



Advance Queensland Ignite Ideas Fund Evaluation Final Report

July 2019

nous

20 YEARS OF
INFLUENCE

Contents

1. Executive summary	Page 3
2. Introduction and background	Page 8
3. Estimating the impact of Ignite Ideas	Page 16
4. Evaluation findings	Page 22
5. Considerations for program evolution	Page 38
6. Outcomes against the AQ Framework	Page 44
7. Appendix A – Evaluation methodology	Page 46
8. Appendix B – Technical appendix	Page 50

1. Executive summary

Executive Summary – context and process

The Queensland Government wants to foster innovation among small and medium enterprises

Queensland aims to be 'A state made for innovation'.¹ To achieve this goal, the Queensland Government developed a series of innovative programs called Advance Queensland (AQ). One of the flagship initiatives under AQ is the Ignite Ideas Fund (Ignite Ideas). Ignite Ideas provides grants to support startups and small to medium Queensland businesses to commercialise market-ready innovative ideas, products, processes or services.

There have been four rounds of Ignite Ideas administered since July 2016. Almost \$35 million has been committed by the Queensland Government across 270 businesses in the first four rounds of Ignite Ideas. Applications for Round 5, shortlisted from an Expression of Interest process, are currently being assessed.

Nous was engaged to conduct an outcomes evaluation of Ignite Ideas

The Department of Innovation, Tourism Industry Development and the Commonwealth Games (DITID), engaged Nous Group to conduct an evaluation of Ignite Ideas. This follows two internal processes: a process review and Recipient Research survey, both conducted in 2018.

The process review resulted in a number of changes to the Round 5 guidelines (not in scope of the evaluation). The Recipient Research found the program achieves a reasonable return on investment, but was not designed to determine the additionality of the program.

The key objective of this evaluation was to assess the extent to which Ignite Ideas enabled the commercialisation of ideas, and the flow-on benefits to Queensland, over and above what would have happened anyway. It was also required to determine the extent to which the program contributes to the overarching AQ objectives.

This Final Report of the evaluation builds on important aspects from the Evaluation Plan (submitted 18 April 2019) and the Interim Report (submitted 14 June 2019).

Nous' evaluation approach involved a survey of applicants and recipients, three analytical methods and interviews

The findings of the evaluation are based on a comprehensive survey designed and administered to applicants and recipients of Ignite Ideas from Rounds 1-4. The survey of applicants who did not receive the grant is the key difference between this evaluation and the Recipient Research. The survey received a response rate of 11% for applicants ($n=179$), 34% for recipients ($n=84$) and 20% for dual recipients ($n=2$). The survey results were analysed using three techniques, as they each serve different purposes:

- **Comparison analysis:** This analysis estimated the differences between the outcomes for the applicant and recipient populations. It implies only correlation not causation.
- **Binomial maximum likelihood regression:** This analysis estimated the relationship between the outcomes and the grant, controlling for other factors that affect success. For this analysis, 'success' was treated as binary – it either did or did not occur. This analysis tested for whether the grant made a difference to the outcomes, but did not quantify outcomes.
- **Log linear multiple regression:** this analysis allowed for the quantification of outcomes, providing estimates of how much difference the grant made.

Survey analysis was complemented by interviews with DITID staff, Ignite Ideas recipients and applicants. It is important to note that in this report:

- **Applicants:** are firms that submitted an application to Ignite Ideas, but *did not* receive funding.
- **Recipients:** are firms that were successful in receiving a grant.
- **Successful:** refers to firms that achieved a positive outcome (in generating revenue, employment, and/or profits) **from their project/idea** regardless of whether they were an applicant or a recipient.
- **Unsuccessful:** refers to firms that did not achieve positive outcomes (as defined above), regardless of whether they were an applicant or a recipient.

¹Available at <https://advance.qld.gov.au/advance-queensland-initiative>

Executive Summary – key findings

Key Finding 1: The recipient firms have a higher probability of success than the applicant firms.

Using the comparison analysis, which only measures correlation not causation, the evaluation found significant differences between the recipients and applicants.

- Firms receiving the Ignite Ideas grant had a higher probability of success than those that did not receive a grant (applicants). Recipients progressed their idea to a greater extent, and were statistically significantly more likely to achieve an increase in employment, revenue and profit.
- The Ignite Ideas grant tends to accelerate time to market. Approximately 70% of applicants did continue to pursue their idea, but progress tended to be slower than those who received the grant.
- Better outcomes for recipients is also true in the regions, particularly when it comes to employment. Additionally, businesses with at least one female founder had a higher probability of success than those with all male founders. This is true of both recipients and applicants.

