Barriers to Growth in Entrepreneurial Ecosystems

Ivan Zupic, Kingston Business School, Kingston Hill Campus, Kingston upon Thames KT2 7LB (E-mail: i.zupic@kingston.ac.uk)

Tomaž Čater, Faculty of Economics, University of Ljubljana

Aleš Pustovrh, Faculty of Economics, University of Ljubljana

Short Abstract

We conceptualize barriers to growth as firm-level factors that are necessary conditions for growth. There are five barriers to growth: finance, human capital, growth ambition, growth management knowledge, and product-market fit. The principal novelty is our conceptualization of barriers as necessary conditions for growth. The necessary conditions logic demands that all conditions must be met if the firm is to grow, which has important consequences for the selection of appropriate research methods for examining barriers to growth. Our conceptualization is based on 32 interviews with technology entrepreneurs, investors, and support-institution representatives, data from a 3-month observation of a startup batch in a venture accelerator, and the existing literature. We contextualize barriers in Spigel's (2015) model of the entrepreneurial ecosystem by specifying how the conditions for barriers on the entrepreneurial ecosystem level influence barriers on the firm level.

Keywords: firm growth, barriers to growth, entrepreneurial ecosystem, high-tech firms

Introduction

What is holding back the growth of high-tech companies? One of the most consistent findings of research on high-growth firms (Coad, Daunfeldt, Hölzl, Johansson, & Nightingale, 2014) is that high growth is not persistent. Firms typically – if they grow at all – grow in bursts and very rarely manage to continually grow over a longer period of time. One assumption about why this happens is that certain internal and external factors prevent the growth of new ventures. A long list of factors has been proposed as constraints on the growth process: finance (e.g. lack of access to credit), institutional factors (e.g. bureaucracy, complicated regulations, corruption), lack of various skills (e.g. management skills), or lack of resources. These factors are usually viewed as barriers to growth.

But what exactly are 'barriers to growth'? The concept has been criticized as vague. The barriers to growth literature is fragmented and theoretically underdeveloped (Doern, 2009). Existing studies are based on quantitative surveys with theoretically weakly founded questionnaires. Methodological problems abound: overreliance on cross-sectional studies, absence of standardized measures of barriers, and the risk of retrospective bias. Bottazzi, Secchi, and Tamagni (2014) warned against using simplistic approaches like linear regression due to the complex interactions among factors. There is also an insufficient distinction from similar concepts. For example, sometimes barriers are mentioned as just the "mirror image" of growth drivers (Davidsson, Achtenhagen, & Naldi, 2010). Finally, some barriers – finance is the clearest example – can be viewed as both internal and external.

We solve this conundrum by invoking the entrepreneurial ecosystem concept to contextualize barriers to growth in the wider environment. We conceptualize barriers to growth on the firm level and the conditions for barriers on the entrepreneurial ecosystem level. Our theoretical development is based on 32 interviews with company founders, investors, and representatives of support institutions, a 3-month observation of a batch of startups in a European venture accelerator, and the previous scientific literature. Specifically, we used grounded theory principles (Glaser & Strauss, 1967; Suddaby, 2006) and the development process concept outlined by Podsakoff, MacKenzie, and Podsakoff (2016). Our study thus answers calls for more qualitative approaches to the study of barriers to growth (Doern, 2009; Lee, 2014). We set specific boundaries for our theory. Our investigation is limited to privately-owned, high-tech companies in the ICT industry, a dynamic context characterized by high turbulence and fast-paced growth. We are only interested in the initial stages of organizational development: the start-up and growth phase of small- and medium-sized companies (SMEs), particularly startups. Our theory does not apply to old, mature, and large diversified companies.

