected data, each career path was broken down into smaller chunks (3-month time periods). The aggregated job positions, companies of employment, and other career activities were then classified according to the ten categories provided in Table 1. In cases where several career activities overlapped in the online profiles (e.g. employment at an established company while building a startup), these activities were weighted equally for the respective time period.

Table 1: Coding Categories of LinkedIn and Xing Career Data

Category	Description
Further Studies (Innovation / Entrepreneurship)	APE graduates who continued their higher education in innovation- or entrepreneurship-related subjects
Further Studies (Other)	APE graduates who continued their higher education in other subjects
Startup (Co-Founder)	APE graduates who have (co-)founded their own incorporated startup
Startup (Employee)	APE graduates who have joined a startup as an employee at an early stage
Corporate (Intrapreneur / Entrepreneur)	APE graduates who have joined an established company in a position with a strong focus on entrepreneurial tasks, such as e.g. intrapreneur or entrepreneur in residence
Corporate (Innovation / Entrepreneurship-Related)	APE graduates who have joined an established company as an employee with some focus on entrepreneurial activities, such as e.g. product-owner, product development, etc.
Corporate (Other)	APE graduates who have joined an established company as an employee with little to no focus on entrepreneurial activities
Freelance (Innovation / Entrepreneurship)	APE graduates who worked as freelancers (e.g. independent consultants) with a focus on innovation or entrepreneurship
Freelance (Other)	APE graduates who worked as freelancers with no focus on innovation or entrepreneurship
Academic Teaching & Research	APE graduates who worked as (adjunct) lecturers and/or academic researchers

The resulting coded data was aggregated and used to create descriptive statistical analyses of the career paths of the APE programme graduates (e.g. as shown in Figure 2 in Chapter 3.1).

The descriptive statistical analysis was conducted with the intention of identifying distinct career patterns in the aggregated dataset. However, the data analysis revealed only subtle changes over time.

To further elaborate on the insights gleaned from the statistical analysis and to clarify the reasons for the observed career choices, six short semi-structured interviews were conducted with APE graduates. After being provided with a short description of our research approach, each interviewee was asked to comment on the reasons for the observed career changes on their LinkedIn and Xing profiles. Furthermore, the interviewees were asked to reflect on the impact their participation in the entrepreneurship education programme had on their personal development as well as on their chosen career paths.

All six interviews were conducted as phone interviews in March 2017. Each interview was loosely transcribed and discussed among the two lead researchers of this paper. Subsequently, short individual interview summaries were compiled and included in this article (Section 3.2).

3. RESULTS

In the following chapter, the preliminary results from the ongoing research study are presented. In the first section, an analysis of the collected data on the career progression of APE graduates is provided. The second section introduces excerpts from the follow-up interviews with six APE graduates who provide some insights on the observed career patterns.

3.1. Career Trajectories of APE Graduates

The analysis of the collected dataset only revealed subtle changes in the proportion of the chosen careers over time. As shown in Figure 2, the likelihood of (co-)founding and/or working for a startup is highest (just above 20 % of the sample) within two years of graduating the APE and slightly declines after that. During this period, many of the former programme participants who were full-time students at the same time, were in the process of wrapping up their respective study programmes. Among the startups founded by students around the time of their graduation from their main degree programme are e.g. Freeletics, ProGlove and NearBees, which are some of the most successful startups which have passed through our startup incubator. With only few exceptions, these founders are between 25 and 30 years old. This coincides with data from the German Startup Monitor which shows that in 2016, more than 75 % of the startups in Germany were found by people between the age of 18 and 34.

Around 30 % of the startup founders in our sample were female. Although this ratio is still far from being considered gender-equal, it is still a stark contrast to the average female (co-)founder rate of 8.1 % for the Munich area (BVDS, 2017) and the overall rank of Germany for the female to male (co-)founder ratio (rank 50 out of 65) in the most recent Global Entrepreneurship Monitor (GEM, 2017).

