

Park, Jung Eung; Pulcrano, Jim; Leleux, Benoît

Article

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*Corresponding author: Jung Eung Park, Department of Business Administration, University of Zurich, Switzerland
E-mail: jung.park@uzh.ch

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MANAGEMENT | RESEARCH ARTICLE

Impact of venture competitions on entrepreneurial network development

Jung Eung Park^{1,2*}, Jim Pulcrano² and Benoit Leleux²

Abstract: Unlike what organizers of venture competitions usually claim, we found no significant correlation between participating in venture competitions and the expansion of entrepreneurial networks for early stage entrepreneurs. We conducted a linear regression analysis with survey data from entrepreneurs in Switzerland. Participating in a venture competition requires a significant amount of time for an entrepreneur as well as resources that the start-up could use elsewhere for other critical activities. This research can help entrepreneurs decide whether or not to participate in a venture competition by specifying their expected outcomes regarding entrepreneurial networks. Organizers of venture competitions need to design programs that are appropriate to the development stages of the entrepreneurs they are targeting.

Subjects: Entrepreneurship and Small Business Management; Entrepreneurship; Small Business Management

Keywords: entrepreneurial networks; networking process; entrepreneurial ecosystem; venture competitions

ABOUT THE AUTHORS

Jung Park is a lecturer at the University of Zurich. He has worked on family business and entrepreneurship as a research fellow at IMD in Switzerland. He received an Executive MBA from INSEAD and a Ph.D. in Mechanical Engineering from EPFL (Swiss Federal Institute of Technology Lausanne).

Jim Pulcrano is an Adjunct Professor of Entrepreneurship and Management at IMD. His current projects include teaching and research on entrepreneurship, and various strategy, networking, customer-centricity and innovation mandates with multinationals in Europe, Asia and the US. He has had a significant personal involvement as manager or cofounder in 6 startups, and is an investor in several.

Benoit Leleux is the Stephan Schmidheiny Professor of Entrepreneurship and Finance at IMD, where he has been director of the MBA program and director of Research and Development. He is an internationally recognized specialist in entrepreneurship, venture capital, private equity and family businesses.

PUBLIC INTEREST STATEMENT

Startups and startup competitions have become part of the normal business scene, a drastic change from 20 years ago. There are many headlines touting who won which competition or is at the top of which “best startups of” list. Should company founders spend time and put effort into these exercises? What are the true costs and benefits of participation? This paper describes the findings of an empirical study into entrepreneurial network development based on survey data from the Swiss entrepreneurial ecosystem. We found that participating in a venture competition may not lead to effectively expanding the entrepreneurial network for an early-stage start-up. Our results have pragmatic implications for entrepreneurs in deciding their participation, as well as for organizations running venture competitions, and for accelerators and incubators, as they seek to help entrepreneurs.

1. Introduction

Numerous venture competitions and supporting organizations have been launched to help entrepreneurs develop their businesses (Motoyama & Knowlton, 2017; Schwartz et al., 2013). Organizers of venture competitions promote participation by promising benefits that include financial rewards, expanded entrepreneurial networks, enhanced reputations, validation of business models and entrepreneurial education. Among these benefits, entrepreneurial networks are known to be particularly beneficial for small and new firms for early development (Laurell et al., 2017). Researchers often differentiate networks as either having strong or weak ties, depending on the frequency and closeness of the relationships within them (Elfring & Hulsink, 2007; Ren et al., 2016). Strong ties are useful for acquiring the necessary resources, knowledge, and reputation. For example, networks with strong ties can provide financial investments or help connect entrepreneurs to other investors. On the other hand, those with weak ties can provide access to unique sources of information that are unknown to the entrepreneur or his/her strong ties that are in similar social circles (Gunawan et al., 2016; Ren et al., 2016). More recently, researchers are looking at the multiplexity of network—i.e. the interaction of two or more different types of relationships between the same two actors (Bliemel et al., 2014; 2016; Shipilov et al., 2014).