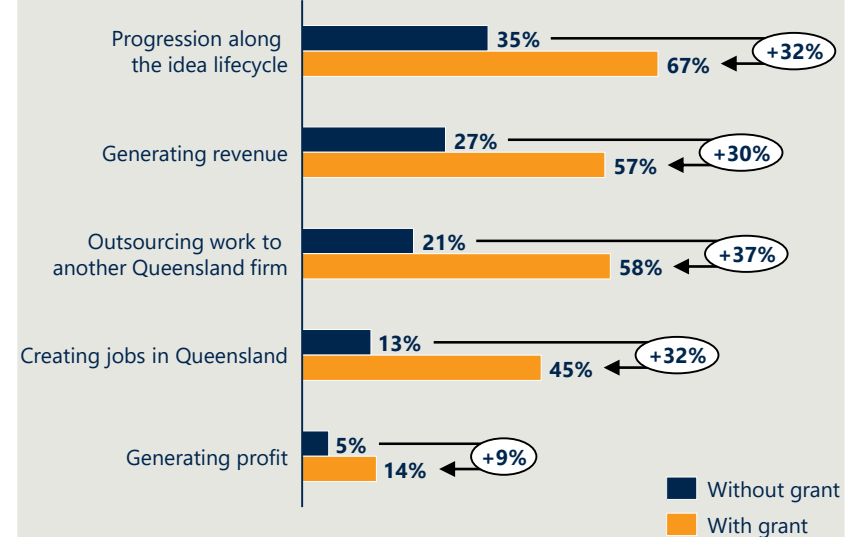
Key Finding 2: There is evidence to support additionality – that the grant contributed to these observed differences.

Controlling for other logical contributors to success to isolate the effect of the grant (the binomial regression), the analysis found evidence that supports additionality.

- The Ignite Ideas grant raised the probability of success for the recipient firms. Receiving the grant is associated with the probability of generating revenue being increased for the median firm by 30% to a 57% probability level (i.e. the median firm has a 57% chance of generating revenue, up from 27% without the grant) and generating profit by 9% (to 14% probability).

This is shown in graph to the right.

The probability of achieving success for a median firm* within two years, impact of receiving the grant



The comparison analysis provides some insight into how the grant changed the outcomes for recipient firms by enabling and speeding up progression. Without the grant:

- 21% of firms would not have continued with their project.
- 66% report that they would have gone more slowly, raising the risk of failure.

Based on the survey data collected, the **median firm*** that applies for the Ignite Ideas grant has the following characteristics;

- has 2.0 FTE of staff working on the project
- applying for a **Tier 1 grant**
- the project is the basis of their entire business (not a additional business venture) and;
- did not have customers at the time of application.

Executive Summary – key findings

Key Finding 3: The portfolio of firms supported by Ignite Ideas have made a reasonable return on investment.

The results from the third analysis (log linear regression) estimated how big a difference the grant made. Like a venture capital firm, Ignite Ideas makes most of its return from relatively few firms. While superstar firms are rare, firms with modest success make an important contribution to diversifying and growing the economy. This means the results are best interpreted for the median firm.

- 2 years after receiving the grant, the median successful recipient of a Tier 1 grant made a profit in the previous 12 months of \$25,000, which is \$16,000 higher than a similar firm without the grant. For the median Tier 2 recipient, profit was \$148,000, which was \$94,000 higher than applicant Tier 2 firms.
- Ignite Ideas is backing ideas that promote exports. 67% of recipients are exporting their product or service, which is higher than applicants, of which 49% are exporting their product or service.

Key Finding 4: The most important mechanism by which the grant assists firms appears to be through the resource effect – the funding enabled more activity.

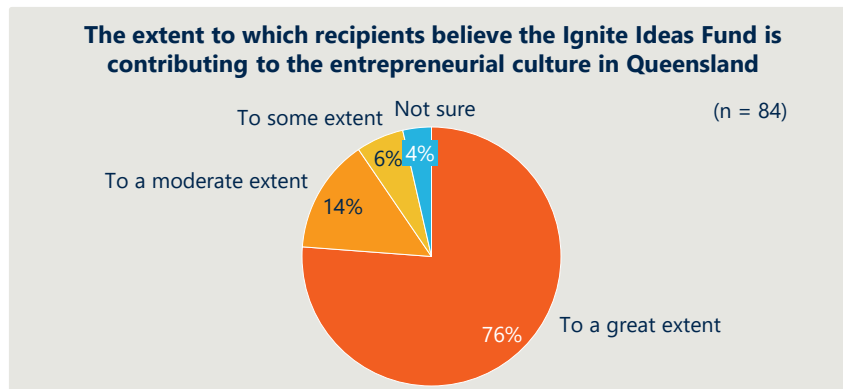
The comparison analysis points to the additional resources being the primary driver of the better outcomes.

- Recipient firms reported that they would have primarily relied on their own funding without Ignite Ideas. As such, Ignite Ideas appears to be filling a funding gap. The grant plays a signalling role for some firms, which reported being able to use the grant as a lever for attracting more funding – particularly from private and angel investors.

- More funding enabled higher employment, including increased hours for existing employees and the ability to secure more customers in Australia and overseas. Over 50% of recipients increased paid hours of existing staff in Queensland, by an average of 40 hours/week (compared to 24% of applicants by an average of 25 hours/week). 59% of recipients generated new jobs, compared to 28% of applicants. 83% of recipients reported that Ignite Ideas has assisted them to establish leads in Australia.
- 81% of respondent recipient firms reported that Ignite Ideas provided external credibility and there was strong qualitative evidence of an internal confidence boost.
- The Ignite Ideas application process did help some applicants to refine their business plan, however perhaps not to the extent that had been anticipated by program staff. It should be noted that this was not a major intent of the program.

Key Finding 5: There appears to be modest spillover effects from Ignite Ideas.

The evidence of additionality suggests that there would have been positive flow-on effects, mainly through higher employment. Recipients also had positive views in relation to how the program has contributed to the Queensland innovation ecosystem.



Executive Summary – considerations for program evolution

Consideration 1: The changes to the Round 5 guidelines appear to be sensible.

