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VOLKSWIRTSCHAFTLICHE BERATUNG

CTI Entrepreneurship: Impact analysis and evaluation

Management Summary

B,S,S. Volkswirtschaftliche Beratung

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Management summary

for the attention of Innosuisse

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The authors would like to thank all of the interviewees for sharing such in-depth information about their experiences and observations during the CTI Entrepreneurship courses.

Gender-sensitive language: the report generally uses gender-sensitive language. The authors deviate from this principle in some passages in favour of linguistic elegance; however, women are also included in male expressions and men in female ones.

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Starting point and mandate

Until the end of 2017, the Commission for Technology and Innovation (CTI) – under the umbrella brand “CTI Entrepreneurship” – supported awareness-raising and training programmes at Swiss universities aimed at university members and founders interested in setting up a company. Today, the successor organisation Innosuisse is continuing to run the slightly adapted courses under the new name “Start-up Training”.

The aim of the courses was (and still is today with Innosuisse’s courses), on the one hand, to create an environment for knowledge- and technology-based start-ups to successfully develop and, on the other, to support company founders and interested parties with practice-oriented training modules in setting up a business and developing the start-up.

This evaluation refers to courses which were held in 2016 and 2017, thus under the former CTI. It analyses the structure of the course participants as well as the conception, implementation and impact of three CTI Entrepreneurship Training Programmes: module 2 “Business Concept”, module 3 “Business Creation” and module 4 “Business Growth”.

Theoretical framework and evaluation design

The overall framework for the evaluation is based on an impact model. The model shows which conditions or inputs are available to conduct the CTI Entrepreneurship Courses and how the courses tend to have an impact in terms of founding and growing start-ups.

In order to analyse the effects of the courses on the individual participants, the evaluation is based on the theory of planned behaviour (TPB), a socio-psychological model for investigating factors influencing entrepreneurial behaviour. Accordingly, the participant survey conducted within the scope of the mandate asked about parameters which, according to the TPB, are particularly relevant in terms of entrepreneurship.

Methods of collecting information

The evaluation will use different methods of gathering information to determine the impact of the CTI Entrepreneurship courses:

- The online survey conducted among all course participants (complete survey) forms the core of the evaluation.

- A control group survey for module 2 was also conducted at the School of Management and Engineering Vaud (HEIG) and the Swiss Federal Institute of Technology in Zurich (ETHZ).
- Expert discussions were held with various stakeholders.

The execution of the participant survey was extremely successful overall. With very few exceptions, course participants were invited to take part in the survey on time and the response rate of up to 70% is very high for such a survey. Even in the third wave of the survey, six months after the end of the course, the response rate was 30% for most modules. The control group survey saw a very good response rate of 9 to 13%.

Talks were held with 21 experts. Interviews were also conducted with seven former participants and two CTI representatives, addressing topics such as conceptual design, implementation and the impact of CTI Entrepreneurship as well as cooperation among the stakeholders.

Evaluation methods

The results of the survey were evaluated in a descriptive analysis. Econometric analyses also provide indications of the impact of the courses. The results of the control group survey could also be fed into a so-called difference in differences (DID) approach. The data collected in the control group survey also allowed statements to be made about awareness of the training modules. The report brings together findings from the various sources of information and methods of evaluation.

Descriptive analysis of results

The descriptive analysis indicates a variety of information about participants in the CTI Entrepreneurship courses and their perception of the courses. The results of course participants can also be compared with those of a random sample of students from two universities. The most important results of the chapter are summarised below.

Information on participants in the CTI Entrepreneurship courses

- In 2016 and 2017, around 2,200 people took part in CTI Entrepreneurship courses (modules 2-4) (module 2: 1,253 participants, module 3: 704 participants, module 4: 249 participants).
- The participants in module 2 are 29 years old on average, those in module 3 are 34 years old on average and those in module 4 are around 38 years old. About half of the participants in module 2 are Master's or Bachelor's students at a Swiss university. Most of the other participants already hold a Master's or Bachelor's degree from a Swiss university when they participate in the course. About 15% of the participants in module 3 are students, while in module 4 all participants have either graduated or have a different professional background.
- The proportion of women in courses is 30% in module 2, 25% in module 3 and 12% in module 4.
- In module 2, about 70% of the participants have a professional background in mathematics, engineering sciences, natural sciences and technology (STEM). In modules 3 and 4, 50% of the participants have a STEM background, while people who are studying or have studied business and management are more strongly represented in these modules.

