



## How Accelerators Promote Regional Entrepreneurship

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This study focuses on how accelerator programs affect regional economic outcomes compared to traditional angel investing. Analyzing a new hand-collected dataset, accelerated and angel-backed startups are evaluated through key economic outcomes such as follow-on venture capital funding, startup acquisition, and job growth.

Policymakers often focus on building and sustaining a robust regional economy. New businesses are crucial to a regional economy and as new businesses start up and grow, they create jobs and establish industry clusters. Accelerator programs are an increasingly popular policy tool to support the development of new innovative businesses. Regional economic impact has not been a focus of previous research on accelerators.

There can be tension between accelerators trying to cultivate local talent as opposed to bringing in more distant startups to their programs that might be more promising. Outcome differences between startups that come from the same region as the accelerator program and startups located farther away could exist. If these differences are meaningful it could affect the policy relevance of different accelerator models and illustrate the role of accelerators in regional economic development.

### Key Findings

The author of the new study, Sheryl Winston Smith, collected and analyzed data on startups that participated in accelerators and startups that were funded through angel groups. Her key findings include:

- Successful accelerators take time to establish themselves, requiring patience of those expecting positive local economic benefits. This is particularly true when

considering the importance of successful programs' ties to the existing ecosystem of investors, acquirers, and partners.

- Accelerators invest in startups that come from a greater distance than those receiving angel group investments. The average distance for the accelerator sample is 738.5 miles, compared to 478.3 miles average distance between startups and angel groups.

- For accelerators, local startups receive more financing than distant startups, and for angels the location of the startup does not affect financing. All else equal, a startup co-located in the same region as an accelerator has a 24 percentage point greater likelihood of getting follow-on venture capital funding than if the startup is located outside of that region. On the other hand, the average marginal effect of being co-located is not statistically significant for startups receiving angel backing.

- Co-location has a greater impact on the likelihood of acquisition for startups in accelerator programs than for a similar startup in an angel group. Startups in a co-located accelerator are 9 percentage points more likely to be acquired than a similar startup in an angel group. However acquisition for startups in different regions than the accelerator or angel is statistically insignificant when comparing accelerators to angels.

- Startups in accelerators and startups in angel groups both hire more employees when they are in the same region as the accelerator or angel group, respectively. For startups in accelerators, being in the same region translates into an average of 8.5 more employees than if it was in a different region, while startups with angel group backing hire an average of 9.5 more employees relative to being in a different region. On average,

startups co-located with accelerators have 34 percent more employees relative to those in the angel group while the average marginal effect for startups in a different region is 62 percent more employees than a similar startup in an angel group in a distant region.

- For startups, there is no place like home. Overall, the shorter the geographic distance from a startup to its financing source, whether an accelerator or angel, the better its economic outcome. And the impact is amplified for startups in accelerators relative to those in angel groups.

## Policy Implications

The author of the new study argues that her findings have several policy implications. These include:

- The potential to attract startups from a larger geographic range is both an advantage and disadvantage for accelerators. Policymakers may want to consider differential benefits of accelerators relative to angel groups for startups within their region.
- Policymakers may not want to overlook the importance of growing the larger entrepreneurial ecosystem. This includes investors and established companies to partner with and potentially acquire startups in the region, as well as suppliers and talent pools.
- Prototypical accelerators—i.e., the longest running and most successful programs in the private sector—provide a blueprint for other accelerators, particularly more nascent government-sponsored accelerators. Understanding the impact of established private sector accelerator programs on regional measures of entrepreneurship provides actionable models and insights that can be adapted across a wide array of programs, including government-sponsored and nonprofit accelerators.

## Data and Methodology

The analysis addresses two questions: 1) the relative likelihood of achieving milestones; and, 2) the attainment of growth metrics such as the amount of follow-on funding raised and the number of employees hired. To address these distinct questions, econometric analysis involves discrete choice models to estimate likelihood of reaching acquisition and venture capital milestones, feasible generalized least squares (FGLS) to estimate the amount of follow-on funding raised, and Poisson models to estimate the number of new hires.

For data, several sources were triangulated to trace the trajectory of startups from inception. These data include LinkedIn, Crunchbase, and CB Insights, as well as extensive searching of technology blogs and other press articles. The sample of accelerator-backed startups consists of the

full census of startups going through 25 cohorts of two established accelerator programs, Techstars and YCombinator, over the period 2005-2011. Outcomes for all the startups are tracked through the end of 2016. The final sample included 736 startups.

The author constructs a comparable sample of startups—i.e., a baseline control group relative to the accelerator sample—that are backed instead by professional angel groups. The angel groups are chosen based on similar levels of selectivity as the accelerators and are matched on geographic location and industries in which they invest.

There is no comprehensive ranking of angel groups, thus they were ranked by the number of deals each made over time using ThomsonOne's VentureXpert database. This list is broadly consistent with angel groups featured in the literature as "top" groups. This data is augmented by searching angel group websites. As with the accelerator sample, the data is further supplemented with Crunchbase, LinkedIn, CB Insights, and technology blogs and press articles. The final angel group sample includes 331 angel-backed startups during this period.

The findings and conclusions of the author of the new study often rely on the assumption that differences in outcomes were caused by observed differences in circumstances. Attributes like location, industry, participation in an accelerator, and funding through an angel group were observed for each startup. In producing estimates of the effects of participating in an accelerator rather than receiving funding through an angel group, the statistical analysis accounts for differences like location and industry. However, not all of the relevant attributes of startups are easily observed. If groups differed in important and unobserved ways, then differences in outcomes may have been driven by those unobserved differences.

This report was peer reviewed consistent with Advocacy's data quality guidelines. More information on this process can be obtained by contacting the director of economic research at [advocacy@sba.gov](mailto:advocacy@sba.gov) or (202) 205-6533.

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