To understand how entrepreneurial networks are created, researchers have focused on entrepreneurs' behavioral aspects (Hoang & Antoncic, 2003; Hoang & Yi, 2015). Entrepreneurial actions and strategies can shape the consequent network structure and the critical capabilities. On the other hand, the psychological aspects of networking have been studied, which involve the cognitive and evaluative processes of entrepreneurs (Casciaro et al., 2015; Kaandorp et al., 2020). During the networking process, entrepreneurs continuously evaluate themselves, other entrepreneurs, and the networking process. Then, the cognitive and evaluative process can affect the selection of their entrepreneurial actions and their consequent entrepreneurial networks. Bridging the two streams of research requires further empirical evidence (Hoang & Yi, 2015; Pollack et al., 2015).

In this study, our research questions are: How do entrepreneurial actions, like participating in venture competitions, lead to an expansion of entrepreneurial networks and which factors affect the relationships? Our regression analysis is based on survey data from entrepreneurs in Switzerland. We found no statistically significant correlation between participating in venture competitions and the size of the entrepreneurial networks of early stage start-ups. However, once the start-up has established itself at a certain stage of development, then participating in venture competitions becomes an effective way for it to expand its entrepreneurial networks. Moreover, there was no correlation between the strength of a start-up's network ties and participating in venture competitions, regardless of the developmental stage of a start-up.

This study makes several contributions to the entrepreneurial networks literature. Entrepreneurs require different types of networks and resources depending on the development stage of their start-up (Engel et al., 2017). We suggest that entrepreneurs' actions alone cannot expand their entrepreneurial networks effectively. The relationships are moderated by the entrepreneur's situation, which affects the cognitive-evaluative process of the two actors—the entrepreneur and an individual in the entrepreneurial ecosystem. Moreover, our results add empirical evidence to the research on how entrepreneurial networks are developed. This research can help entrepreneurs decide whether or not to participate in a venture competition by specifying their expected outcomes regarding entrepreneurial networks. Also, we encourage organizers of venture competitions to design their programs to provide appropriate networking opportunities for participants that are in different stages of business development.

2. Theoretical background

2.1. Entrepreneurial networks

Researchers suggest that entrepreneurial networks are particularly beneficial when starting a new firm and trying to achieve initial growth (Birley, 1985; Hansen, 1995; Watson, 2007; Witt, 2004).

Entrepreneurial networking can improve the effectiveness of community collaborations. The network's community members can reduce unproductive time spent on tasks (e.g. funding applications) and improve the consistency and quality of offerings (Cross et al., 2006). Eventually, they can drive innovative solutions by leveraging the expertise that is distributed throughout the community, which can be generalized to the local entrepreneurial community (Ebbers, 2014; Pulcrano, 2012).

The necessary type of networks varies depending on the development stage of the start-up (Larson & Starr, 1993). Entrepreneurial networks evolve as entrepreneurs face different challenges and require new resources based on the stage of their business development (Hite, 2005; Jack, 2010; Slotte-Kock & Coviello, 2010). Sullivan and Ford (2014) observed structural changes in entrepreneurs' networks to address the changing resource needs as their ventures developed. Similarly, Greve and Salaff (2003) used the three phases—motivation, planning, and establishment—to observe the evolution of the entrepreneur's network structure and intentions. Newbert et al. (2013) presented that entrepreneurs need to build heterogeneous network structures in terms of duration, multiplexity, frequency, and emotional intensity throughout the emergence phase when diverse resources are required at specific times.

Two distinct streams of studies have been undertaken to understand how entrepreneurs create networks (Hoang & Antoncic, 2003; Hoang & Yi, 2015). The first stream focuses on the entrepreneur's behavior. Researchers in this stream explore what entrepreneurs do to create and shape network ties (Hallen & Eisenhardt, 2012; Ozcan & Eisenhardt, 2009; Stuart & Sorenson, 2007; Vissa, 2012; Vissa & Bhagavatula, 2012; Zott & Huy, 2007). Entrepreneurial actions and strategies are crucial for creating and discovering opportunities, mobilizing resources, and forming inter-organizational partnerships (Bensaou et al., 2014; Engel et al., 2017). Researchers categorize networks according to different characteristics including intra-cluster or extra-cluster networks (Gunawan et al., 2016), existing or new relationships (Laurell et al., 2017), and strong or weak ties (Hallen & Eisenhardt, 2012; Vissa, 2012). Therefore, entrepreneurs choose their entrepreneurial actions and strategies to develop the different types of networks they need based on the development stages of their businesses.