We propose to make two contributions to the literature. The main contribution is a thorough conceptualization of the barriers to growth concept. We see barriers to growth as firm-level factors that prevent firms from growing. The configuration of five barriers (finance, human capital, growth ambitions, growth management knowledge, and product-market fit) is unique to every firm at any specific point in time. The principal novelty is our conceptualization of barriers as necessary conditions for growth. We thus make a clear distinction between the barriers (necessary conditions) and the drivers of growth (sufficient conditions). The necessary conditions logic demands that all necessary conditions must be fulfilled if the firm wants to grow, but they are not enough. The implications are both practical and methodological. Entrepreneurs and policymakers must view the problem holistically when trying to eliminate barriers. Eliminating just one barrier (e.g., finance) is insufficient, and all of them must be eliminated if the firm is to grow. Traditional regression-based methods are inappropriate for studying the barriers because they are based on the additivity of effects and sufficiency logic. Second, we extend Spigel's (2015) conceptualization of the entrepreneurial ecosystem with its influences on barriers to growth on the firm level. This means we not only conceptualize the barriers, but also specify the causal connections between ecosystem-level factors (i.e. conditions for barriers) and firm-level barriers.

Barriers to growth in entrepreneurial ecosystems

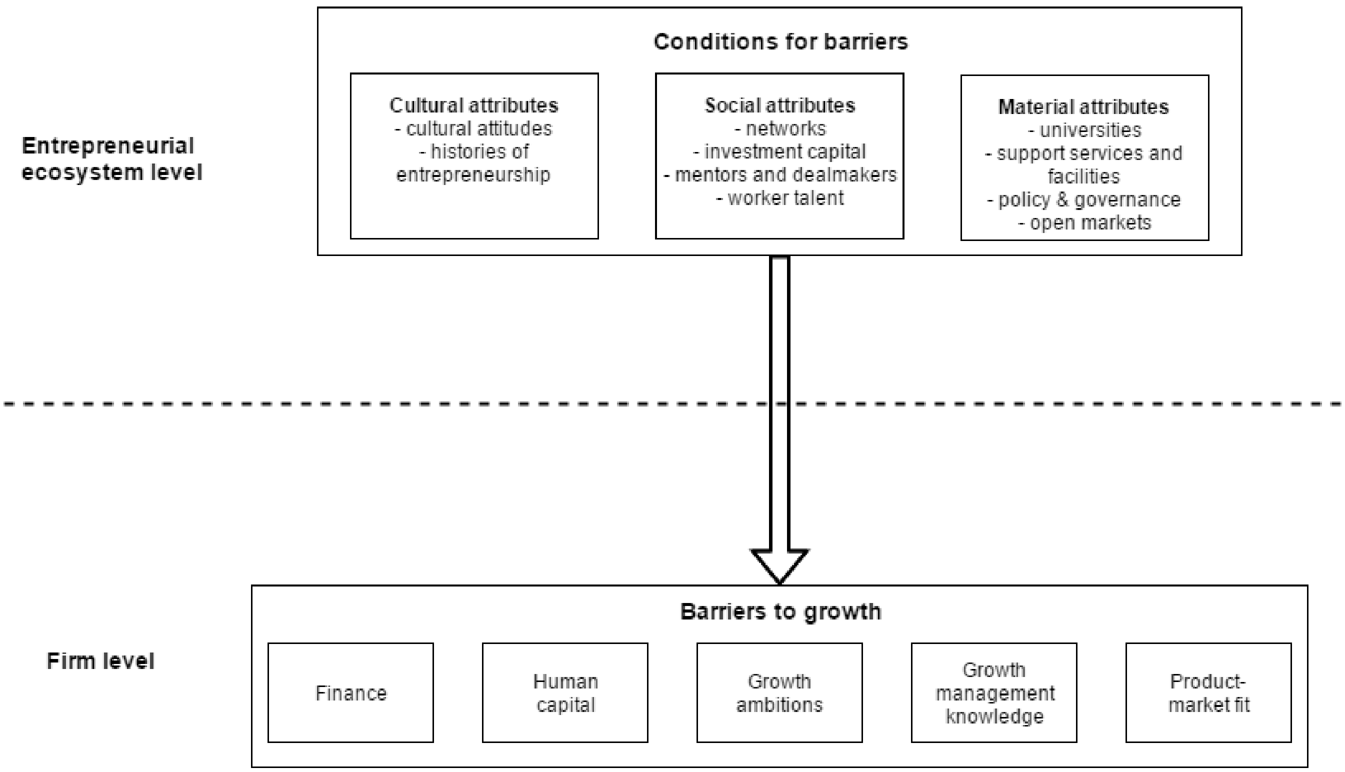
Barriers to growth are firm-level factors that are necessary conditions for persistent high growth. Each firm has its own unique configuration of barriers. They reflect a firm's specific circumstances at a particular point in time. Barriers do not exist in a vacuum. They are influenced by entrepreneurial ecosystem-level factors. Conditions for barriers to growth are attributes of the entrepreneurial ecosystem that influence the actual barriers for firms in that entrepreneurial ecosystem.