The process review led to changes that should reduce the cost of application and tighten the eligibility for Tier 2. These are in line with the evaluation findings.

Consideration 2: There may be benefit in viewing the grants as an investment portfolio.

With increasing probability of success comes decreasing additionality. This has an important implication for the selection process. Providing a grant to those assessed as highly likely to be successful without the grant raises the success rate of the investment, but reduces the additionality of the grant. A reduced success rate means the government takes on greater risk. Viewing Ignite Ideas as an investment portfolio enables considered risk-taking. Considerations for a portfolio of investments include:

- **Regional and urban mix of investments:** There could be value in weighting the regional applicants more in the portfolio, as regional recipients are just as, if not more, successful and the flow-on effects are greater in regional areas.
- **Female founders:** The evaluation found firms with women in their founding team were more likely to be successful, which is similar to findings elsewhere, and may be related to their greater difficulty in accessing investor funding. There may be value in exploring this further.
- **Ability to self-fund:** Firms with the ability to self-fund should be considered as a safer investment, but one with lower additionality.

Contingent loans may be appropriate for firms with demonstrated success. Replacing the Tier 2 grant with a contingent loan would enable the Queensland Government to provide firms with larger volumes of funding with reduced risk. The repayment of the loan would be contingent on the firm achieving a pre-agreed level of revenue from the project.

Consideration 3: There may be a role for the program to provide recipients with connections to greater support.

Some, but not all, of the recipients would have liked more support. The most common response to 'how the Queensland Government could better support the innovation journey' included:

- **Access to mentors:** Many recipients felt they may have been more successful with the right advice and mentorship, in addition to the funds.
- **Profile building:** Some recipients wanted greater exposure by the Queensland Government for their idea, particularly through the Minister and other communication campaigns.
- **Access and influence in government procurement:** Many recipients stated they had difficulty selling their product or service to Queensland Government departments.
- **Community building:** Some recipients stated they would have liked to have had a greater connection to other Ignite Ideas recipients, perhaps through group meetings with government representatives.

Research into what works well in promoting spillovers would be valuable in improving the mix of programs offered under AQ.

Consideration 4: The right data to track success needs to be collected to inform portfolio decisions.

With the additional changes made in Round 5, it is critical to measure the right factors to determine success. Ideally, participants of the program would be contractually obligated to provide the following information annually, for five years post-grant:

- whether the project has continued and the current stage of the idea
- jobs created in Queensland in the previous 12 months
- sales revenue in the previous 12 months
- profit created in the previous 12 months.

If the Queensland Government decides to increase the scale of the program this would offer an opportunity to conduct an experiment: providing different scales of grants with greater random allocation. This would provide data to better assess additionality.

2. Introduction and background

This document presents the evaluation of Advance Queensland's Ignite Ideas Fund

Purpose of the evaluation

The Ignite Ideas Fund (Ignite Ideas) provides grants to support startups and small to medium Queensland businesses to commercialise market ready innovative ideas, products, processes or services. This evaluation assesses the effectiveness and impact of Ignite Ideas, to make recommendations to the Department of Innovation, Tourism Industry Development and the Commonwealth Games (DITID) on how to gain maximum value for their investment when supporting innovation in small and medium enterprises (SME).

The evaluation was undertaken in three key stages:

- **Stage 1 (Apr)** – established a sound understanding of Ignite Ideas, and confirmed the evaluation approach.
- **Stage 2 (Apr-June)** – commenced the data collection, including surveys and interviews, and initial analysis. Interim findings were presented to DITID.
- **Stage 3 (Jun-Jul)** – completed the data analysis and stakeholder consultations to produce the Final Report.

This evaluation follows on from a Recipient Research survey in May 2018, and Process Review, in late 2018, conducted internally by DITID. The process review resulted in changes to the Round 5 guidelines (Round 5 is not in scope of the evaluation). The Recipient Research survey found the Ignite Ideas recipients were achieving outcomes, but was not designed to establish a counterfactual.

Purpose and structure of this document

This document synthesises and consolidates findings from the documentation review, data analysis and stakeholder engagement. It builds on important aspects from the Evaluation Plan (submitted 18 April 2019) and the Interim Report (submitted 14 June 2019).

It is structured in the following sections:

1. **Executive summary** – a standalone summary of the findings.
2. **Introduction and background** – covering the background of the Ignite Ideas Fund and the objectives of the evaluation.
3. **Estimating the impact of Ignite Ideas** – including the application of the AQ Framework.
4. **Evaluation findings** – the extent to which Ignite Ideas achieved its objectives.
5. **Considerations for program evolution** – ideas for the future of this and other programs to stimulate innovation
6. **Outcomes against the Advance Queensland Framework** – an assessment of the extent to which Ignite Ideas met its intended goals under the broader AQ Framework

Appendix A – Evaluation methodology

Appendix B – Technical appendix

Advance Queensland aims to foster innovation and build a more diversified Queensland economy, creating jobs now and into the future

Advance Queensland is a significant Queensland Government investment

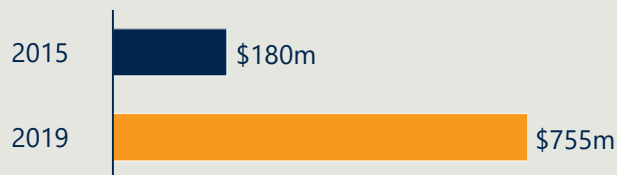
Queensland aims to be a state 'where ideas matter'. To ensure Queensland has a dynamic, modern and growing economy, the Queensland Government co-designed Advance Queensland (AQ) with industry. The initiative encompasses a wide range of investments, each aimed to shape the future of Queensland.