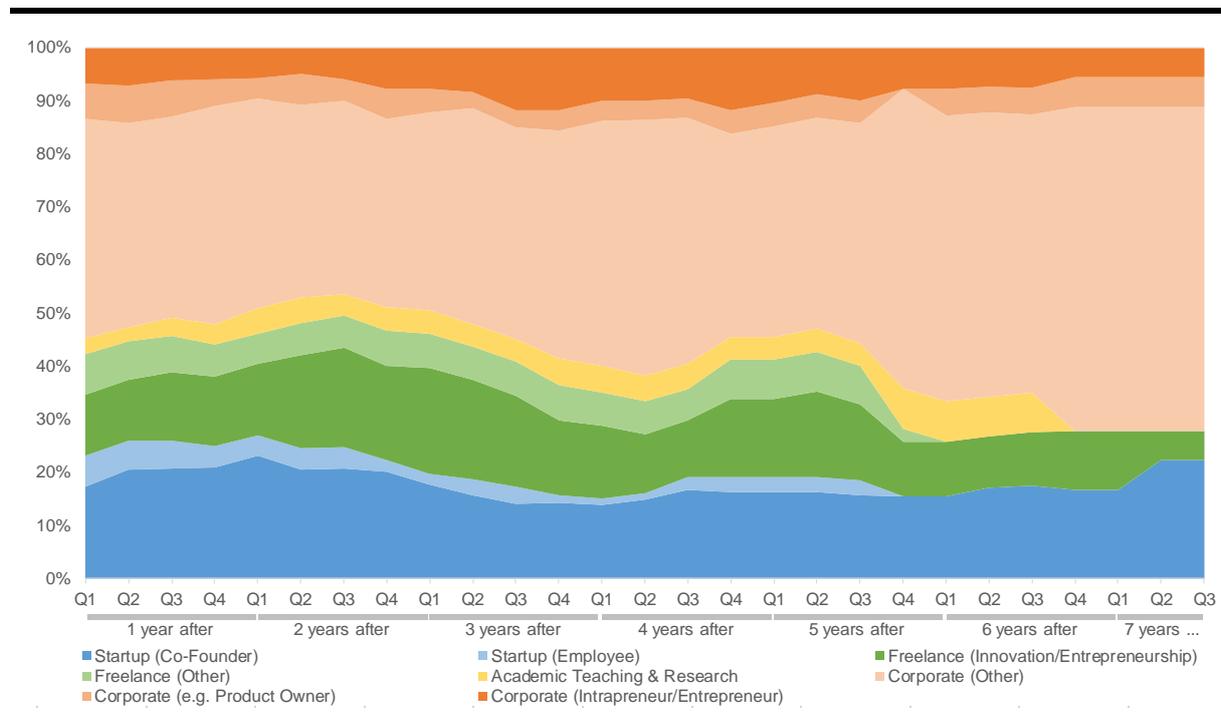
All but one startup in our sample were started by a team of (co-)founders and not by sole entrepreneurs. Several of these startup founding teams were composed of multiple students from the APE, which either got to know each other during the programme or through one of the regular alumni-events. Overall, this is in line with findings from the German Startup Monitor, which suggests that more than 80 % of the German startups were founded by teams (BVDS, 2017).

A closer look at Figure 2 also reveals that several programme graduates have set up freelance businesses during or after their participation in the APE. The majority of these businesses focused on offering various types of innovation- and/or entrepreneurship-related services, such as innovation workshop facilitation, market research, business development or product testing. A closer examination of the offered services of these businesses reveals several similarities to the course content and general learning approach of the APE. One might therefore speculate that several of the APE graduates turned the entrepreneurial strategies and methods they had learned during the programme into their freelance service offerings.

Despite the several startups and freelance businesses founded by APE graduates, the majority of alumni joined established companies following their participation in the programme. During the coding of the career data, only few of those positions could be categorised as entrepreneurship- or innovation-related (e.g. intrapreneur, entrepreneur in residence, product owner, etc.). However, as becomes apparent from the interviews introduced in the next section, for several interviewees this did not mean that they did not benefit from the programme in other, less direct ways.

Overall, the ratio of these different career classifications and the individual career paths also seems to reflect the attitude towards entrepreneurship in Germany in general. Although many different startup support mechanisms and entrepreneurship education initiatives have been launched, Germany only ranks 64 out of 65 for the total early-stage entrepreneurial activity in the latest instalment of the Global Entrepreneurship Monitor (GEM, 2017). With many competitive job offerings from the many established large and mid-sized companies in Germany, it is also not surprising that Germany only ranks 53 out of 62 for the question whether entrepreneurship is a good career choice or not (GEM, 2017).

Figure 2: Stacked Diagram of Chosen Careers of APE Graduates over Time



This stacked diagram shows the categorised and aggregated data collected via LinkedIn and Xing for the last seven APE cohorts (graduating classes of 2010 – 2017).