The second stream of studies takes a psychological approach to understand how entrepreneurs create networks (Engel et al., 2017; Kaandorp et al., 2020; Porter & Woo, 2015). Researchers in this stream focus on the cognitive-evaluative processes that drive actions at the moment of networking. This approach provides insights into why entrepreneurs create or fail to create specific networks (Casciaro et al., 2015; 2014; Kuwabara et al., 2018). In many ways, the networking process is a two-way street based on trust and reciprocity between two actors (Hollow, 2020; Porter & Woo, 2015). As cognitive evaluation centers on the entrepreneurs in the initial networking phase, the process is driven by evaluating the potential resources that can be exchanged (Engel et al., 2017). There can be a situation where one of the actors needs help but cannot prove a potential willingness to help the other side. In another situation, a new entrepreneur may not yet be committed to the start-up; therefore, it is uncertain whether he or she will continue staying in the entrepreneurial ecosystem (Pollack et al., 2015). If this is perceived to be the case by others, building up a meaningful relationship with other entrepreneurs in the community becomes challenging.

2.2. Hypotheses development

We investigate whether entrepreneurial actions, like participating in venture competitions, can help expand entrepreneurial networks and which factors affect the networking process. To support start-ups and encourage new venture creation, a number of venture competitions have been created and operated by diverse funding institutes, schools, and governments (Park et al., 2020; Schwartz et al., 2013). A venture competition usually provides financial support, press coverage, or business coaching; additionally, it may provide networking opportunities. However, participating in an excessive number of venture competitions can consume a lot of an entrepreneur's time, which could be better used in other value-creating activities. As revenues and employee numbers grow

over time, the start-up enters new stages of development, which may involve accessing different resources from those required in the early stages. As new resources are required, different networks will be helpful for finding new resources; thus, entrepreneurs have to build new ties and selectively retain existing networks. As one method of building new ties, entrepreneurs can participate in venture competitions.

Here we clarify a few concepts to develop our hypotheses. The development stage of a start-up indicates how prominently the start-up is established in the entrepreneurial ecosystem. The maturity level of a start-up in its business development phase is judged in terms of key factors, including revenue, employee size, and the years of operation. Participating in a typical venture competition takes a significant amount of time and effort. Entrepreneurs often meet an organizing staff member to learn about the program and explain their business plans. They have to revise their business plans following the guidelines provided by the organizers. After they submit the application, the evaluation process can take several months. If their application is accepted for the next stage of evaluation, they are invited to an onsite event. On the day of the event, which can be just one day or include several days of training beforehand, entrepreneurs are expected to pitch their business plans; then, they receive an evaluation and get the chance to network with other entrepreneurs and advisors. Entrepreneurial networks are valid when two people know each other and feel comfortable contacting each other regarding entrepreneurial activities. When an entrepreneur is in the early stages of building a start-up, she/he is navigating toward a working business model, but is not ready yet to share the outcome with others. In most cases, the entrepreneur is still uncertain whether she/he can continue on with the project or even remain in the entrepreneurial community in the short term. With such an ambiguous situation, creating a new network becomes less attentive to the act of meeting more people (Engel et al., 2017; Kaandorp et al., 2020); thus, participating in venture competitions will not help expand the entrepreneur's network efficiently. However, as the development stage of the start-up advances, expansion of the entrepreneurial network becomes more attentive to the frequency of meeting new people; thus, increased participation in venture competitions will increase the size of his or her entrepreneurial network. Therefore, in accordance with this, we propose the following hypothesis:

H1: The development stage of a start-up has a moderating effect on the relationship between participating in venture competitions and expanding the entrepreneurial network.