Five attributes form the configuration of barriers to growth on the firm level: finance, human capital, growth ambition, growth management knowledge, and product-market fit. First, the firm must possess sufficient financial resources to finance its growth. Second, it must possess human capital in both the entrepreneurial team and employees and be able to attract new talent. Third, its owners and managers must have a growth ambition, or at least be willing to grow the company if the process takes off. Fourth, there must be enough knowledge in the company about building high-growth firms in order to successfully navigate the growth process. Finally, the company's offerings of products or services must be compatible with market demand; in other words, the company has achieved a product-market fit. We primarily aim to explain the growth of small- and medium-sized companies with a limited portfolio of products.

All five attributes are necessary conditions for sustainable growth. Necessary conditions (Dul, 2016) are determinants that allow a certain outcome to exist, but are not sufficient to attain that outcome. Without the necessary condition, the outcome will not exist. Failure is guaranteed and cannot be compensated with by other determinants of the outcome.

The configuration of attributes is idiosyncratic to every firm. The company must fulfill all five conditions for persistent growth to become a possibility. However, in accordance with the necessary conditions framework, this might not be enough to actually grow. The five attributes of barriers are inter-related, but not substitutable. For instance, a well-capitalized company might find it easier to attract talented people, but financing itself cannot compensate for having an appropriate work force and leadership. Our conceptualization of the conditions for barriers (entrepreneurial ecosystem level) and barriers to growth (firm level) is visualized in Figure 1.

Figure 1. Barriers to growth in entrepreneurial ecosystems



Our focus is on explaining persistent high growth over a longer period of time. We define persistent high growth as annual growth of 20 or more percent for a period of 4 or more years. There are two main ways to achieve temporary growth: finance push and market pull. For example, a company might develop a product with great demand on the market, in other words, achieve a product-market fit. This may trigger the company to start growing (market pull). However, without eliminating the other barriers, this growth will be one-off. For persistent growth, the company needs to acquire sources of finance (this can be from outside sources like venture capital or from its free cash flows), develop or hire appropriate talent, and its leadership must hold the ambition for further growth and be able to successfully navigate the growth process. Eliminating a powerful barrier like finance or achieving a product-market fit can put the company on a temporary growth trajectory. This buys time so the leadership can eliminate other barriers. But if other barriers are not dealt with, the growth will be eventually brought to a halt.

Finance

By finance, we mean the ability of a firm to finance its growth. High-tech startups need growth capital for several reasons. The first is to finance the product development costs. Especially for companies that initially establish a user base and figure out the monetization mechanism later, the costs of development and maintaining the service for the growing user base can be very high. The Internet of things startups need finance for the production of hardware and working capital. Finance is also required for marketing expenses to acquire users. It can be obtained from different sources: from investors as equity capital, borrowed from a bank, or internally from free cash flows.