3.2. Interviews with APE Graduates

In addition to the analysis of the graduates' career paths via the collected data from LinkedIn and Xing, we conducted phone interviews with six programme alumni to further probe for the reasons for some of the observed career patterns. We used a semi-structured questionnaire which focused on the sequence of jobs after graduating from the APE and on inquiring about the impact which the programme had on the individual career choices. During the conversations, we also explored which principles, approaches and methods from the APE are still being used by the alumni in their current jobs.

Interviewee #1 / male / before: project manager (large company) / graduated in 2016 / today: startup (consultancy)

D. was already interested in startups before taking part in the APE. However, he didn't have a validated startup idea yet and was still looking for potential startup team members. The APE was a "catalyst" for D. It exposed him to a new way of thinking as well as to new like-minded people. The tools he learnt, helped him to gain confidence in "just getting started" with an idea instead of writing an elaborate business plan. While he was still participating in the APE, he quit his corporate job and co-founded a design thinking and digital transformation consultancy.

Interviewee #2 / male / before: project manager (large company) / graduated in 2014 / today: large company (innovation/entrepreneurship related)

Together with two former participants of the APE, O. established a design thinking consultancy to continue to work with the methodology and tools they had learned in the programme. Besides learning how to approach people and how to develop early prototypes, O. stated that dealing with throwbacks was one very important learning experience for him. As a user-centred specialist in an e-commerce corporation, O. now uses several of the principles and methods learned during the APE to raise awareness for customer needs and to rethink customer-centred experiences and touchpoints.

Interviewee #3 / male / before: entrepreneur-in-residence / graduated in 2014 / today: startup (consultancy)

The programme introduced B. to the mind-set and skill-set needed for user-centred thinking, which he wanted to implement in projects right away. Thus, he created a design thinking consultancy with two fellow programme participants. "Just doing it", e.g. through prototyping and testing, has been an important attitude which B. learned during the APE. B. also commented that working in interdisciplinary project teams taught him a lot about himself. Within the programme alumni community, B. found his latest team members and set out to create a new consultancy focused on user-centred innovation.

Interviewee #4 / male / before: IT project manager (large company) / graduated in 2014 / today: IT architect (large company)

D. took part in the APE while working and studying at the same time. He enjoyed and still enjoys working as an information technology consultant. He was motivated to take part in the programme, because he firmly believes that entrepreneurial thinking is not just valuable in a startup context, but is equally beneficial in a corporate context. D. explained that he still benefits from the approaches and methods he discovered during the programme (e.g. the Business Model Canvas and brainstorming techniques). Having followed a "quite structured" learning process for solving open-ended problems during the programme now provides him

with confidence in ambiguous project environments. With different entrepreneurial strategies and methods at his disposal, he also feels “more secure” in solving more complex challenges. D. also highlights that the experience of developing radical ideas in different team-settings during the APE has greatly impacted the way he now approaches problem-solving tasks.

Interviewee #5 / male / before: engineer (large company) / graduated in 2012 / today: engineer (large company)

After participating in the APE, M. returned to his engineering job in a large automotive corporation and did not rely much on the approaches and methods he had discovered during the entrepreneurship education programme. However, during a short period of time when he moved into a different role as an engineer in the advanced development team for a new product, he rediscovered and applied some of the tools he had previously learned during the APE. For him, the programme was most beneficial in terms of growing on a personal level and gaining confidence as a problem-solver. As a product engineer who also sometimes gets involved in service development, he now works with people from various different departments and backgrounds. M. also mentioned that through his participation in the programme, he has learned to appreciate and merge these varying perspectives in his daily work.

Interviewee #6 / male / before: quality manager (large company) / graduated in 2012 / today: consultant (mid-sized IT innovation company)

S. had been feeling unhappy in an ‘old school’ hierarchical engineering company when he decided to participate in the programme. The APE helped him with reinforcing his desire to move into a more challenging and fulfilling role at a different company. During his participation in the programme, he started searching for companies which promote innovation and creativity among their employees and have flat hierarchies. Eventually, he discovered his current employer. For S., one key learning from the programme, which is especially relevant for his current position is customer-centred thinking and action.

4. DISCUSSION AND IMPLICATIONS

Through this ongoing research project, we hope to enrich the understanding of possible career trajectories of entrepreneurship education graduates. By looking at what graduates “actually do” and not just what they “intend to do” after they graduate, we propose to stimulate the academic discourse on the scope, aims and objectives of university-based entrepreneurship education. Our research approach for tracking and analysing career paths of graduates allows educators to better illustrate the diversity of entrepreneurial careers and to better tailor entrepreneurship education to the needs of programme participants.