Networks can be categorized as having either strong or weak ties by the frequency and closeness of the relationship between two people. Our understanding of the roles these two ties play has improved via the findings from many studies. Strong ties provide low-cost access to critical resources that are needed in the early phases of a start-up, and they facilitate actual venture formations (Coleman, 1988; Greve & Salaff, 2003). Weak ties play an important role in finding new knowledge and identifying new opportunities (Burt, 2004; Granovetter, 1973). Consequently, developing a balanced network, consisting of both strong and weak ties, will be more beneficial for handling the many different challenges associated with new venture development (Elfring & Hulsink, 2007; Gunawan et al., 2016; Jack, 2005; Newbert et al., 2013; Ren et al., 2016; Uzzi, 1997).

An increase in participating in venture competitions may lead to an increase in the frequency of meeting new people in the entrepreneurial community, which in turn leads to an increase in expanding networks with strong ties. We, therefore, test a hypothesis that an increase in participating in venture competitions leads to an increase in entrepreneurial networks with strong ties. We also propose a hypothesis and its null hypothesis:

H2: There is a significant correlation between participating in venture competitions and expanding strong network ties.

H₀₂: There is no significant correlation between participating in venture competitions and expanding strong network ties.

H₂ is invalid if the analysis fails to reject H₀₂—the null hypothesis. This would then mean that strong network ties cannot be expanded by attending more venture competitions. These results are useful as entrepreneurs are often encouraged to participate in entrepreneurial events and meet new people to expand their entrepreneurial networks.

3. Data and methods

We used an online survey to collect information on entrepreneurs' participation in venture competitions and network development among entrepreneurs in Switzerland. In November 2015, an email was sent to 433 entrepreneurs who were registered in major venture competitions in Switzerland. The companies are Swiss ventures, typically in an early stage but with a team and resources already in place. To increase the response rate and to encourage them to complete the questionnaire without dropping out, respondents were allowed to skip questions if they did not wish to reveal sensitive information, such as revenues. After one week, reminders were sent to the companies that had not yet filled in the online questionnaire.

A total of 193 responses were received, creating a 45% response rate. There is a risk of selection bias in the data, as many of the responding entrepreneurs know, or know of, one or more of the authors. The survey respondents may have been interested in maintaining a good relationship with the authors for future collaboration. The questions in the survey were divided into three categories: venture competition activities, company status (including revenue and employees), and network ties within the Swiss entrepreneurial ecosystem. The companies were mostly founded between 1999 and 2015 (one company was founded in 1980, while a few were not yet incorporated). The largest proportion of the companies work in life sciences, software, and engineering. At the time of the survey, 83% of the companies were still active. We deleted 19 significantly incomplete responses. Unlike face-to-face interviews, online surveys do not provide an opportunity to judge the care with which respondents fill in the data.

We used network size as a dependent variable to investigate the dynamic perspective of network development. In this study, network size is the number of people among Swiss entrepreneurs to which a respondent is connected. This is calculated by adding the number of inward ties (how many people know the entrepreneur) and the number of outward ties (how many people the entrepreneur knows) but subtracting the number of bi-directional ties (known to each other) to avoid double counting. In the survey, we provided the names of 299 entrepreneurs in Switzerland and asked them to indicate the strength of their relationship with each of the listed names on a five-point Likert scale. If the name was unknown to the respondent, the tie strength was considered zero. In addition, we also asked that respondents write the names of entrepreneurs based in Switzerland that were not included on the list, but whom they would consider going to for advice. The network size counted all the names provided from the two questions. By conducting the survey consistently, the counted network size is assumed to represent the respondent's entrepreneurial network size relative to other survey respondents. As the tie strength was provided, we also defined another dependent variable—the number of strong ties. Strong ties are defined as the number of people to whom a respondent is connected with a tie strength greater than three on the five-point scale.

As an independent variable, the number of venture competitions in which respondents participated was used. To help respondents answer accurately, we also provided a list of popular venture competitions. We asked respondents to choose the number of competitions from pre-defined options of 0 to 10 and 10+ (for cases over 10). Only seven companies indicated that they had participated in more than 10 competitions.

