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A note on the effects of start-up competitions: experience from the Czech Business Plan Contest “Idea of the Year”

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Abstract

The study contributes to the scholarly discussion on the effects of business plan competitions by assessing the survival and performance of the entrepreneurial teams participating in the Czech Business Plan Contest “Idea of the Year” during the years 2010–2015. The implemented research design followed up with the finalists, receiving financial and non-financial rewards 5 years after participating in the contest. The implemented scientific methods include mainly survival analysis and applied statistical techniques, such as cross-tabulations, tests of association, *t*-tests and correlation analysis. The obtained results allowed us to empirically support a hypothesis assuming that participation in the business plan contest positively relates to new venture creation, start-up survival, and performance. The study provides a series of recommendations for the contest’s organizers, especially in terms of evaluation and monitoring and encouraging the projects’ diversity. The added value for the international scholarship is that the article utilizes a complex theoretical framework combining various types of entrepreneurial capital that may be well used in future studies aiming to assess the impacts of start-up competitions.

Keywords: Start-up contest, Business plan competition, Entrepreneurship and SME policy, Entrepreneurial ecosystem, Firm survival, Czech Republic

Introduction

Start-up, pitching, and business plan competitions are undoubtedly part of the so-called entrepreneurial ecosystem concept, shaping broader cultural, social, economic and institutional surroundings of entrepreneurs and persons engaged in self-employment (O’Connor et al., 2018; Watson, 2019; Stolz, 2020; Smith & Muldoon, 2021; Adam & Alarifi, 2021; Carayannis et al., 2021). Building on a seminal study on entrepreneurial ecosystem pillars by Stam (2015), Stolz (2020) notes that start-up competitions (SUC) combine several aspects of the ecosystem and mobilize numerous different actors. Therefore, those belong to both framework and systematic conditions, contributing in several ways thus to the overall quality of the ecosystem. Furthermore, Stolz (2020, p. 242) highlights the role of start-up competitions as the hub, which connects nascent entrepreneurs with other individuals willing to pursue a business with experts and

professionals and boosts the networking of experts and professionals as well. Besides, Passaro et al. (2017) add that start-up competitions increase awareness about entrepreneurial learning processes and increase the prestige of business careers in the whole society.

Past research concentrated on multiple dimensions of the phenomenon since the first start-up competitions originated at Babson College, Massachusetts, United States of America (Fetters et al., 2010). Watson (2019) explains that since then, there have been various terms associated with start-up competitions, such as “business plan contests, business planning competitions, enterprise challenges, idea challenges, pitching competitions, competitions, enterprise challenges, idea challenges, pitching competitions, business design competitions, business idea competitions, business venture competitions” (Watson, 2019, p. 121). However, according to Watson (2019), the parameters of these events are somewhat similar. In brief, these regional, national and international activities aim to select teams with the best business proposals and support them with a maximum of financial and non-financial resources to boost their endeavour (der Foo et al., 2005; Schwartz et al., 2013; Boulocher-Passet et al., 2019; Joseph et al., 2021; Smith & Muldoon, 2021; Saripah et al., 2022). Tipu (2019) conducted a survey of the previously published literature and provided a structural overview of 22 studies. Tipu’s (2019) literature review article demonstrates that the previous research on business competitions focused mainly on the structure, conditions, judging process, and benefits for participants rather than assessing their impact on the participating teams. Another review outcome is that the current evidence is mainly driven by the British and American context, neglecting findings from emerging and developing countries (Tipu, 2019).

The need to monitor the participating teams after the contests was articulated already by several scholars (Watson & McGowan, 2019; Tipu, 2019; Stolz, 2021), especially regarding the survival rates, finance acquiring, official business start-up, and performance. However yet, not many studies have addressed the issue empirically, primarily due to a lack of data. One recent exception is Kiesel and Harkiolakis’s (2021) study, which provided emerging observations from German teams participating in the business plan competition between the years 1999 and 2018. While the authors observed positive outcomes concerning networking for the most successful projects, they could not prove an association with the future success of the participating start-ups. These ambiguous findings are not favourable for the organizers of the contests. Thus, it is critical to extend the previous results and see if the German case was an exception or if the evidence from other countries is similar.

