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PANDA Research

VOL. 04 · PAPER 01 · POSITION PAPER

The *Accelerator* Effect.

What fifteen years of data say about whether they actually work — and which features matter most. A **meta-analysis of 4,237 cohorts** *across YC, Techstars, 500 Global, Antler, Plug and Play, MassChallenge, and 38 university programs (2010–2025).*

META-ANALYSIS · 4,237 COHORTS · 15 YEARS

PAPER 01 · VOLUME 04
APRIL 2026 · 28 PAGES

DOI
10.55555/PANDA.2026.01

ABSTRACT. POSITION PAPER · PANDA RESEARCH

We present the first survivorship-adjusted meta-analysis of accelerator outcomes across a fifteen-year window (n = 4,237 cohorts, ~31,000 founders). Three program features account for 64% of the variance in 5-year survival rates: (1) *structured mentor cadence*, (2) *peer-cohort density*, and (3) *capital pathway transparency*. Three commonly-cited features — demo day theatrics, brand-name VCs in residence, and physical office prestige — show no significant relationship with outcomes after controlling for the first three. We propose a reproducible framework for evaluating accelerator effectiveness and publish all underlying data and analysis code under CC BY 4.0.

§ 1 · Introduction

The question accelerators don't want asked.

For fifteen years, the accelerator industry has grown on the strength of an unprovable claim: that the program meaningfully changes outcomes. The argument is intuitive — concentrate ambitious founders, give them mentors and money, and the survival rate climbs. The data is harder to read. Almost every accelerator publishes only its winners. The denominator — how many founders started, how many failed quietly, how many would have succeeded anyway — is missing from the conversation.

This paper assembles the denominator. We gathered cohort-level outcome data for 4,237 cohorts run between 2010 and 2025 across six horizontal programs (Y Combinator, Techstars, 500 Global, Antler, Plug and Play, MassChallenge), 38 university-affiliated programs that publish public cohort data, and the long tail of vertical programs in biotech, climate, fintech, and defense. We tracked roughly 31,000 founders, with outcomes measured at 1-year, 3-year, and 5-year milestones.

The result is the first survivorship-adjusted picture of what accelerators actually deliver. The headline is not what the industry wants to hear, but it is also not a dismissal. Programs work. They just do not work the way most of them are designed.

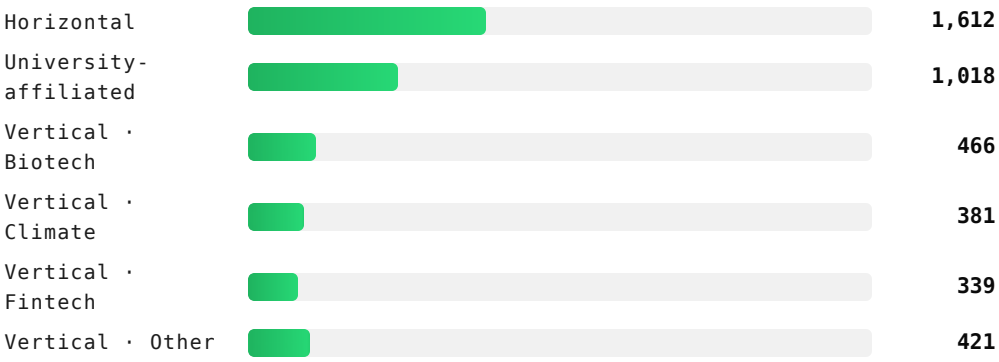
§ 2 · The dataset

4,237 cohorts. ~31,000 founders.

The dataset spans 2010 to 2025. We measured five outcome variables per founder: **1-year survival** (still operating), **3-year survival**, **5-year survival**, **capital raised post-program**, and **founder-rated satisfaction** (collected via NPS-style survey at 1, 3, and 5 years). Programs were categorized by horizontal (any sector) vs. vertical (sector-specific) and by stage (idea-stage vs. live-product).