Government funding for AQ increased to \$755 million in 2019 to support the development, implementation and evaluation of the programs. To-date, AQ has driven more than 15,200 jobs across Queensland.¹

AQ is a whole-of-government initiative, with DITID providing coordination, implementation and monitoring and evaluation oversight and support.

The programs under AQ consist of grants, competitions, partnerships events, and innovative government procurement. These programs are targeted at entrepreneurs and startups, industry, investors, small business and university researchers.

Allocated funding was increased in 2019*



Five strategies to increase innovation have been identified for investment

The Framework for AQ clearly outlines how the AQ vision of 'A state made for innovation...' will be achieved. As depicted below, investment is funnelled through five key strategies, which make up the pillars of AQ. Each of the five pillars has two stated objectives. Activities funded through AQ must clearly link to the objectives of one or more of the strategies identified.

Advance Queensland Framework

VISION

A state made for innovation - where ideas matter, collaboration takes us further faster, and local innovation spurs productivity, creates jobs and builds our quality of life

STRATEGIES

Supporting culture	Building capability	Fostering collaboration	Increasing investment	Scale for jobs and growth
--------------------	---------------------	-------------------------	-----------------------	---------------------------

OBJECTIVES

Increase innovation awareness and engagement	Increase innovation capability	Build sustainable partnerships to deliver outcomes	Grow pipelines of investable products	Expedite commercialisation
Increase entrepreneurialism	Develop, attract and retain talent (incl. STEM)	Increase international networks	Build access to capital	Increase economic benefits from commercialisation

¹Source available at <https://advance.qld.gov.au/advance-queensland-initiative>

Ignite Ideas aims to commercialise innovative ideas and products

Ignite Ideas is a high-value grants program under AQ

Ignite Ideas provides grants to support startups and small to medium Queensland businesses to commercialise market ready innovative ideas, products, processes or services.

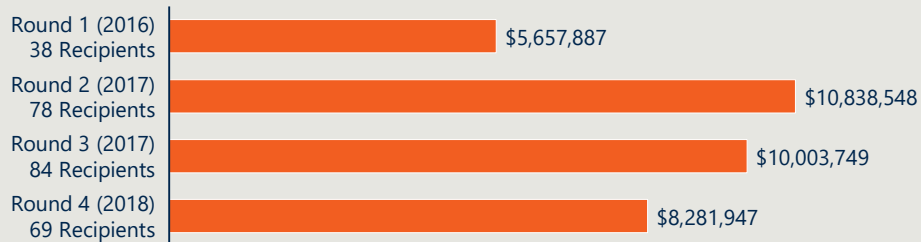
It is a significant fund, named as the fourth-most received grant in the 2018 StartUp Muster report.¹

There have been four rounds of Ignite Ideas administered since July 2016. As shown in the diagram below, almost \$35 million has been committed by the Queensland Government across 270 businesses in the first four rounds of Ignite Ideas. Applications for Round 5, shortlisted from an Expression of Interest process, are currently being assessed.

For the initial four rounds, two tiers of funding were available:

- Tier 1: Up to \$100,000 (with 20% co-contribution for small businesses, and 40% for medium businesses*), to be completed within 12 months.
- Tier 2: From \$100,000 up to \$250,000 (with a 50% co-contribution), to be completed within 24 months.

Funding administered through the four Ignite Ideas rounds to date*



*Figures per Ignite Ideas Evaluation provider briefing provided March 2019

The eligibility and selection criteria have increased the emphasis on the market readiness of the idea and Queensland outcomes over the rounds

Changes have been made to the guidelines across the four rounds of Ignite Ideas. The changes made in each round have been to increase clarity and intent. This has been particularly regarding:

- the state of the idea (how market ready it is) at the time of application
- what it means to be a 'Queensland business'
- what outcomes for Queensland look like.

In Round 4, to be eligible for Ignite Ideas, a business must:

- have been registered in Queensland, registered for GST, and have less than 200 full time equivalent staff
- have a Queensland developed and owned (or rights assigned) highly innovative (new) product, process or service which is at or beyond, minimum viable product/market ready stage
- have a clearly defined project that has the potential to achieve high growth for the business and benefit Queensland's economy
- provide clear evidence that they have the business skills and financial capacity to successfully deliver the project and provide clear evidence of demand or support from identified customer(s), industry partner(s) and/or investor(s).

A process evaluation led to significant changes in Round 5, including:

- Maximum firm size of 50 FTE
- Tier 2 grant maximum of \$200,000 and can only be accessed following the completion of a Tier 1 grant.

¹ Sourced from Startup Muster Annual Report 2018

*A 'small' business is defined as between 5 and 10 FTE, a 'medium' business is defined as 20-199 FTE

Ignite Ideas aims to contribute to four of the Advance Queensland objectives

Ignite Ideas links with four of the five AQ strategies. These linkages have been mapped in the diagram below. Ignite Ideas aims, in the short-term to build capability, grow pipelines of investable products, and expedite commercialisation. Over the longer term, this should help to support innovation culture, build access to capital and increase the economic benefits from commercialisation.