A new variable—the development stage of a start-up—was defined using other variables. Greve and Salaff (2003) examined network evolution based on three stages of organizational development—motivated, planning, and running. Lechner and Dowling (2003) employed five different phases, including a function of sales and the need for investments. Further, in their analysis, they categorized these phases into three stages. In our survey, we categorized company status via three phases of business development—seed, early development, expansion/mature—by considering revenue, employee size, and company age. If all of the following three conditions were met, the company was considered to be in the seed phase: revenue equal to or less than CHF 20,000, employee size equal to or less than five, and the company being legally founded equal to or less than three years previously. Around 25% of the companies were in this category. If at least one of the following conditions was met, the company was considered to be in the expansion/mature phase: revenue over CHF 100,000, employee size more than 10 or the company was more than 10 years old. Around 60% of the companies were in this category. All other cases were considered to be in the early development phase. Slightly different criteria were also tested but resulted in no significant change in the relationship in the regression analysis proving the robustness of the analysis.

In addition, we included several control variables that could also explain network size development. We considered that company age affects the subsequent development of the network. In other words, as the company ages, the number of people to which the entrepreneur is connected will increase naturally without any particular effort. In addition, peak revenue and peak number of employees were used to control the effect of the business performance of the company. The respondents were asked to select one of the data ranges corresponding to their status from 0 (pre-revenue), $\leq 20,000$, $\leq 50,000$, $\leq 100,000$, $\leq 250,000$, $\leq 500,000$, ≤ 1 million, ≤ 5 million, and > 5 million in Swiss francs (CHF). Twenty-nine respondents refused to disclose this information; thus, they were omitted from the revenue analysis. Similarly, regarding employee size, respondents were asked to choose from 0, 1, ≤ 5 , ≤ 10 , ≤ 20 , ≤ 30 , ≤ 50 , ≤ 100 , ≤ 300 , ≤ 500 , and > 500 . We also used the motivation of entrepreneurs for participating in venture competitions. Respondents were asked to choose their two most important motivations from the following: improve reputation, achieve financial reward, expand network, receive advice, learn specific skills, and increase pride/morale of the team. We included dummy variables for respondents who indicated expand network or financial reward as their motivation to examine whether they actually developed a larger network size.

4. Results

Table 1 provides descriptive statistics for our primary variables. The firms in our samples are mostly established but still small, with an average peak revenue of between CHF 100,000 and CHF 250,000 and an average number of employees between 5 and 10. The average firm is less than six years old and has participated in venture competitions 4.3 times. The size of their networks varies widely from 0 to 40 with an average of 8.5.

Table 2 shows the correlation matrix of our variables. The first column shows the correlation between our dependent variable, network size, and other variables. The number of strong ties is highly correlated (0.75), so we included only one of them to avoid a multicollinearity problem in the regression analysis. Revenue, employee size, and company age showed no significant correlations. On the other hand, the number of venture competitions in which respondents participated showed a significant positive correlation (0.44). As the start-up phase was defined as a conditional function of other variables, its correlation coefficients with the start-up phase and revenue (0.71), employee size (0.57), and company age (0.47) were all significant. Table 3 shows the variance inflation factor (VIF), confirming no multicollinearity problem in the regression analysis.

Table 1. Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pct(25)	Pct(75)	Max
Network size	174	8.52	8.00	0	3	11.8	40
Strong ties	135	5.35	4.33	1.00	2.00	7.00	24.00
Revenue peak	148	4.57	2.89	1.00	1.00	7.00	9.00
Employee size peak	147	4.10	1.70	1.00	3.00	5.00	9.00
Company age	145	5.81	5.52	0.00	1.00	8.00	35.00
Development stage	170	2.34	0.86	1.00	1.00	3.00	3.00
Number participation	174	4.28	3.07	0	1	6	11
Dummy motivation network	174	0.57	0.50	0	0	1	1
Dummy motivation finance	174	0.48	0.50	0	0	1	1

Table 2. Correlation table

	Network size	Strong ties	Revenue peak	Employee size peak	Company age	Development stage	Number participation	Dummy motivation network	Dummy motivation finance
Network size									
Strong ties	0.75***								
Revenue peak	0.05	0.01							
Employee size peak	0.14	0.09	0.65***						
Company age	0.06	0.03	0.57***	0.50***					
Development stage	0.13	0.10	0.71***	0.57***	0.47***				
Number participation	0.44***	0.25*	-0.04	0.13	-0.23*	0.01			
Dummy motivation network	-0.03	0.05	-0.13	0.00	0.06	-0.12	-0.09		
Dummy motivation finance	0.15	0.07	-0.01	-0.02	-0.12	0.07	0.26**	-0.21*	

Computed correlation used pearson-method with listwise-deletion.

