
New Venture Accelerators – An Exploratory Study into how Accelerators Grow Human Capital

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Accelerators have become a common part of the landscape in many parts of the world, including New Zealand Aotearoa. The value traditionally ascribed to these programmes has largely been focused on the economic or financial capital gains of new ventures or ‘start-ups’, using share value or revenue growth as common measurements. This is despite the fact that it may be impossible to disaggregate the many independent variables that drive financial success of new ventures. A team of researchers across academic and government is challenging this limited definition, creating complementary measures that widen the study of accelerators to include more than just financial measures. Our focus is on the human capital, or skills gains, that individuals experience when they participate in an accelerator programme.

The past decade has seen a tremendous rise in efforts to develop entrepreneurship. Start-up communities, incubators, accelerators, boot camps, co-working spaces and many other entrepreneurial development programmes have all proliferated the world over. Many of the above entrepreneurship efforts have grown in the past decade, but accelerators have grown the most of all. Pitchbook, a database for public and private equity markets, lists almost 900 accelerators in operation worldwide as at July 2015 (Widjaja & Tom, 2015). In the UK, the majority of current accelerators have been established since 2011 (Bone, Allen, & Haley, 2017), and in the USA the number of accelerator programmes has increased tenfold over the past 10 years (Clifford, 2016).

The accelerator has traditionally been a tool for getting new ventures (start-ups) off the ground. These intensive programmes usually operate over three to six months, bringing teams together with mentorship and educational components before a 'demo day' event where they seek funding for further growth (Cohen, 2013; Cohen & Hochberg, 2014). Since the traditional focus of an accelerator has been on creating a new venture, often around an innovative product or service, traditional units of measurement (metrics) in this context have been financial. These metrics are most frequently the level of capital investment into a new venture (studies range from three to ten-year time period of study; some measure post-accelerator funding only while some use a cumulative funding measure) (Bliemel et al., 2016; Bokhari, Chegut, Frenchman, & Tausendschoen, 2018). The unit of analysis in these types of studies is either the business venture, or the accelerator as a programme (total rates of capital investment, total venture growth from participants). Research to date tends to have absent or disparate metrics, which are not easily comparable.

However, beyond the creation of new start-up ventures, accelerators have also become a key innovation ingredient for large government agencies, firms and other organisations. In these contexts, accelerators are often used as safe spaces to test and de-risk innovations in products, services and design prior to being scaled up more widely. In an internal context, outcomes are measured by how frequently or successfully a new product from the accelerator becomes scaled or embedded into the day-to-day business of the organisation (Kohler, 2016).

Accelerators in this internal context shift the dial on what value could be measured. In an internal context, the individuals participating in the accelerator hold dual roles: they are entrepreneurs of a new venture, and they are permanent employees of the firm or organisation which is supporting the new venture. The assumption that follows from these dual roles, is that the value of participation in an accelerator also takes on a dual role: new 'ventures' are one unit of value created, while human capital, skills gains for the permanent employee, become a new unit of value.

The overall outcome or purpose of an accelerator may be slightly different in an internal context as well. In addition to creating new business solutions, such internal accelerators could be an incentive for young, capable employees to stay the course with a large organisation, although this theory is still to be tested in research. In this way, corporate accelerators have become a symbol of innovation, a way to demonstrate to both employees and external stakeholders and investors, that a company or organisation is serious about stimulating innovation.

Issues with measuring accelerator outcomes and value

The large growth in the number and type of accelerators means it is difficult to determine the purpose, outcomes and value of participating in an accelerator programme. This is important especially for government agencies interested in accruing some of the perceived benefits of accelerators. In this section we highlight some of the issues with the current state of research into accelerators.

Firstly, there is no universally accepted definition of what constitutes an accelerator. The most widely accepted definition is Cohen and Hochberg's (2014): "A fixed-term, cohort-based program, including mentorship and educational components, that culminates in a public pitch event or demo-day." This definition includes two features (mentoring and education) and three boundary conditions (fixed-term, cohort-based, ends with a demo-day), but it is unclear that those particular features and boundary conditions are the critical ones. The initial, boundary-oriented definition was likely driven by the initial need to separate accelerators from incubators and it may be that this distinction is less important than it once was.