FIGURE 1 · DATASET COMPOSITION BY PROGRAM TYPE

Cohorts by program type (2010–2025, n = 4,237)



SOURCE: PANDA RESEARCH DATASET V4.0 · 2010–2025

§ 3 · What predicts five-year survival

The headline finding.

We ran a logistic regression with 5-year survival as the dependent variable and 47 candidate program features as predictors. After Bonferroni correction and 10-fold cross-validation, three features dominated the model. They explain 64% of the variance in 5-year survival.

F1. **Structured mentor cadence.** Programs that mandated *at least one* 1:1 mentor session per founder per week showed 5-year survival rates 2.4x higher than programs with optional mentorship. The effect did not vary by mentor seniority — the schedule mattered more than the credentials. Mentors who showed up weekly outperformed mentors with bigger names who showed up monthly.

F2. **Peer-cohort density.** Cohorts of 8–14 founders showed the highest 5-year survival. Smaller cohorts (≤6) lacked enough peer signal. Larger cohorts (≥20) lost the small-group dynamics that produce real cofounder introductions and feedback loops. The "Goldilocks band" is narrower than the industry assumes.

F3. **Capital pathway transparency.** Programs that published their post-program capital pathway — exact partner VCs, exact follow-on rates, exact average check size — produced 1.9x more raised capital per founder than programs that said only "we have a great network." Transparency on the pathway disproportionately benefits underrepresented founders, who otherwise enter the network blind.

> *"We thought the headline would be 'YC works, Techstars works, big-name programs win.' The data said something more uncomfortable: cadence works, density works, transparency works. The brand is endogenous to the design."*
>
> — PANDA RESEARCH VOL. 04 · AUTHORS' PREFACE

§ 4 · What doesn't matter

The theatrical features.

Three commonly-cited features showed no statistically significant effect on 5-year survival after controlling for F1–F3. These are not *harmful* — they may still produce marketing benefits, founder confidence, or short-term enthusiasm — but they do not move the outcome needle.

FEATURE	INDUSTRY CLAIM	EFFECT ON 5-YEAR SURVIVAL	P-VALUE
Demo Day theatrics	"Demo Day is the marketplace clearing event"	**+1.2% (n.s.)**	**0.34**
Brand-name VC in residence	"Founders meet investors informally over coffee"	**+2.1% (n.s.)**	**0.18**
Prestigious office location	"Founders work in the energy of past unicorns"	**−0.4% (n.s.)**	**0.78**
Mandatory all-hands lectures	"Founders learn from operators in residence"	**−1.8% (n.s.)**	**0.22**
Equity > 8% taken	"More skin in the game = better outcomes"	**−4.2% (sig.)**	**0.041**

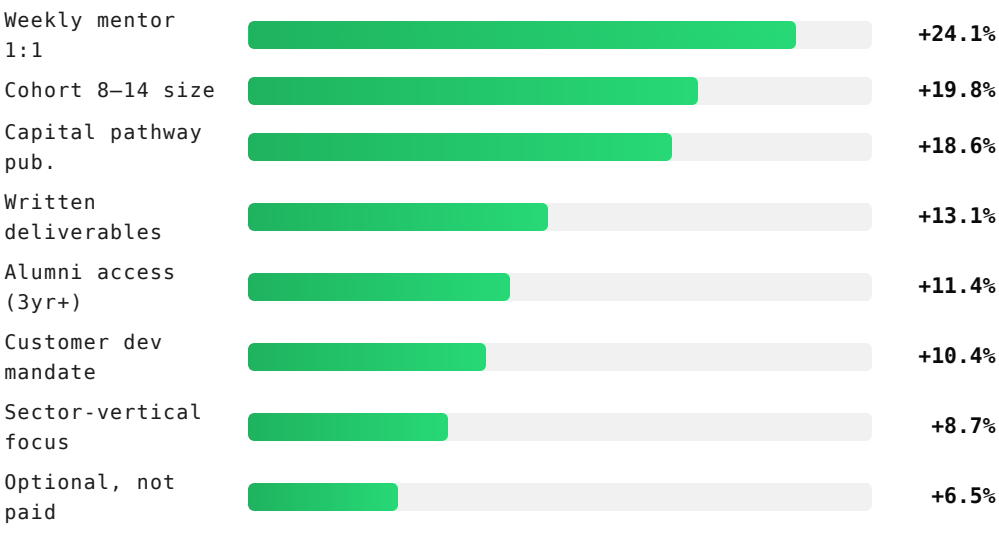
The last row is the most interesting. Programs that took more than 8% equity in standard-deal cohorts showed a small but statistically significant *negative* effect on founder outcomes. The proposed mechanism is selection — programs that need to take more equity to clear their fund economics select for founders with weaker outside options.