Each dotted box indicates the way Ignite Ideas intends to contribute to the AQ strategy or objectives. Note these are not the evaluation findings. The outcomes against this framework are provided on page 45.

Advance Queensland Framework

VISION

A state made for innovation - where ideas matter, collaboration takes us further faster, and local innovation spurs productivity, creates jobs and builds our quality of life

STRATEGIES

Supporting culture

Building capability

Fostering collaboration

Increasing investment

Scale for jobs and growth

OBJECTIVES

Increase innovation awareness and engagement

Increase innovation capability

Build sustainable partnerships to deliver outcomes

Grow pipelines of investable products

Expedite commercialisation

Ignite Ideas contributes to an active and collaborative start-up ecosystem

Ignite Ideas recipients gain experience in commercialisation

Ignite Ideas generates new products and services that can attract investment

Ignite Ideas recipients are able to commercialise their ideas faster than non-recipients

Increase entrepreneurialism

Develop, attract and retain talent (incl. STEM)

Increase international networks

Build access to capital

Increase economic benefits from commercialisation

Ignite Ideas contributes to entrepreneurialism culture

Ignite Ideas recipients undertake their commercialisation venture in Queensland

Ignite Ideas recipients are able to access additional funding (grants and investments)

Ignite Ideas recipients are able to generate jobs, revenue and profit

Indicates the extent to which Ignite Ideas directly relate these objectives:

■ Short term outcomes ■ Longer term outcomes □ No relationship

Governments are increasingly fostering private innovation and product development

At state, federal and international levels, governments are encouraging innovation and growth of private companies.

Queensland is not alone in encouraging innovation in business

State governments in Australia have developed many programs to increase innovation and productivity within their borders. For example, NSW has programs to help companies at differing levels of the product lifecycle, including the MVP grant (\$25,000 matched) and the Building Partnerships grants (\$100,000) program. It also provides loans of up to \$500,000 at a fixed rate of 9.2% or interest free for regional businesses.

The Victorian Government's programs focus on public sector and regional innovation. They provide 32 grant programs, aimed at helping SME's grow and innovate business processes and products. The 'Boost Your Business' voucher program supports businesses that meet industry eligibility by funding (up to \$50,000) the use of services for marketing engagement and business and innovation capability building.

The Australian Government is providing support and incentives for new product development

The Australian Government's Accelerating Commercialisation program provides SME's with up to \$250,000 to help bring new products to market. As part of this program, participants are provided support from commercialisation advisors to help with strategy and feedback on grant processes.

Companies are also able to access R&D tax incentives, which offer eligible companies the ability to reduce their tax liability by 43.5%

These are illustrated overleaf.

Israel has become the "Start Up Nation"

Israel is internationally renowned for its start up culture, and was ranked 2nd in the world for innovation by the World Economic Forum.¹ It has the largest number of startups per capita in the world, with over 2,000 companies founded in the last 10 years.

The Israeli Government has played a large role in fostering the country's innovative capability through the creation of the Israel Innovation Authority (IIA). This government department aims to make Israel the ideal environment for innovation, by providing high quality support, access to funding, and an international network.

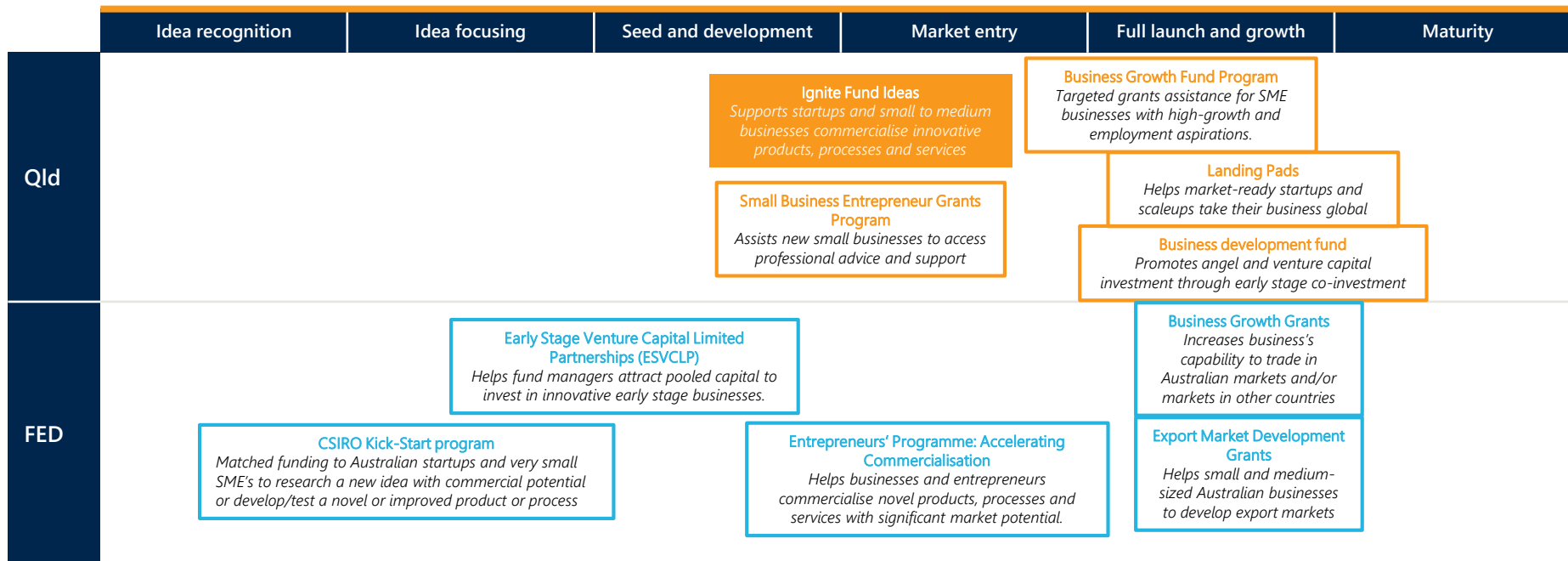
Similar to AQ, IIA has well-developed funding and incubator programs to provide financing and support to smaller firms. Successful products gain access to the well-developed network to connect these companies and venture capitalists for further funding.