Table 3. Variance inflation factor (VIF)

Development stage	Number participation	Revenue peak	Employee size peak	Company age	Dummy motivation network	Dummy motivation finance
2.14	1.22	2.24	1.73	1.61	1.09	1.18

Table 4. Linear regression models

	Dependent variable:			
	Network size		Strong ties	
	(1)	(2)	(3)	(4)
Development stage	0.68	-2.63	0.84	0.66
	(1.27)	(1.66)	(0.80)	(1.10)
Number participation	1.11***	-0.62	0.36**	0.27
	(0.29)	(0.70)	(0.16)	(0.58)
Revenue peak	0.03	0.04	-0.20	-0.19
	(0.43)	(0.43)	(0.25)	(0.25)
Employee size peak	-0.28	-0.31	0.04	0.04
	(0.62)	(0.62)	(0.41)	(0.41)
Company age	0.17	0.23	0.07	0.08
	(0.20)	(0.20)	(0.12)	(0.12)
Dummy motivation network	-0.05	-0.03	0.68	0.67
	(1.50)	(1.44)	(0.92)	(0.93)
Dummy motivation finance	0.17	0.21	0.18	0.18
	(1.40)	(1.39)	(0.82)	(0.83)
Stage: participation		0.68**		0.03
		(0.29)		(0.21)
Constant	2.73	10.85***	1.53	1.95
	(2.54)	(3.72)	(1.45)	(2.45)
Observations	118	118	99	99
R ²	0.17	0.20	0.09	0.09
Adjusted R ²	0.11	0.14	0.02	0.01
Residual Std. Error	7.59 (df = 110)	7.46 (df = 109)	4.23 (df = 91)	4.25 (df = 90)
F Statistic	3.15*** (df = 7; 110)	3.46*** (df = 8; 109)	1.24 (df = 7; 91)	1.08 (df = 8; 90)

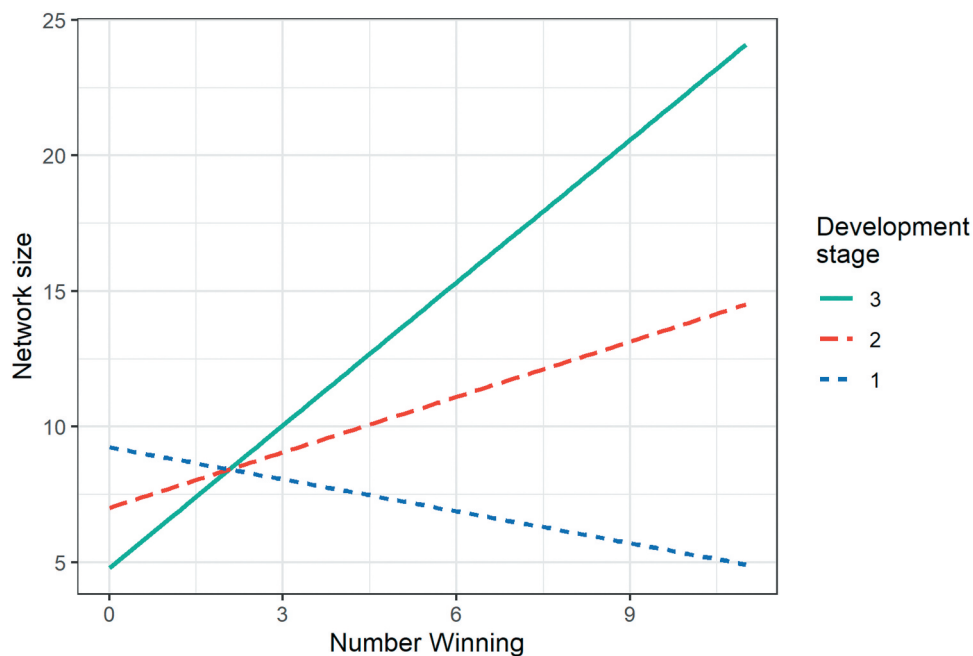
Note: *p < 0.1; **p < 0.05; ***p < 0.01

The two hypotheses that we studied relate to whether the size of the entrepreneurial network is expanded by participating in venture competitions along the development stages of a start-up. Thus, we have a relatively simple model for our empirical analyses:

$$Networks = \alpha + \beta_1 Participation + \beta_2 DevStage + \beta_3 Participation \times DevStage + \theta Controls + \varepsilon$$