Moreover, particularly in corporate accelerators (the fastest growing category of accelerators world-wide) there is a shift away from cohort-based intakes and away from public pitch events or demo-days. However, all that leaves of Cohen and Hochberg's definition is mentorship and education, which would simply describe many corporate education programs. We think it is time for an updated definition of what accelerator programmes include.

The field of accelerator research has not moved toward significant theory development. Although it has been around for 15 years, it is not maturing into any specific direction nor towards any general theory of accelerator impact. This may be because the field is not heavily researched, there are fewer than 100 academic articles on accelerators.

Much of the exploratory research uses only a small number of cases, sometimes just a single case, which often select the case based on availability rather than "to explore a significant phenomenon under rare or extreme circumstances" (Eisenhardt & Graebner, 2007, p. 27) and provide for no control group. Moreover, much of this case research draws only descriptive "how often" and "how many" conclusions, rather than the in-depth "why" and "how" questions that case research is better suited to (Eisenhardt & Graebner, 2007). For example, many of the cases studies contribute little more than a description of the features or services that accelerators offer their participants.

Empirical accelerator research is therefore scattered, which means the field has no real depth or consistency. This results in a lack of theory (commonly accepted findings and explanation behind them) in the field overall. Our research is addressing this by recognising it, and by building our evidence base around impact on individual people, in order to reflect a true causal link between accelerator programmes and impact.

An updated look at units of analysis and control variables

The traditional focus on new ventures has created a challenge in how dependent variables, or measures of success, are regarded in the literature on accelerators. They either do not get written about at all or they are linked solely to financial outcomes. These financial or economic outcomes usually contain too many independent variables to control for and make the findings unlikely to apply elsewhere.

These challenges with metrics are most evident in the fact that there is very little discussion about what accelerators are or could be reporting, recording, or measuring internally. Some accelerators do provide statistics on their site for prospective participants. But they tend to focus on the amount of funding raised and the number of exits (and of course tell a positive story). The dominant focus therefore lands on the economic impact of accelerators, more specifically on the drive to identify and cultivate ‘unicorns’ – exceptional new ventures that greatly outperform most others. Indeed these unicorns are often called upon to justify the continued operation of and investment in entrepreneurial development activities, despite the fact that research points to unicorns as outliers that are not easily replicated [cite]. We think it is time for the metrics around accelerators to become more visible, more consistent, and to expand beyond measures of financial and economic capital.

Beyond metrics, current accelerator literature rarely controls for location, sector, time period or units of analysis. Many researchers neglect to mention the location of the accelerators they study, what sectors these accelerators are designed for, or at what stage in the program they gather data. However, there are potentially significant differences in market and social dynamics that differ across regions and industry sectors. And it is highly likely that the stage of the accelerator programme itself has a significant impact on the findings.

The unit of analysis in existing research is also quite mixed – some researchers look at ventures that come through an accelerator programme, whilst others look at the accelerators themselves, either through secondary data and interviews with founders, managers, or mentors or by examining the participating ventures as a collective dataset. Quite a lot of research mixes all of the sources above and more – it is not always clear why the given data sources have been chosen or what the unit of analysis is. One part of the process that might be being overlooked, though, is the entrepreneur. For example, it’s not always clear why entrepreneurs join accelerators – what do they hope to get from the experience? Why do they think they’d be better off in an accelerator rather than going it alone? And, of course, do they get what they’re looking for? It would also be interesting to look at how and why entrepreneurs choose accelerators.

We think it is time for an updated look at control variables and units of analysis for acceleration. Introducing more discipline in identification and use of control variables will increase the transferability of findings from research on accelerators. Using individual participants (be they entrepreneurs or employees of a large organisation or company) will expand the way we measure value for a novel approach to units of analysis, that has currently been overlooked in the literature.

A new approach to accelerator research with a diverse focus on value

The range of new or adapted accelerator models that is emerging seems to back up this idea that accelerators create more than new venture creation and economic growth. We think a lot of the ‘soft’ skills gains are the reason organisations are sponsoring accelerators, but this has not been empirically measured yet!

A research team at Victoria Business School (VBS) is conducting a longitudinal study on the impact of accelerator programmes for the individuals who participate in them. Much of the existing literature on accelerators has focussed on the accelerator or the venture as the unit of analysis, rather than the individual participants and their growth as entrepreneurial thinkers and actors. This has contributed to much of the literature using financial measures related to the venture as the dependent variable, despite the fact that it may be impossible to disaggregate the many independent variables that drive the financial success of new ventures.