One of the most prominent parts of IIA is the International Collaboration division. It has formed partnerships with multinational firms, state and federal governments around the world (including NSW and Victoria). Coordinating international collaboration in innovation, R&D and technology between Israeli companies and their counterpart organisations abroad. It has branches in Europe, the Americas and Asia-Pacific. Support for such strategic alliances is made possible through an array of bilateral cooperation agreements and binational funds. These activities provide a competitive advantage for the Israeli industry in the global market.

There are elements of Israel's approach that could be considered as a successful model of government-fostered innovation.

Ignite Ideas is one of a set of grant programs that Queensland businesses can access

State and federal governments have a range of grant programs aimed at increasing innovation and productivity. Ignite Ideas sits in the seed and development through to market entry space, crossing over with the Australian Government's Accelerating Commercialisation grant program.



NSW and VIC have multi-tiered grant programs that follow the lifecycle of an idea

NSW

NSW have two start-up focused grant programs aimed at idea focusing and market entry points in the lifecycle flow

- The Minimum Viable Product (MVP) grant is aimed at startups that are *not generating revenue* to help them engage with a potential business customer, create a channel to market, or an innovative solution that addresses an industry need or market gap¹.
- The Building Partnerships grants help *revenue generating* startups and small to medium enterprises scale or grow strategically by expanding or pivoting an innovative product or solution, acquire a major customer, deliver at scale, or build access to a new market¹.

VIC

Vic. has a Small Business Grants program that offers three tiers of funding options supporting the lifecycle through seed and development, market entry and full launch and growth

- Start up: aimed at new small businesses that will increase the diversity of Melbourne's business community and capability in diverse business sectors².
- Expansion: this grant is open to existing small businesses that are introducing a new, innovative activity, product or service as part of their expansion phase, or is an existing innovative small businesses relocating to/within the municipality ².
- Export: this grant helps small businesses wishing to enter into overseas markets for the first time, or businesses with demonstrated export experience to explore export opportunities in a new market or launch a new product/service in an existing market².

¹ Sourced from: <https://www.jobsforNSW.com.au/funding/startups>

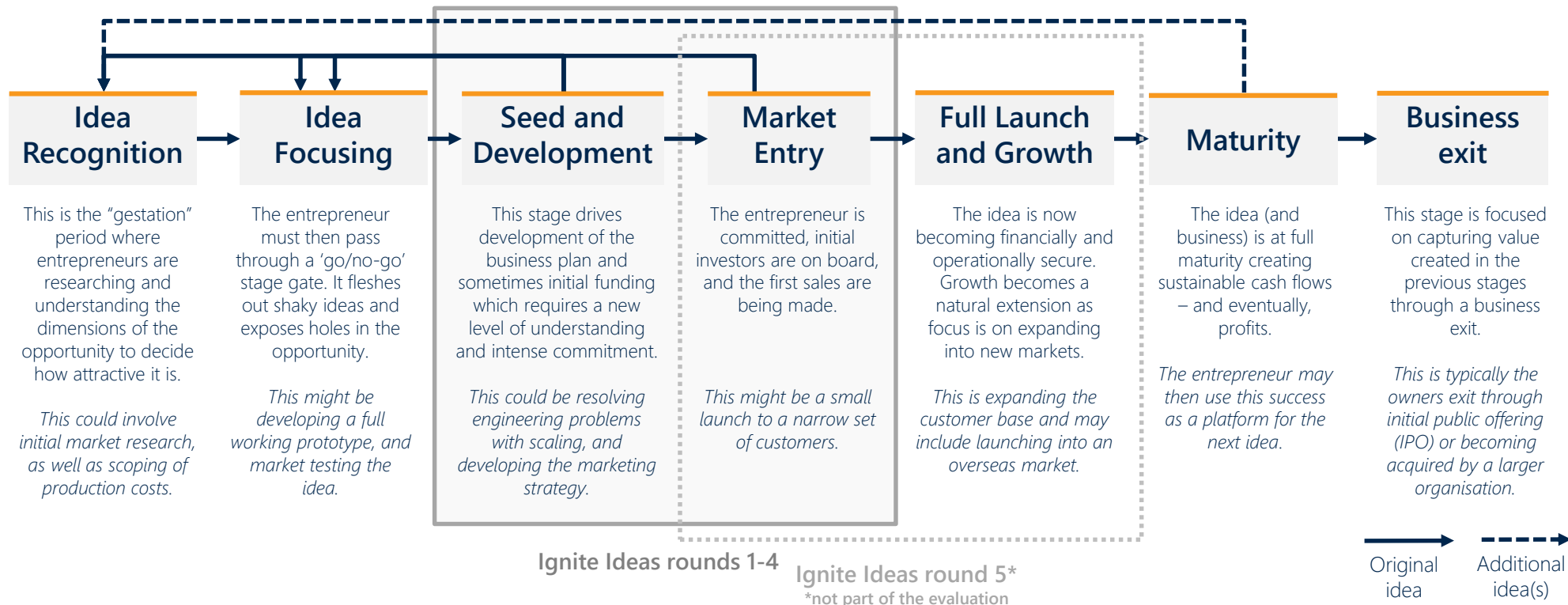
² Sourced from: <https://www.business.gov.au/assistance/small-business-grants-vic>