We initially used a linear regression with the heteroskedasticity-robust standard errors. The results from our analysis of the impact of participating in venture competitions on entrepreneurial networks are shown in Table 4. In Model 1, we see a positive and significant coefficient on the number of venture competitions in which respondents participated; however, in Model 2, when the interaction term is included, the significance of the coefficients is changed. On the other hand, the interaction term between the number of venture competitions in which respondents participated and the development stage of a start-up shows a positive significant correlation. Hypothesis 1 predicted that the advanced development stage of a start-up strengthens the positive relationship between the number of venture competitions in which respondents participated and expanding the size of entrepreneurial networks. Model 2 supports the hypothesis. The coefficient of 0.68 for the interaction was significant at the 0.05 level. Figure 1 presents the interaction plot. The size of entrepreneurial networks is not correlated with the number of venture competitions in which respondents participated for early stage start-ups. However, in cases

Figure 1. Moderating effect of the development stage of a start-up on the relationship between the number of competitions in which respondents participated and the number of entrepreneurial networks.



where the development stage of a start-up is advanced, the size of entrepreneurial networks increases significantly due to participating in venture competitions.

Model 4 shows the results with the number of strong ties as a dependent variable. Neither the number of venture competitions in which respondents participated nor the interaction term with the development stage of the start-up shows a significant correlation. Therefore, we cannot reject the null hypothesis H_02 and, thus, the alternative hypothesis H_2 is invalid. In other words, networks with strong ties could not be expanded by participating in venture competitions regardless of the development stage of the start-up.

We performed a number of additional tests to understand how robust our primary results were. As mentioned above, the variable for the development stage of a start-up was based from three variables: revenues, employee size, and company age. When we tried different criteria to define the value of the variable, the results were qualitatively similar to those in Table 4. We also considered the number of start-ups that won venture competitions instead of the number that participated in venture competitions. While some of our primary relationships are slightly weaker when we replace variables, none of these relationships lose their significance nor change the overall tenor of our findings; the development stage of a start-up moderates the relationship between the number of venture competitions in which respondents participated and the size of the entrepreneurial networks. The network size with strong ties is not correlated with the number of venture competitions in which respondents participated.

5. Discussion

5.1. Theoretical contribution

This paper makes several contributions to the literature on entrepreneurial networks. Recent studies on entrepreneurial networks have suggested that entrepreneurs need different types of network ties depending on the development stage of the start-up (Laurell et al., 2017; Sullivan & Ford, 2014). On top of that, our analysis suggests that the methods an entrepreneur can employ to develop entrepreneurial networks effectively also vary depending on the development stage of the start-up. Entrepreneurs could develop entrepreneurial networks only when their start-ups are established at a certain level so that they are treated as a respectful part of the entrepreneurial ecosystem.

Organizers of venture competitions promote the networking opportunity to encourage entrepreneurs to participate in their events. In general, it is not deniable that an opportunity leads to outcomes. Thus, attending a venture competition could lead to the opportunity to meet other entrepreneurs, start-up experts, and investors. However, we emphasize that entrepreneurial networking requires a more altruistic approach (Engel et al., 2017). As is often said in the entrepreneurial community, it's about being interested and interesting. We asked our champion entrepreneurs with extended networks about what they were looking for in the people that they wanted to meet. We received various versions of "openness, pragmatism, ego in check, straight, honest, people I can trust, people who are open to new ideas, interesting and well-rounded, open to sharing, and authentic." It was surprising to us that the motivation to expand one's network as a reason for participating in competitions did not correlate with network size (though it was in the top three motivations cited by entrepreneurs). This may be because the stronger motivators (improve reputation and achieve financial reward) are overwhelmingly more important, while networking is actually a separate issue.