The main ecosystem-level factors that influence companies' ability to obtain financial resources are cultural attitudes, networks, investment capital, and policy and governance. Cultural attitudes determine what amount of risk and debt is culturally appropriate for entrepreneurs to take. Social connections help entrepreneurs obtain access to the right people (investors, bankers) who are the decision-makers for dispensing finance. Abundant investment capital in the region makes it easier for all startups to find equity capital. Policy and governance initiatives (e.g. guarantees, subsidies) can help acquire finance for those new ventures that would otherwise be disadvantaged due to poor credit ratings and unavailable collateral.

Human capital

There are three dimensions of the human capital barrier: the human capital of the founder team, the human capital of the employees, and the firm's ability to attract and retain worker talent. Serial entrepreneurs with a track record of success bring knowledge and credibility to the new business (Mason & Brown, 2013). They are able to attract external financial investment and customers. Founding a team with deep domain experience will make it easier and faster to develop products and services the market wants. One mechanism through which human capital acts as a barrier to growth is absorptive capacity (Cohen & Levinthal, 1990). The lack of human capital in founders and employees prevents the firm from acquiring and interpreting the knowledge needed for growth. Finally, if the firm wants to grow, it must be able to attract and retain talented workers.

The main ecosystem-level factors that influence the human capital barrier are: cultural attitudes, histories of entrepreneurship, networks, worker talent, and universities. Cultural attitudes are the basis for whether talented experienced people are prepared to establish or work for small companies. Histories of entrepreneurship change these attitudes with positive role models. Expansive social networks help entrepreneurs identify suitable employees and appropriate co-founders. Abundant worker talent is necessary to support growing firms' increasing needs for workers, while universities are one of the main factors in creating human capital.

Growth ambition

Not all entrepreneurs want to grow their firms. A bigger size is perceived as more hassle. With growth, there is an increasing burden of satisfying various regulations. Having more employees also increases responsibility and requires regular cash flows. Entrepreneurs become more like managers with less time to do what they want (Parry, 2010). Growth ambition is the main mediator through which the barriers perceived by the entrepreneur limit growth and can thus become actual barriers (Doern, 2011). This means that entrepreneurs' ambition to grow their firms would be an important barrier to growth.

The main ecosystem-level factors that influence the growth ambition barrier are: cultural attitudes, histories of entrepreneurship, investment capital, mentors and dealmakers, and open markets. Again, cultural attitudes influence how risky the entrepreneur's actions will be and this will in turn influence the growth ambition. Examples of successful entrepreneurs in the region and knowledgeable mentors can help overcome the adversity to risk inherent in growth. Investment capital encourages entrepreneurs to have greater ambitions than they would normally have. Open markets can help fuel the growth ambition with abundant opportunities for expansion.

Growth management knowledge

Fast growth can exceed the managerial capacity, compromise the organizational culture or put strains on the company's finances. Entrepreneurial venture at a certain point needs more order and a management process. This can exceed the capacity of the founders to successfully manage the venture and they then need to be replaced with professional management. When the company employs a significant proportion of its workforce every year, it is difficult to maintain the organizational culture and keep employees informed about the company's values and strategic priorities. Fast growth can deplete a company's finances and accelerate its need for more investment. Its leadership needs to know how to navigate this process.

The main ecosystem-level factors that influence the growth management knowledge barrier are: networks, investment capital, mentors and dealmakers, worker talent, and support services and facilities. Entrepreneurs embedded in expansive networks can more easily identify people with growth management knowledge if that is insufficiently present in the company. Investment capital investments often come with experience in handling the growth process. Mentors can also advise the founders when growth problems arise. If there is an abundance of people who have first-hand knowledge of the growth process, ventures can hire the appropriate worker talent. Finally, support services and facilities can help growing companies.

Product-market fit

The main precondition for growth is a product-market fit. This means "being in a good market with a product that can satisfy that market" (Andreesen, 2007). A good market can act as a pull and ignite the growth trajectory of a startup if it delivers on an unsatisfied need. The main ecosystem-level factors that influence the product-market fit barrier are: networks, mentors and dealmakers, and open markets. Networks and the proximity of customers mean that entrepreneurs can identify customer needs more easily. Mentors who have gone through the process of finding a product-market fit can guide them with their experience and knowledge.