Ignite Ideas is targeted at firms as they move into or are in the early stages of market entry

Entrepreneurs experiencing success move along the idea lifecycle. Ideally they retain mature business and use it as a platform to look for new ideas, contributing to growing the economy and not just their bank accounts.

From the moment a person decides to set up a business, they are in the 'entrepreneur lifecycle'. The lifecycle sees the person's journey from idea to market entry, and if successful, through to growth and maturity, as shown in the diagram below. Each step presents a unique set of obstacles to overcome. Not all businesses will experience every stage of the business lifecycle, or will experience them in the same order. Some businesses may also get to a certain point in the lifecycle before moving back into earlier phases if the idea doesn't work out, or they discover a new, more feasible, idea.

Ignite Ideas aims to assist firms with ideas that are somewhere between minimum viable product and market ready. This places most firms in the seed and development and market entry stages depicted below. A key challenge faced by many startups and new business ventures is the support and funding required to get through the 'valley of death' – the phase between developing an idea, and getting paying customers for the idea. A sign of success at the individual firm level, and therefore of Ignite Ideas, is movement along this lifecycle, suggesting firms are able to progress through major hurdles, particularly in the market entry stage.



3. Estimating the impact of Ignite Ideas

The impact of Ignite Ideas is measured by the return on the investment

There are two levels of success for Ignite Ideas; outcomes achieved by the recipient firms, and outcomes achieved for the broader Queensland economy.

Return on investment is quantified by the number of jobs created as well as revenue and profits generated for the recipient firms

At the individual firm level*, we would expect recipients of Ignite Ideas grant funding to:

- Progress their idea for a product or service further along the idea lifecycle (page 15)
- Increase their sales revenue, employment and, in time, their profitability.

Successful recipient firms should have a positive return on the investment in their idea (on their capital investment and the grant funding). In aggregate, they should have a positive effect on the Queensland economy.

The combined outcomes of revenue, jobs and profits, determine the extent to which the Queensland Government has achieved a direct return on its investment in Ignite Ideas recipients. For the Queensland economy to be larger as a result of Ignite Ideas, this activity has to:

- be additional to what would have happened, and/or the program has to;
- have generated flow-on effects in areas of underutilised resources
- have generated spillover effects.

As not all recipient firms responded to the survey, the return on investment for all recipient firms has to be projected using the sample survey responses. The implicit assumption in drawing inferences about the outcomes of the program is that the non-respondents have the same profile of success as the respondent firms. As the sample characteristics closely reflect the population (page 20), this assumption is defensible.

The broader impact on the economy depends on whether there are flow-on effects and spillovers from this activity

Flow-on effects arise as the expansion of economic activity increases the demand for the services of other firms within Queensland. To the extent that they increase demand outside Queensland there are benefits to the broader Australian economy (or abroad). The main direct measure of flow-on effects is additional jobs created through outsourcing by the recipient firms to other firms in Queensland.

Understanding how the success of the Ignite Ideas firms influence the economy more broadly, is more complex. Flow-on effects are usually captured by multipliers or CGE models, which map how an expansion in one industry flows through to higher demands in other industries. Multipliers assume that there is no competition for resources, while CGE models focus more on how existing resources are reallocated across the economy. Neither approach is ideal for estimating flow-on effects from Ignite Ideas as the current scale of additional employment and profits is small, and the effects are spread across a number of industries. While the survey did ask about future outcomes, these responses appear to be unduly optimistic given what the data tells us about small firm survival rates and so we have not used this data.

In addition to flow-on effects, the program can stimulate spillovers:

- Spillover effects arising from the stimulation that the overall level and nature of activity has on attracting more startup activity and innovation.
- Growth in international exports, while not a spillover, is a useful indicator of improving competitiveness of the Queensland economy, and may deliver productivity improvements through economies of scale as growth is not limited by the domestic market.

*Success is considered at the idea/project level only. If the project undertaken with Ignite Ideas funding is a smaller venture for a much larger, established firm, only the success of the venture is considered, not the firm overall.

The imperative for the Queensland Government is to 'back winners', but the real return comes when the grant induces additional activity

The selection process influences the apparent success of Ignite Ideas which makes additionality more difficult to quantify.

Return on investment for the public depends on additionality

The extent to which Ignite Ideas positively influenced the success of firms, over and above what they would have achieved anyway, is the additionality effect. Without additionality, it is hard to argue that the program has been a success, as the 'counterfactual' is that the firms would have achieved the same return using another source of funds for investment.