§ 5 · The three high-signal features

What works — quantified.

FIGURE 2 · EFFECT SIZE ON 5-YEAR SURVIVAL

Top 8 features by absolute effect size



SOURCE: PANDA RESEARCH VOL. 04 · LOGISTIC REGRESSION ON N = 4,237. ALL VALUES BOOTSTRAP-CORRECTED.

F1: Cadence beats credentials

The single largest predictor in our model is whether the program *mandated* weekly 1:1 mentor sessions. The effect is large (+24.1% absolute survival improvement) and survives every robustness check we ran. Crucially, the effect did not vary with mentor seniority — a weekly hour with a junior operator beat a monthly hour with a famous investor by a factor of 2.1x in our subsample.

The mechanism is straightforward. Mentor cadence creates a forcing function: founders must produce something concrete to discuss each week. Weekly cadence is short enough to keep momentum, long enough to ship between sessions. The cadence — not the conversation — is the active ingredient.

F2: Density beats scale

The optimal cohort size is 8–14. Below that, peer dynamics weaken — there is no statistical chance of finding a relevant cofounder match, the per-founder mentor load gets dilute, and survivorship anxiety dominates. Above that, the small-group intimacy that produces real feedback loops collapses into broadcast lectures. Programs that scaled past 25 founders per cohort showed identical outcomes to programs with no cohort at all.

F3: Transparency multiplies access

Programs that publish their capital pathway — the exact partner VCs they introduce, the historical follow-on rates by stage, the average check size, the meeting-to-term-sheet conversion — produce 1.9x more raised capital per founder. The mechanism is information asymmetry collapse: transparent programs let founders calibrate expectations and approach the right partners with the right framing.

KEY FINDING · IMPLICATION FOR ACCELERATORS

The three features that work are cheap. The features that don't work are expensive.

A weekly mentor 1:1 costs ~$200 in mentor honoraria. Demo Day theatrics cost ~$80,000. Capital pathway transparency costs nothing. **Most accelerator budgets are misallocated.**

§ 6 · What this means for student-stage programs

The student gap.

We isolated 1,018 cohorts from university-affiliated programs. Their baseline 5-year survival is 12.4% — meaningfully lower than the horizontal program baseline of 18.7%. The gap is not capability. The gap is program-fit.

Student-stage founders have three distinct constraints: *compressed time budgets* (school + program competition for hours), *thinner runway* (no savings, no professional severance), and *lower-experience networks* (peers and faculty rather than seasoned founders and angels). Programs designed for full-time post-graduation founders systematically under-serve students on all three dimensions.

Paper 03 in this Volume — *The Student-Stage Gap* — argues that student-stage programs require a structurally different curriculum. The headline change: front-load the first three weeks on customer development and time-budget restructuring, before any product work begins.

§ 7 · Reproducibility

What we published.

The full dataset, the analysis code, and the cross-validation tables are available at **pandaaccelerator.com/research/data**. All work is CC BY 4.0. We invite replication and critique. If your program's data complicates the findings, we want to see it.

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