Implications for research, practice and policy

Will removing the barriers to growth lead to a bonanza in high-growth companies? It is not so simple. We conceptualized five barriers (finance, human capital, growth ambition, growth management knowledge, and product-market fit) as necessary conditions for growth. Entrepreneurs have to eliminate all of them just to have the possibility of persistent growth. Working simultaneously on all barriers is extremely difficult for resource-limited companies like high-tech startups. What is more, eliminating the barriers is just a necessary, not a sufficient condition. For growth to materialize, companies also depend on other factors like a competitive environment, their success in reaching customers and, yes, luck. However, we claim that, without solving the five barriers, high-tech companies will be unable to grow persistently.

With our conceptualization of the barriers we were able to provide solutions to several weak points of the barriers research (Doern, 2009). First, our conceptualization is thorough and holistic. It embeds the barriers in the entrepreneurial ecosystem concept. We developed the conceptualization according to the principles of concept development (Podsakoff et al., 2016). We are thus able to mitigate the stated problem that the barriers to growth concept is “undertheorized” (Doern, 2009). This definition of barriers to growth is the first step towards better operationalization of the concept. Our theorizing also takes into account the difference between actual and perceived barriers. The perceived barriers are not barriers per se, but antecedents that influence the growth ambitions of entrepreneurs (Doern & Goss, 2013).

We have conceptualized barriers as necessary, but not sufficient conditions for growth (Dul, 2016). One consequence of this distinction is methodological. Traditional regression-based methods with their rule of linear additivity may be appropriate for empirically examining drivers of growth, but inadequate for assessing barriers to growth. The principle reason is the requirements of the necessary conditions logic. These state that one of the necessary conditions cannot substitute others and that all conditions must be present for the outcome to occur. Barriers to growth thus have to be empirically examined with NCA or similar methods like QCA that do not violate the logic of necessary conditions.

Our framework provides a long-term lens for entrepreneurs that can help their thinking about the growth and development of their company. Seasoned entrepreneurs will be able to relate to the five barriers and can use the framework to frame their experience when advising younger colleagues. Some barriers can change fairly quickly, others very slowly. The financial position of a company can change overnight if a sizable investment capital is received. In contrast, decisions about the founding team are the most difficult to correct later. Entrepreneurs must aim to eliminate all barriers to growth if they wish to grow persistently. Temporary growth triggered by finance push or market pull provides them with time to systematically deal with the barriers.

Policy measures should apply a holistic strategy to lowering barriers to growth. Because every barrier is a necessary condition for growth, it is not enough to focus on just one barrier. For instance, policymakers have so far disproportionally focused on finance, and should spend additional resources and attention on eliminating other barriers.

References

Bottazzi, G., Secchi, A., & Tamagni, F. (2014). Financial constraints and firm dynamics. *Small Business Economics*, *42*(1), 99–116. https://doi.org/10.1007/s11187-012-9465-5

Coad, A., Daunfeldt, S.-O., Hölzl, W., Johansson, D., & Nightingale, P. (2014). High-growth firms: introduction to the special section. *Industrial and Corporate Change* , *23*(1), 91–112. https://doi.org/10.1093/icc/dtt052

Cohen, S. (2013). What do accelerators do? Insights from incubators and angels. *Innovations*, *8*(3–4), 19–25.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, *35*(1), 128–152.

Corbin, J., & Strauss, A. (2007). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE Publications.