In this discussion chapter, we want to highlight four findings and conclusions drawn from the initial data analysis.

First, during the data collection and analysis we did not discover clear pattern within the career paths of our graduates (e.g. gaining experience in a corporate environment first, before building a startup – or vice versa). The career paths of the graduates are rather multi-faceted and based on individual circumstances. However, we noticed that several (student) graduates of the APE launched their startups while they were still studying full-time. In such instances, a structured intensive entrepreneurship education programme may act as a catalyst for the entrepreneurial intention of such students.

Second, we noticed several startup companies in our sample, who have recruited either additional (co-)founders, early employees or interns from the pool of APE alumni. This highlights the importance of actively facilitating connections between programme participants across the different programme cohorts, e.g. through an active alumni network or regular meetups and events. Joining an existing startup, which is founded by former programme participants, can be a powerful way for new and aspiring entrepreneurs to develop and test their skills and motivation early on.

Third, several programme graduates set up individual freelance businesses, either as their primary occupation or as a part-time supplementary job. Most of the services offered by the freelance businesses in our sample were related to the entrepreneurial principles, strategies and methods offered in the APE. In that sense, these freelance entrepreneurs have turned “entrepreneurial thinking” into their product/service, rather than using the tools at their disposal to create other startup ideas. This finding has led us to contemplate several changes we want to include in the course curriculum to more directly prepare graduates for such career paths.

Fourth, acting on one’s entrepreneurial intention and starting up one’s own new venture is a difficult choice, which should not be downplayed. Many of our graduates went on to join larger established organisations, often in roles which are not directly related to innovation or entrepreneurship. However, all interviewed programme alumni who took up such roles highlighted that their participation in the programme was still a valuable learning experience for them. They stressed that even though they do not use all the strategies and tools they had discovered during the APE, they nonetheless benefit from individual principles and elements, such as e.g. user-centered thinking and interdisciplinary teamwork, in their current positions. We conclude that the curriculum design and the related learning goals of entrepreneurship education programmes need to consider the fact that not all graduates will necessarily start their own business. Therefore, the benefits and strategies for using entrepreneurial thinking within larger organisations should not be passed-over in entrepreneurship education, but should instead be viewed as another facet of graduates’ career paths.

5. LIMITATIONS OF THE APPROACH AND FUTURE RESEARCH PLANS

While the collection of publicly available data via professional social networks such as LinkedIn and Xing provided several advantages, certain drawbacks of the data collection approach also became apparent during this research project. First and foremost, a social- and professional desirability bias almost certainly exists in the collected dataset. It can be assumed that graduates who join a professional social networking site, intend to use this online presence to benefit their professional careers. The information which is entered in a profile will therefore likely tend to highlight favourable professional achievements, while potential “missteps” (e.g. a failed startup) are likely to be downplayed or not mentioned at all. This bias in the self-reported data also became apparent during this research study. The authors noted many instances where graduates tended to “up-sell” certain positions by e.g. not indicating if a position was held part-time or by labelling mandatory internships for their university degree programmes as regular industry positions. On the other hand, several startup activities of which we knew through our ongoing interaction with former participants, were not mentioned in the online profiles and therefore could not be included in the data analysis.

Another less severe drawback of this research approach is introduced by the need to categorise and code the collected data for further analysis. While in a survey-based approach such categories can be pre-defined, our collected data had to be categorised by hand. In cases where the collected career data was ambiguous, this forced us to classify certain jobs and activities to

the best of our knowledge, instead of leaving the classification choice up to the research subjects.

It should be noted again at this point, that during the data collection we greatly benefited from relying on two separate professional social networks as data sources. During our research, we noticed several instances in which the profiles on LinkedIn and Xing were quite inconsistent. In 66 % of the analysed cases we were able to “triangulate” the collected career profiles from two different sources, which allowed us to improve the overall quality of our dataset.

In the future, we want to extend this research in two major ways. First, we are planning to collect data from a control group of former students with similar demographic profiles, who have not taken part in any formalised entrepreneurship education programmes. This will allow us to compare, contrast and hopefully improve our findings. Second, we are experimenting with different approaches to automate the data collection process via social networking platforms such as LinkedIn and Xing. This would allow us to greatly reduce the effort to continuously update and expand our dataset for future research projects.

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