We contribute to the body of knowledge on the effects of business plan competitions by evaluating the Czech Business Plan Contest “Idea of the Year” (2021), the country’s longest-lasting business plan competition. The Czech Republic is a small open European economy with a long tradition of entrepreneurship and higher levels of entrepreneurial activity (Lukeš, 2017; Čemerková et al., 2017; Pavlák & Petřů, 2018; Dvouletý, 2019; Dvorský et al., 2020; Hamplová et al., 2021; Peterková et al., 2022). We follow up with the best-graded finalists 5 years after the contest. We investigate the projects’ survival and the newly established firms’ financial performance, measured as sales and assets growth. More formally, the current research study seeks to answer the following

research question “What are the impacts of the business plan contest on project survival and newly established venture performance?”

The study follows up with the finalists 5 years after the contest. The evaluation focuses on the project’s survival, the role of the selected team’s characteristics and the newly established firm’s financial performance. We proceed by pointing out the fundamental theories, shaping the process of business plan competitions and start-up performance. Then, the contest “Idea of the Year” and the data sources are introduced, followed by the start-up survival and performance analyses. The final section concludes with implications for the business plan competitions organizers and research community.

Theoretical considerations and hypothesis development

Depending on the start-up competition organizers (university vs. non-academic entities) and expected outcomes (networking of actors, acquiring entrepreneurial skills, business start-up, and project visibility), the scholars utilize several theoretical approaches (Tipu, 2019, Stolz, 2021). As a common ground, we may use the theory of planned behaviour (Ajzen, 1991; Neneh, 2019), assuming that individuals willing to pursue a business are closer to becoming entrepreneurs by taking any small step related somehow to entrepreneurship. Business plan competition might be thus a crucial event, activating an individual intending to start a business to actually decide to officially start a business (Passaro et al., 2017).

Furthermore, researchers (Schwartz et al., 2013; Watson et al., 2018; Smith & Muldoon, 2021) explain that participation in the contest, which may also be understood as an experiential learning technique, provides teams with a unique opportunity to present and defend their business idea in front of the judges, to make sense of their own project and increase their self-confidence. This agrees with the previous literature on nascent entrepreneurial learning (Karataş-Özkan, 2011).

Even the best ideas, praised by the juries, cannot be transformed into real business companies without the proper resources, classified into physical, human, social (relationship) and financial capital (Colombo & Grilli, 2010; Kellermanns et al., 2016; Drover et al., 2017). By adapting the theoretical lenses of the resource-based view (RBV) on entrepreneurship (see, Kellermanns et al., 2016, for details), we assume that the business plan competition may provide individuals with the missing resources. It enables them to set up the business officially, increase its chance to survive, and boost its performance. Depending on the contest’s conditions, the participants can attain financial capital through financial rewards or direct funding offers from the judges, often investors themselves, and get the crucial initial investment to start up (Watson et al., 2018). Similarly, the social (relationship) capital could be enhanced, by the increased project’s visibility, providing the team with opportunities for networking with established ventures, suppliers, investors and (potential) customers (Passaro et al., 2017). Some competitions even provide winners with physical rewards (equipment) or free office space at the entrepreneurial infrastructure (incubators, accelerators, coworking spaces), giving a team an actual place where they can do business and benefit from the start-up culture (Schwartz et al., 2013; Dvouletý et al., 2018). Working closely with the mentors and benefitting from the variety of advisory services and training, the founders learn new

skills, acquire new knowledge and increase their experience with the start-up scene, thus improving their human capital (Russell et al., 2008; Watson, 2019).

Therefore, it is relevant to ask how these considerable investments into resources shape the entrepreneurial endeavour. Thus, we ask our main research question: What impacts does the business plan contest have on project survival and newly established venture performance? By using the lenses of the resource-based view (RBV) on entrepreneurship, we set up the following hypothesis, linked with the business plan contest's goal, to be tested in our study:

H1: Participation in the business plan contest is positively related to the venture creation, start-up survival and its performance.