Davidsson, P., Achtenhagen, L., & Naldi, L. (2010). Small Firm Growth. *Foundations and Trends in Entrepreneurship*, *6*(2), 98–166. https://doi.org/10.1561/0300000029

Delmar, F., & Wiklund, J. (2008). The Effect of Small Business Managers’ Growth Motivation on Firm Growth: A Longitudinal Study. *Entrepreneurship Theory and Practice*, *32*(3), 437–457. https://doi.org/10.1111/j.1540-6520.2008.00235.x

Doern, R. (2009). Investigating Barriers to SME Growth and Development in Transition Environments: A Critique and Suggestions for Developing the Methodology . *International Small Business Journal* , *27*(3), 275–305. https://doi.org/10.1177/0266242609102275

Doern, R. (2011). Understanding how perceived barriers influence growth intentions and behaviours: Accounts from small business owner-managers in Russia. *International Journal of Entrepreneurial Behavior & Research*, *17*(5), 488–514. https://doi.org/10.1108/13552551111158826

Doern, R., & Goss, D. (2013). From barriers to barring: Why emotion matters for entrepreneurial development. *International Small Business Journal*, *31*(5), 496–519. https://doi.org/10.1177/0266242611425555

Dul, J. (2015). *R Package NCA*. Retrieved from http://cran.r-project.org/web/packages/NCA/index.html

Dul, J. (2016). Necessary Condition Analysis (NCA): Logic and Methodology of “Necessary but Not Sufficient” Causality . *Organizational Research Methods* , *19*(1), 10–52. https://doi.org/10.1177/1094428115584005

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, *14*(4), 532–550.

Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review*, *32*(4), 1180–1198.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology . *Organizational Research Methods* , *16*(1), 15–31. https://doi.org/10.1177/1094428112452151

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Hawthorne: Aldine Publishiong Company.

Graebner, M. E., Martin, J. A., & Roundy, P. T. (2012). Qualitative data: Cooking without a recipe. *Strategic Organization* , *10*(3), 276–284. https://doi.org/10.1177/1476127012452821

Lee, N. (2014). What holds back high-growth firms? Evidence from UK SMEs. *Small Business Economics*, *43*(1), 183–195. https://doi.org/10.1007/s11187-013-9525-5

Mason, C., & Brown, R. (2013). Creating good public policy to support high-growth firms. *Small Business Economics*, *40*(2), 211–225. https://doi.org/10.1007/s11187-011-9369-9

O'Reilly, K., Paper, D., & Marx, S. (2012). Demystifying Grounded Theory for Business Research. *Organizational Research Methods*, *15*(2), 247–262. https://doi.org/10.1177/1094428111434559

Parry, S. (2010). Smalltalk: Rhetoric of control as a barrier to growth in artisan micro-firms. *International Small Business Journal* , *28*(4), 378–397. https://doi.org/10.1177/0266242610363528

Pauwels, C., Clarysse, B., Wright, M., & Van Hove, J. (2016). Understanding a new generation incubation model: The accelerator. *Technovation*, *50–51*, 13–24. https://doi.org/http://dx.doi.org/10.1016/j.technovation.2015.09.003

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2016). Recommendations for Creating Better Concept Definitions in the Organizational, Behavioral, and Social Sciences. *Organizational Research Methods* , *19*(2), 159–203. https://doi.org/10.1177/1094428115624965

Pratt, M. G. (2009). From the Editors: For the Lack of a Boilerplate: Tips on Writing Up (and Reviewing) Qualitative Research. *Academy of Management Journal* , *52*(5), 856–862. https://doi.org/10.5465/AMJ.2009.44632557

Schneider, C. Q., & Wagemann, C. (2012). *Set-Theoretic Methods for the Social Sciences*. Cambridge: Cambridge University Press.

Shepherd, D. A., & Sutcliffe, K. M. (2011). Inductive Top-Down Theorizing: A Source of New Theories of Organization. *Academy of Management Review* , *36*(2), 361–380. https://doi.org/10.5465/amr.2009.0157

Spigel, B. (2015). The Relational Organization of Entrepreneurial Ecosystems. *Entrepreneurship Theory and Practice*, n/a-n/a. https://doi.org/10.1111/etap.12167

Suddaby, R. (2006). From the Editors: What Grounded Theory is Not. *Academy of Management Journal* , *49*(4), 633–642. https://doi.org/10.5465/AMJ.2006.22083020