The VBS study is building a dataset on the human capital gains that individuals experience as a result of an accelerator programme. Specifically, the research measures the change in individuals' self-efficacy (across factors of confidence, creativity, influencing, collaboration and resilience) through their time in an accelerator programme. Our research goes beyond the tangible outputs of traditional accelerator measurement, to begin measuring some of the human capital gains from these programmes. We see these as additional benefits to what accelerators offer to an organisation or firm, and our initial evidence supports this hypothesis.

By creating a dataset on individuals' growth and change within accelerator programmes, this research can provide answers to some of the big questions around accelerators and their wider impact. For organisations and employers this may improve targeted use of accelerators to develop employees who are innovative and confident. For sectors of the economy, this may help shift the balance to focus on developing innovative and confident individuals, alongside developing innovative new ventures and products. This focus shift, which the human capital lens on accelerators informs, sees entrepreneurs as the building blocks of a successful entrepreneurial ecosystem.

This research is at an early stage, but initial data from one case study accelerator (Mahuki) and anecdotal observations from another (Lightning Lab GovTech) indicate that accelerator programmes grow and develop individuals' self-efficacy in many or all of the above areas:

- Participants demonstrated substantial increases in their confidence that their start-up businesses would be a success, their level of identification with their start-up businesses, their confidence to effectively carry out the planning aspects of entrepreneurship, and their creative self-efficacy;
- Self-efficacy in terms of the planning dimension of entrepreneurship and general creativity both increased (10% and 6% respectively), suggesting that the Mahuki programme not only made participants more confident in their business/management skills, but also in their high-level creative capabilities
- Presentation skills and confidence in their ability as entrepreneurs improved for all participants, as the teams developed simpler and more engaging ways to describe their ideas.
- Participants seemed to gain a greater sense of realism about what it means to be an entrepreneur, as demonstrated by greater levels of relationship conflict between team members, and decreased passion for entrepreneurship (and intentions to engage in entrepreneurship) as a standalone pursuit at the end of the programme

- Teams developed greater clarity and coherence about their idea, its value, and how that value could be best expressed to others. Participants became better at identifying and describing key stakeholders, the role that they played in their 'business model', and how the team's venture contributed or was relevant to those stakeholders

The case studies in our research, Mahuki and Lightning Lab GovTech, are both examples of this more expanded, multi-layered approach to an accelerator programme. Although both are built firstly around the creation of a new product or venture, both recognise that human capital (skills) gains for participants are an important part of what their programmes offer. This research aims to measure that, as a complementary measure to any 'venture'-based measurement that the accelerators themselves are tracking.

Why does this matter and what comes next?

The findings of this ongoing research are providing data-based insights into the impact that an accelerator can have. This is an important step towards providing consistent, non-financial metrics for evaluating accelerator programmes: both on the individuals who participate in them, and potentially on human capital growth within a city/sector/ecosystem where the accelerator is operating.

Measuring new data points from what accelerators create for those who participate in them, will inform an updated definition of what accelerators are and the value that they create. Accelerators current pitch themselves similarly, no matter the sector or investment focus they target. This research may help accelerators distinguish between themselves and normalise measurement of more than direct financial and economic capital gains.

This think piece highlights emerging research in this space – creating some early and important empirical evidence to track impact on individuals from participation in an accelerator programme. This in turn can have an economic impact, through increased capability (and therefore assumed productivity or grunt) of people, though the economic unit of analysis is more diffuse/indirect and likely to be a local labour pool value rather than direct economic growth (which would be significant lag and

Should this hunch prove accurate, the findings would have an impact on the future of labour markets, in terms of the characteristics and trends that accelerator programmes deliver for a local ecosystem or labour pool.

Better understanding the impact of accelerators can improve how New Zealand uses them

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This work has implications for the use of accelerators as an innovation tool. Whether in a private or a public sector context, accelerator programmes offer more than new ventures, new products or economic growth. Better understanding what they offer for human capital growth – individual gains in confidence, adaptability, resilience and influencing - can help agencies, firms and organisations wield accelerators more effectively. In this context, they can be used as part of talent development and retention, as well as long term culture change.

We are currently working with the 2019 Lightning Lab GovTech Accelerator and presenting our findings within academia. We are keen to share our findings and inform future thinking. If you are interested in hosting a roundtable or would just like to learn more about our research, please get in touch.

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