Contest “Idea of the Year” and the data sources

The contest “Idea of the Year” (2021) is the longest-lasting business plan competition in the Czech Republic, which started back in 2007. The main partners have been changing until 2011, when Vodafone, a telco company, joined the competition's board and remained the leading (titular) partner until now. The contest focuses on business ideas and early-stage start-ups, who may compete in several categories (e.g., start-up of the year, best technological project, best student team) for tangible prizes, learning workshops, mentoring and financial investment up to 3.75 mils. EUR. The applicants need to deliver several materials, particularly a power-point presentation, an executive summary of the project, a video of a maximum of 30 s and a structured business plan. Templates and learning materials are available on the website of the competition. From all applications (usually a few dozen), the top 30 projects are selected, and teams are invited for an elevator pitch. Out of these, the top 10 projects (but sometimes even 14) are invited for the mentoring day, having assigned a mentor, helping them prepare the best pitch, work on their product and enhance the business plan. During the final elevator pitch, judges consisting of corporate sector managers, venture capital representatives, business angels, successful entrepreneurs, lawyers and journalists assign rankings and select the contest winner. It is crucial to note that each of the finalists is rewarded (seed money, advisory services, vouchers for web hosting, software, mentoring, marketing services, etc.), and the results are announced at the annual ceremony, which is also live-streamed and published on YouTube and other channels (Idea of the Year, 2021, YouTube, 2021). The selection process and the categories of rewards are very similar to other contests across the globe (Watson, 2019; Stolz, 2021; Smith et al., 2022), for example, compared to the annual B.E.T.A. (Babson Entrepreneurial Thought & Action®, 2022) contest, awarding winners with 28,000 USD plus additional sponsored services or United Kingdom university-based start-up competitions (Entrepreneur Handbook, 2022), such as Smarter Future Programme Shell LiveWIRE Awards offering start-up grants up to 5000 GBP or The Sirius Programme providing funding awards up to 35,000 GBP.

Therefore, we work with the most promising projects—finalists, which may be extracted from the contest's website (Idea of the Year, 2021), who are expected to benefit most from participation in the tournament. We combine this information with the available data from the internet, the Czech Business Register (2021) and the commercial database of financial records of the Czech businesses named Magnus Web, provided by Bisnode (2021) company. Given our interest in the long-term effects of the competition,

we worked with the finalist's data starting from 2010, when Vodafone company joined the contest and monitored them for 5 years. The evaluation included the latest finalists from 2015. This selection was motivated mainly by the data availability, as secondary data for the competing teams needed to be available at least partially for 2021.

Methods and results

The study follows up with the finalists 5 years after the contest. The evaluation focuses on the project's official registration as a business and its survival, the role of the selected team's characteristics and the newly established firm's financial performance. The usage of scientific methods includes mainly applied statistical techniques such as summary statistics, cross-tabulations with Chi-square tests of association, Cramer's V , t -tests and calculation of correlation coefficients.

We begin by exploring the official registration of the finalist's projects. Out of the 68 projects we managed to find on the internet (including a search on the project's websites and the Czech Business Register, 2021) that 66.2% of the finalist managed to start the business officially in the Czech Republic, Slovakia or another European country.

After that, we were interested in whether any available characteristics impact the legal business start-up. We used the Chi-square association test to reveal if gender diversity (at least one female project member included) increases the chance of official incorporation. Only 16.2% of projects had at least one woman in their team, and we failed to find any support for this relationship (Chi-square's p -value = 0.85). Furthermore, we distinguished between solo owner's projects and projects having more than one project member. However, we found no statistical support for this association either (Chi-square's p -value = 0.87). We also checked whether the incorporation rate is tightened with the contest's year, and yes, we observed a statistically significant relationship (Chi-square's p -value < 0.046; Cramer's $V = 0.4$). It looks like, especially after the initial 2 years, the incorporation rate has increased notably, as shown in Table 1.