Participant satisfaction and change requests

- Almost all the modules receive very good overall scores in the categories “teaching”, “usefulness” and “overall”, with scores in the 6-range on a scale of 1 to 7.
- Many participants (48-60% depending on the module) would like more one-on-one coaching.
- The structure and heterogeneity of the course participants are occasionally criticised. It does not seem to be always possible to get sufficient participants with the target profile for modules 3 and 4.
- Survey participants were able to freely give positive and negative feedback in an open response box. The feedback given here for modules 2 and 3 is mainly critical, while that for module 4 is mainly positive. The most potential for improvement in all modules is seen in the relevance of the course content in practice.

Direct impact of the courses

- About half of the participants in module 2 found a potential industry partner through the course. The subsequent modules saw 20 to 30% of participants find an industry partner.
- The survey asks about various parameters which relate to attitudes towards entrepreneurship and reflect the support provided by the social environment in terms of setting up a business. The result here is: as early as at the beginning of the course, the participants specify values indicating a positive attitude towards founding a business. These values are barely influenced by participating in the course. However, a more detailed examination reveals a separation among participants in module 2 namely that the values or attitudes to entrepreneurship increases for some participants and dwindles for others. This can be interpreted as follows: during the course, it becomes clearer to the participants whether setting up a company is actually a desirable option for them.
- After the course, participants in module 2 state that they feel in a better position to make decisions in the face of uncertainty, which is an important requirement for entrepreneurial work. They also estimate the probability of entrepreneurial success to be higher at the end of the course than before it. No major differences in these aspects can be observed for participants in modules 3 and 4.
- The participants in all modules state that taking part in the course allowed them to significantly improve their (specialist) skills, indicating an average rating of 5 to 5.4 across all aspects on a scale of 1 to 7. What they had learned also proved useful in the medium term (for six months after the course finished).

Results of the control group survey

- The awareness of the CTI Entrepreneurship courses is significantly lower than other offers in the field of start-up support.
- Only 6-7% of ETHZ students are familiar with the CTI Entrepreneurship modules 2-4, with 9% of them familiar with module 1. 43% of ETHZ students, on the other hand, are familiar with the “Venture Kick” course offered by private companies and foundations.
- Among the students at the School of Management and Engineering Vaud (HEIG), CTI Entrepreneurship is somewhat better known than at ETHZ: 6-16% of HEIG students are familiar with the CTI Entrepreneurship modules 2 to 4. The coaching services offered by GENILEM are much better known in western Switzerland, with an awareness level of 37%.

- The CTI coaching services with awareness values of 17% (ETHZ) and 19% (HEIG) respectively are considerably better known than CTI Entrepreneur modules.

Results of econometric analysis

Overall, the econometric analysis shows that module 2 (“business concepts”) had a significant impact on the participants. The intention to start a business is significantly reduced by almost one third, which can be interpreted as the participants’ more realistic and critical assessment of their suitability for entrepreneurship. Conversely, the self-assessment of their own competence significantly rises on a broad basis, which is indicative of the course’s sustained positive learning effect. At just under 30%, this also leads to greater willingness to start a business. Module 2 proves a success in this sense.

The results of the econometric analysis can be interpreted to mean that module 2 subjects participants to a reality check on the extent to which entrepreneurship is (currently) a realistic career option for them. At the same time, the semester-long module has a positive effect on the motivation (attitude) of some of the participants. By contrast, even more motivated people (attitude) attend module 3, who receive considerable support for their specific business idea on the five-day course through competence building (perceived behavioural control PBC – a variable that measures the subjective assessment of a person with regard to whether a certain action is easy or not for them).

The control group comparison suggests that participation in the course mainly leads to change in the participant’s assessment of their own competence (PBC) for starting a business. The structural equation models subsequently show that these changes have a significant effect on the participants’ entrepreneurial intentions. It can thus be concluded that the CTI modules 2 and 3 help to further boost the entrepreneurial spirit among those participants who feel strongly drawn to the idea of founding a company. This type of support is therefore definitely having an impact. Six months after the end of the course, however, the value of the entrepreneurial intention decreases. It is probably natural for this effect on the intention to set up a company to decrease somewhat when the time to found a company gets closer, with only the hardcore of those willing to set up a company actually taking the leap. The actual behaviour could not be examined in this evaluation, as not enough time had elapsed since the end of the course.