It is only when a start-up has reached to a certain level of establishment and, thus, is respected as a part of the entrepreneurial ecosystem, that its entrepreneurs can have meaningful relationships with others in the entrepreneurial ecosystem. Numerous people, with no concrete business plans, participate in venture competitions just to get a glimpse into the entrepreneurial community. However, not all are welcome until they prove themselves as a part of the entrepreneurial ecosystem in the cognitive evaluation of others in the community (Kaandorp et al., 2020). Thus, showing up and meeting new people at an entrepreneurial event would not necessarily lead to meaningful networks or strong ties.

5.2. Actionable implications

The more competitions an entrepreneur enters, the higher the probability their venture will receive the benefits the event provides. However, this observation does not take into account how much effort an entrepreneur has to put into applying for competitions and whether there is a good fit between the start-up and the competition in question. Most competitions have very specific criteria and goals, and the best advice we can offer to entrepreneurs is to apply to those competitions where there is a good fit with their companies. Applying to competitions takes time away from their technology specialization and their potential customers. Therefore, the advice is to target entering the competitions with the best fit.

Most, if not all, venture competitions have a certain amount of publicity surrounding them, whether that attracts entrepreneurs to them, helps the winning entrepreneurs, or provides value to the organizations sponsoring the competitions. Many have a media partner to help with publicity (for example, PME Magazine and VentureLab). In addition, whether at an awards ceremony or support workshop, the winners of competitions have opportunities to meet other entrepreneurs. All of this contributes to expanding an entrepreneur's network, even if that was not the main reason the entrepreneur entered the competition. If an entrepreneur believes, as we do, that being connected to other entrepreneurs is valuable, then business plan competitions are a valid means to this end.

However, there is a question around when and how many competitions one should apply for, even though expanding one's network of entrepreneurs is an important goal. Network size can be increased efficiently only when the start-up is established and perceived to be part of the entrepreneurial ecosystem. From an entrepreneurial networking perspective, is it worth doing it when an entrepreneur has nothing to prove about the business yet? Grant (2013) has shown that those who keep their own interests at heart but are equally open to helping others without any quid pro quo are more likely to succeed professionally and privately. Entrepreneurs need to have very clear objectives with regard to their networking, and we can assume that, when they consider applying to a venture competition, they bring the same reasoned focus to that task.

Unlike what organizers of venture competitions claim, participating in a venture competition may not lead to effectively expanding the entrepreneurial network for an early-stage start-up. The

expected outcomes from a venture competition are diverse—financial rewards, validating the business model, enhancing reputation, and network expansion. Organizers of venture competitions are advised to be more specific when they design their programs to help their targeted entrepreneurs appropriately. Entrepreneurs are advised to decide whether and which venture competitions in which they will participate by specifying the expected outcome clearly. This selective decision-making process would save them precious time and resources that they could use to run their businesses.

5.3. Limitations and research directions

The research setting is within the Swiss entrepreneurial ecosystem where foreign entrepreneurs prevail. Each region may have different characteristics. We can generalize about the prerequisites that entrepreneurs have to be respected and perceived to be part of the ecosystem to make meaningful ties. However, we should be careful not to claim that all venture competitions are not helpful in expanding networks. If a venture competition is carefully designed to provide a networking opportunity for an early-stage start-up, then the outcome could be different. Indeed, we encourage organizers of venture competitions to consider the difficulties of expanding entrepreneurial networks for those who have just initiated a start-up project.

As a future research direction, we propose to study how we could help entrepreneurs develop meaningful network ties considering the development stage of the start-up. Well-designed venture competitions can provide actual help to entrepreneurs so that the economy can benefit from the consequent job creation.

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Author details

Jung Eung Park^{1,2}

E-mail: jung.park@uzh.ch

ORCID ID: <http://orcid.org/0000-0002-7636-6952>

Jim Pulcrano²

Benoit Leleux²

¹ Department of Business Administration, University of Zurich, Zurich, Switzerland.

² IMD (International Institute for Management Development), Lausanne, Switzerland.

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