The study proceeds by presenting the findings of the survival analysis. We conducted another round of searches on the internet and in the Czech Business Register (2021) to see whether the projects were still active. We searched for adverse events related to cash-flow problems, discontinuity in providing services and product delivery and official firm bankruptcy records. We followed up with the newly established

Table 1 Association between contest's year and the incorporation ($N = 68$)

Contest's year/incorporation	No (%)	Yes (%)	Total projects (%)
2010	50.0	50.0	14.7
2011	58.3	41.7	17.7
2012	35.7	64.3	20.6
2013	0.0	100.0	14.7
2014	40.0	60.0	14.7
2015	16.7	83.3	17.6
Total	33.8	66.2	100.0

Source: Own calculations based on the Czech Business Register (2021) and Idea of the Year (2021) data

Test of association, Chi-square = 11.3, p -value < 0.046, Cramer's $V = 0.4$

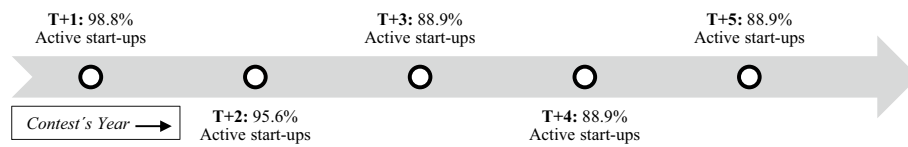


Fig. 1 Start-up survival analysis ($N=45$). Source: Own calculations based on the Czech Business Register (2021) and Idea of the Year (2021) data

Table 2 The legal form of the start-ups

Legal form	<i>N</i>	Frequency (%)
Limited liabilities company	33	80.49
Joint stock company	4	9.76
Self-employed	3	7.32
Non-profit organization	1	2.44
Total	41	100.00

Source: Own elaboration based on Bisnode's (2021) data

organizations in five-time windows, year by year after the contest, with a maximum of 5 years. Figure 1 shows the obtained findings. It shows that the survival rate declined by up to 3 years. Then it became relatively stable for up to 5 years, delivering information that 88.9% of start-ups were active 5 years from the competition event.

Given the lack of data on international businesses, we reduced the sample to the companies doing business in the Czech Republic ($N=41$). At the time of business incorporation, almost half of the business owners started on their own (46.3%), followed by those having two co-owners (41.5%). However, there were also projects co-owned by four people. We also found that more than half of the teams (58.5%) had a person with a university education in their group. The vast majority of the firms were set up as limited liabilities companies (80.5%). For details, visit Table 2.

The main activity of the start-ups was also not too diversified. Table 3 reports on the main economic activity of the established businesses. Almost one-third of the projects were active in computer programming, consultancy and related activities, followed by companies focused on wholesale, and a significant number of teams were engaged in the manufacturing of different types of products (31.7%).

All these characteristics may determine whether the project survives the initial years. The most appropriate approach would be to implement the logistic regression analysis combined with the Cox proportional hazard function estimation (Tubadji et al., 2021; Ugur & Vivarelli, 2021). Unfortunately, given the relatively low number of observations ($N=41$), we cannot estimate a statistically robust multivariate regression model (Wooldridge, 2002). Thus we need to rely on less rigorous but hopefully still valuable correlation analysis, providing information on the role of selected determinants on start-up survival. Mainly, we concentrate on the association with the start-up team size, founder's university education, legal form, regional affiliation and classification of the economic activity. The estimated bivariate correlation coefficients with firm survival in the fifth year are presented in Table 4. Most of the obtained correlations are statistically insignificant. Still, we find empirical support at least for the

Table 3 The main activity of the start-ups, according to NACE-2 Rev. classification

Main activity	N	Frequency (%)
Computer programming, consultancy and related activities	13	31.71
Agents involved in the wholesale	6	14.63
Advertising agencies	2	4.88
Construction of residential and non-residential buildings	2	4.88
Repair of fabricated metal products, machinery and equipment	1	2.44
Manufacture of electronic components	1	2.44
Manufacture of other electrical equipment	1	2.44
Manufacture of games and toys	1	2.44
Manufacture of glass and glass products	1	2.44
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1	2.44
Manufacture of wearing apparel	1	2.44
Other manufacturing n.e.c.	1	2.44
Retail trade, except of motor vehicles and motorcycles	1	2.44
Non-specialized wholesale trade	1	2.44
Renting and operating of own or leased real estate	1	2.44
Accommodation and food service activities	1	2.44
Publishing of books, periodicals and other publishing activities	1	2.44
Other education n.e.c.	2	4.88
Other professional, scientific and technical activities n.e.c.	2	4.88
Activities of organizations to improve the status of an ethnic, minority or other specific groups	1	2.44
Total	41	100.00