Summary of the analysis of the expert discussions

Discussions with various stakeholders have shown that – at least in the eyes of the majority – there is a need on the part of people interested in start-ups and new company founders to boost their knowledge in a course. A large number of people feel that CTI Entrepreneurship's offer is fundamentally suitable for meeting this need. The modular structure of the CTI Entrepreneurship courses received positive feedback. In terms of the positioning of the courses among the existing start-up support services on offer, there is great demand for module 2 in particular, as there are fewer alternative offers for this stage of founding a company. On the other hand, the decreasing demand from participants for module 3 and especially module 4 indicates that this service does not fully meet their needs, there are sufficient alternatives or the level of awareness is not high enough.

Defining the target group proved an important topic in discussions with experts, with opinions differing widely. Increasing the diversity of industries and business models within the CTI Entrepreneurship courses tended to be a popular opinion. However, the advocates of broader diversity did not agree on whether people from different backgrounds should participate in separate courses or whether a heterogeneous group would allow for better discussions. Another area of conflict was the question of whether only particularly promising founders should be supported or whether interested parties who cannot (yet) put forward a promising project should also be accepted. This question also arises against the background that the conscious decision not to set up a company with little prospect of success can also be seen as a positive outcome of the course.

Overall, the implementation and organisation were perceived as very good. Particular attention is to be paid to regional integration here. It is to be assessed whether or not to promote the level of awareness of this offer. Closely linked to this is the question of how strictly the participation criteria should be applied when selecting participants. Several experts pointed out that the participant criteria become more or less strict depending on the current number of applications or rather the demand. This is understandable, but it also leads to the group of participants in some courses being much more heterogeneous than in others. The cooperation between the various stakeholders involved was generally perceived as positive.

Although the effect of the CTI Entrepreneurship course was rated positively overall, many deem the extent of this effect to be rather small. The course's strengths particularly lie in the fact that participants can exchange ideas, receive feedback on their own projects and become aware of the next steps and possible pitfalls. The fact that the effect of the course is regarded as rather low can probably mainly be attributed

to its concept: a course of just a few days in length can lend participants a positive impetus, but it is unlikely that it can influence the founding of a business in a comprehensive way. Several experts mentioned that the effect of the course could be increased by subsequent follow-up support in the form of a short refresher course. The former participants surveyed also have very different views when assessing the effects of participating in the CTI Entrepreneurship course on their professional careers. One expert brought up the image of a jigsaw puzzle, which seems very fitting overall – the CTI Entrepreneurship courses are a valuable and useful piece in a jigsaw puzzle made of many factors leading to a successful start-up.

Conclusions and courses of action

Continue the courses in principle: The CTI's Entrepreneurship courses are rated very positively by participants and experts alike. The econometric study shows that the courses have a positive influence on the entrepreneurial spirit of the participants. The first recommendation is therefore to certainly continue the courses in principle.

Keep the course structure the same for now: The differentiation between three separate modules should be upheld. In discussions, experts welcomed the modular form of CTI Entrepreneurship with its three different courses for different target groups and project stages.

Observe more closely whether modules 3 and 4 get enough participants and whether they correspond to the target group: Observations for modules 3 and 4 sometimes revealed that not enough participants could be found or that not all participants correspond to the relevant course profile. This leads to heterogeneity in terms of the maturity of the project, which is detrimental to the goal-oriented work in these courses. It should be closely monitored in the coming months and years whether the participants now better match the course profile. However, if no progress is made here, it would have to be examined whether modules 3 and 4 could be resized (if necessary, in favour of the apparently strong demand for one-on-one coaching), especially since private offers are also on the market for the target group.

Check possible extensions to forms of knowledge transfer: It needs to be examined whether the forms of knowledge transfer could be extended. It would be possible to deal with topics that are relevant for all start-ups together and offer individual course days with in-depth courses for certain groups. This would possibly also satisfy all the different ideas regarding the desired level of heterogeneity: some participants want the greatest possible level of heterogeneity among the participants, while others would like to see the greatest possible level of homogeneity. Using e-learning (e.g.

webinars) should also be considered in order to minimise access barriers for participants.