Source: Own calculations based on Bisnode's (2021) and Idea of the Year (2021) data

Table 4 Correlation analysis of factors impacting start-up survival after 5 years ($N = 41$)

Variable	Correlation coefficient
Number of founders	−0.06
At least one founder has a university degree (BSc./MSc./MBA or equivalent)	0.06
Limited liabilities company	0.22
Joint stock company	0.11
Self-employed	−0.22
Non-profit organization	0.05
Hradec Kralove Region	−0.48*
Advertising agencies	−0.33*

Source: Own calculations based on Bisnode's (2021) and Idea of the Year (2021) data

*Denominates statistical significance at 10%. Regional and sectoral correlation coefficients are included only if statistically significant for parsimonious reasons

role of the firm's geographical location, and we further observe that advertising agencies indicate a lower survival rate.

The last section deals with the financial performance of the start-ups. We work with limited data on the overall firm size, measured as total assets ($N = 19$) and total sales ($N = 17$). Both variables are denominated in thousands of Czech crowns—CZK. We aim to observe whether the start-ups increased their performance over time. Therefore, we compare financial data in the first year with the records in the 5 years as absolute and

Table 5 Summary statistics for financial growth variables after 5 years of start-up's activity

Indicator	Median	Minimum	Maximum	N
Total assets (difference)	463.0	− 6367.0	54,472.0	19
Total assets (% growth)	137.8	− 98.7	18,315.4	19
Total sales (difference)	715.0	− 3835.0	46,847.0	17
Total sales (% growth)	156.1	− 100.0	707,100.0	15

Source: own calculations based on Bisnode's (2021) data

Table 6 Results of the paired *t*-tests comparing the financial performance of start-ups after 5 years

Total assets	Mean	Standard error	N	t-Statistics
Total assets (5th year)	7056.68	3678.76	19	1.67
Total assets (1st year)	2062.37	891.22	19	p-value (H ₁ : difference > 0)
Difference	4994.32*	2999.18	19	0.06
Total sales	Mean	Standard error	N	t-Statistics
Total sales (5th year)	6387.65	3619.23	17	1.50
Total sales (1st year)	2143.24	1080.83	17	p-value (H ₁ : difference > 0)
Difference	4244.41*	2828.76	17	0.08

Source: Own calculations based on Bisnode's (2021) and Idea of the Year (2021) data

*Denominates statistical significance at 10%

relative differences. We also formally test whether the changes are statistically significant with the help of paired *t*-tests.

Given the relatively high variability in the data, we begin with the median values of indicators. The relative growth in median values (see Table 5) indicates that total assets increased by 1.4 times and total sales almost 1.6 times. The positive difference in the absolute changes in both variables is statistically supported by *t*-tests available in Table 6. At the 10% level of statistical significance, we conclude that the start-up's property and sales have significantly increased over five years. However, we acknowledge that the number of available observations was relatively low, representing only 46.3% (41.5%, respectively) of the Czech start-ups, making this analysis a notable limitation.

Discussion and concluding remarks

Several researchers have recently mentioned a call for assessment of the effects of business plan competitions (Watson & McGowan, 2019; Tipu, 2019; Stolz, 2021). This research contributed to this call by evaluating the effects of the Czech contest "Idea of the Year" (2021), the country's longest-lasting business plan competition. By combining theoretical approaches of the theory of planned behaviour (TPB), entrepreneurial learning and resource-based view (RBV) on entrepreneurship, we formulated a hypothesis assuming that participation in the business plan contest is positively related to venture creation, start-up survival and its performance.

The conducted research followed up with the finalists, receiving financial and non-financial rewards five years after participating in the contest. We found that 66.2% of the finalists started the business in the Czech Republic, Slovakia or another European country. Furthermore, we observe that 88.9% of the registered start-ups were still active on the market five years after the competition. For those businesses we managed to obtain financial data, we report that their financial performance, measured in terms of total sales and total assets, has increased significantly. These results together allow us to support the stated hypothesis's validity empirically. Different types of obtained resources raise physical, human, social and financial capital, which entrepreneurial teams utilize to boost their business activities (Kellermanns et al., 2016).

Therefore, the theoretical approach combining various types of entrepreneurial capital may be well used in the forthcoming studies aiming to assess the effects of start-up competitions on the subsequent performance of the winning teams. As business plan competitions usually deliver different kinds of rewards and resources, it may also be relevant to investigate which rewards most significantly impact the subsequent survival and performance of the winning teams' projects. However, it is necessary to acknowledge that these rewards are often determined by the partners and sponsors of the event, so the organizers have limited power to change them.

Furthermore, we must mention the limitations and challenges of the conducted study. The lack of valid empirical data potentially useful for the analysis is striking. Based on the judges' ranking, we worked only with the finalists of the competitions, i.e. with those who had the highest chance to succeed on the market. Even for this small group of start-ups, the number of observations of available observations was tiny. The competition organizers should promptly address this issue, as it can deliver excellent information on what is happening with the projects after the contest is over. The previous researchers have well-addressed the monitoring indicators and included information about the business incorporation, its survival and performance over time (Tipu, 2019; Stolz, 2021; Kiesel & Harkiolakis, 2021), as demonstrated in this study.

Nevertheless, there are also other relevant outcomes to be tracked, such as obtaining additional funding from investors, scaling up their business idea to the international markets (Schwartz et al., 2013; Tipu, 2019) or increasing the team's human capital and entrepreneurial skills (Russell et al., 2008; Watson, 2019). We strongly encourage organizers of the Czech Business Plan Contest "Idea of the Year" to observe what happens with the projects on an annual basis to obtain a more structured and reliable overview of what is happening with the teams and projects over time (Zoellner et al., 2018; da Cunha & Arvate, 2021). Undoubtedly, focusing on the finalists' success stories and sharing them could increase the contest's prestige in the entrepreneurial ecosystem. More advanced research methods could be employed with more information about the project participants, such as counterfactual impact evaluation or analyses of start-up team survival and performance determinants (Dvouletý et al., 2018, 2022; Tubadji et al., 2021). Furthermore, we suggest the organizers encourage wider teams' diversity, particularly regarding gender (special call for women projects), age (encouragement of senior entrepreneurship), and primary sectoral orientation. The analysed data showed that computer programming, consultancy, and related activities significantly dominated the pool of participating teams (see also insights from Keiretsu Forum, 2021); perhaps engagement

in other business activities could enrich the contest and its culture (Der Foo et al., 2005; Tipu, 2019).

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Author contributions

The author read and approved final manuscript.

Author's information

Ondřej Dvouletý is an Associate Professor at the Department of Entrepreneurship, Prague University of Economics and Business. His research focuses on the heterogeneity of self-employment, entrepreneurship and SME policy evaluation, and entrepreneurial economics. Ondřej's research has been published in leading academic journals, such as *Small Business Economics*, *Journal of Small Business Management*, *European Journal of Innovation Management* and *International Journal of Entrepreneurial Behavior & Research*. He also actively contributes to the development of the academic community. Ondřej is Associate Editor of the *Journal of Small Business Management*, *Journal of Entrepreneurship in Emerging Economies*, and *Central European Business Review*. He is also active in other professional organizations. He is a member of the Committee for socio-economic development, which is a part of the Czech Government Council for Sustainable Development. He also closely cooperates with the Evaluation Unit of the Czech Ministry of Regional Development as an expert in statistics, econometrics, data analytics, and economics.

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Availability of data and materials

Data were purchased from the external supplier and, thus, cannot be published together with the article.

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Competing interests

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