Examine how the gap between CTI Entrepreneurship and CTI Coaching can be closed: Many participants in the CTI Entrepreneurship courses would like more one-on-one coaching. Although Innosuisse currently offers intensive one-on-one coaching, the service is not part of the CTI Entrepreneurship modules 2-4. There seems to be a supply gap between CTI Entrepreneurship and coaching. It would be useful to consider how this gap could be closed. One possible way would be to define a first stage of coaching with a lower acceptance threshold and then afterwards decide which people/companies can move into a second, more intensive stage. An alternative would be to strengthen the coaching element within the framework of CTI Entrepreneurship.

Assess the introduction of follow-up support: In expert discussions, it was suggested that participants could receive follow-up support at the end of the course. This suggestion should be examined in greater depth.

Optimise expectation management with regard to teaching methods: As mentioned above, many participants in the CTI Entrepreneurship courses want more one-on-one coaching. As things stand now without changing the services, Innosuisse should examine whether the way in which CTI Entrepreneurship courses are advertised today raises false expectations in terms of the teaching methods used. The fact that the teachers are referred to as “trainers” and “coaches” may send the wrong signals. Expectation management should be optimised in any case.

Put more effort into addressing women: The female quota of CTI Entrepreneurship courses is far below 50%. Although this is also the case for start-up courses offered by other providers, and the STEM subjects are still dominated by men on average, Innosuisse should nevertheless find ways of increasingly addressing young women with its courses.

Optimise the recording and monitoring of courses and participants: The process of recording and monitoring participants should be optimised, provided that this has not already been done in the course of the evaluation period. Innosuisse should be responsible for centrally managing this process. Once implemented, the system should not be changed for as long as possible. This is the only way to make intertemporal comparisons at a later date, and it also keeps the administrative costs low.

Increase awareness of the courses: At the time of the evaluation, the CTI Entrepreneurship courses were not very well known among the students surveyed for the

control group analysis. This will not have changed fundamentally, even under Innosuisse. It can now be argued that prospective entrepreneurs can proactively find out about suitable further training offers. This possible argument does not fit for module 2, which is intended to motivate university members to found a company. The fact that CTI/Innosuisse is not able to offer enough course places anyway, as representatives of CTI have told us, must also be considered as an argument against more marketing. It would be better if more places were also offered if there were greater interest in the courses, or if there were greater competition for the places. We therefore recommend investing more resources in course visibility. This also particularly applies to modules 3 and 4, which – as suggested by experts in their discussions – attract less interest than module 2. An appropriate communication strategy could or should be developed as a first step.

Strengthen the long-term perspective of course providers: Two experts interviewed as part of the evaluation take issue with the courses being put out to tender in a public procedure. Competition is certainly good in principle. Developing a course like this, however, involves considerable investments. The longer a provider has to plan, the more likely they are to see larger investments as meaningful. Finally, university courses are also being put out to tender less and less. Instead, the Federal Government has established rules for funding the range of higher education programmes, which open up long-term prospects for universities. The high quality of university courses is mainly ensured through accreditation and supported by certain incentives in the funding system. It would, in any case, be necessary to examine how the long-term perspective of course providers can be strengthened, taking into account the legal framework conditions.

Encourage discussions between entrepreneurship course providers: Compared to Germany, there seems to be little expert discussion between providers of entrepreneurship courses. Innosuisse could initiate a more in-depth exchange. This exchange should or could be not only for organisations offering CTI Entrepreneurship courses, but also for teachers of university-level entrepreneurship courses and private providers of entrepreneurship courses.

Outlook

Follow up on open questions: This evaluation has not provided conclusive findings on all questions. The question of how homogeneous the module participants should be proved to be a controversial one. As a result of amendments to the concept of entrepreneurship courses, the homogeneity of the participants in modules 3 and 4 is likely to have increased. Against this backdrop, it could and should be discussed whether the greater homogeneity has now brought about improvement.

Initiate portfolio analysis of promotional measures: In line with the specification and evaluation concept, this evaluation focuses on the analysis of the CTI Entrepreneurship modules 2-4. An analysis of the curricula of individual modules was not explicitly part of the evaluation either. An analysis of both the content and concepts of a) CTI Entrepreneurship courses and b) courses offered by other providers could lead to findings which Innosuisse could use to further optimise its Entrepreneurship courses. This is all with the aim of helping company founders receive the best possible support overall and across all of the services on offer.