Additionality is generated when Ignite Ideas drives outcomes that otherwise would not have happened such as through:

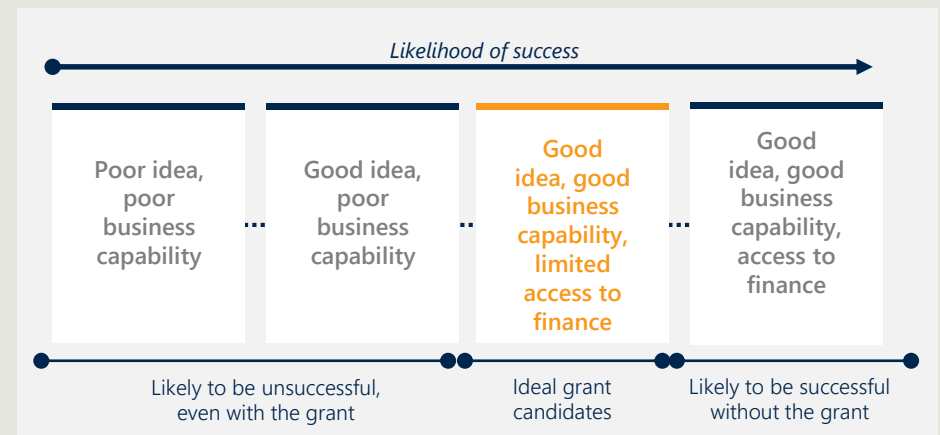
- raising the probability of the success* for the firm
- bringing forward the success of the firm – the idea gets to market faster and hence generates benefits sooner
- contributing to the level of innovative activity and generating economies of scale and scope by building critical mass (enhanced spillovers).

Comparing the outcomes of recipients and applicants is problematic, as rejected applicants are likely to have a lower probability of success

The selection process, as described on page 11, aims to select applicants with a higher likelihood of successfully commercialising their idea (along with other criteria such as achieving outcomes for Queensland). This means that the sample of unsuccessful applicants will contain a larger proportion of firms that were judged as less likely to be successful, even with the grant. This is represented on the left side of the diagram pictured, and is a desirable selection effect.

What is less desirable in terms of achieving additionality, is that the selection process used for Ignite Ideas did not screen out those who were likely to be successful without the grant. This was particularly a risk for the Tier 2 funding. This means that, ex ante, the expected probability of success is higher for the recipient firms than the applicant firms, even before they received the grant.

Assessing additionality is never an easy task. Where possible, a very similar set of firms is identified that do not receive the grant, and their outcomes can be compared. Nous has taken this approach, but recognises that because the grants were not randomly allocated, and there is a fundamental bias toward a higher probability of success (at least as assessed by the selection panel). There are some fundamental differences between the firms that received the grant and those that applied but did not receive the grant. To control for this systematic difference, we use other characteristics that are related to probability of success, then look for the difference that Ignite Ideas made to success.



*Success is defined as progression of the idea/product/service further along the idea lifecycle, increase their sales revenue, employment and, in time, their profitability.

To assess additionality the outcomes for applicants and recipients were compared, controlling as far as possible for factors affecting the ex ante probability of success

An online survey went to all applicants and recipients from Rounds 1-4

This evaluation takes a similar form to the Recipient Research conducted by DITID in 2018, through an online survey that asks respondents to self-report their revenue, employment and profit outcomes achieved to date, and their future projections for success across these three outcomes. The key differences between this evaluation and the Recipient Research are that it includes Round 4, and *applicants* to the fund, who did not receive funding.

It is important to note that the evaluation uses the following terms in the following ways:

- **Applicant:** a firm that submitted an application to the Fund, but **did not** receive funding
- **Recipient:** a firm that applied to and was successful in receiving a grant
- **Successful:** a firm that achieved a positive outcome (in revenue, employment, and/or profits) regardless of whether they were an applicant or recipient
- **Unsuccessful:** a firm that did not achieve positive outcomes (as defined above), regardless of whether they were an applicant or recipient.

Three tailored surveys were designed and built in Survey Gizmo; one for applicants, one for recipients and one for dual recipients (those who received funding in more than one funding round). The surveys were trialled through in-person and phone interviews, where the respondents undertook the online survey with a Nous consultant present. This process resulted in a number of refinements to the surveys. The finalised survey was then emailed through SurveyGizmo, generating a unique link for each respondent, allowing their responses to be linked to DITID-held data, such as their application scores.

The response rate was lower than desired, but given the large numbers, provided a sufficient degree of confidence in the findings

The survey was live for a total of 28 days. The initial response rates to the survey were low. Following an email from DITID, and additional reminders from Nous an 11% and 34% response rate was achieved from applicants and recipients respectively, as shown in the table below.

The response rate from applicants is a little lower than ideal, but the volume of responses enables a robust analysis to be conducted.

	Total # of surveys sent	# of partial responses	# of completed responses	Response rate (completed only)
Ignite Ideas applicants	1106	105	119	10.7%
Ignite Ideas recipients	248	44	84	33.9%
Ignite Ideas dual recipients	10	3	2	20%

Interviews with applicants and recipients complemented the survey

A total of 12 semi-structured interviews with applicants (4) and recipients (8) were conducted to provide qualitative insights. The interviews focused on understanding the trends seen in the quantitative data, and areas for program improvement.

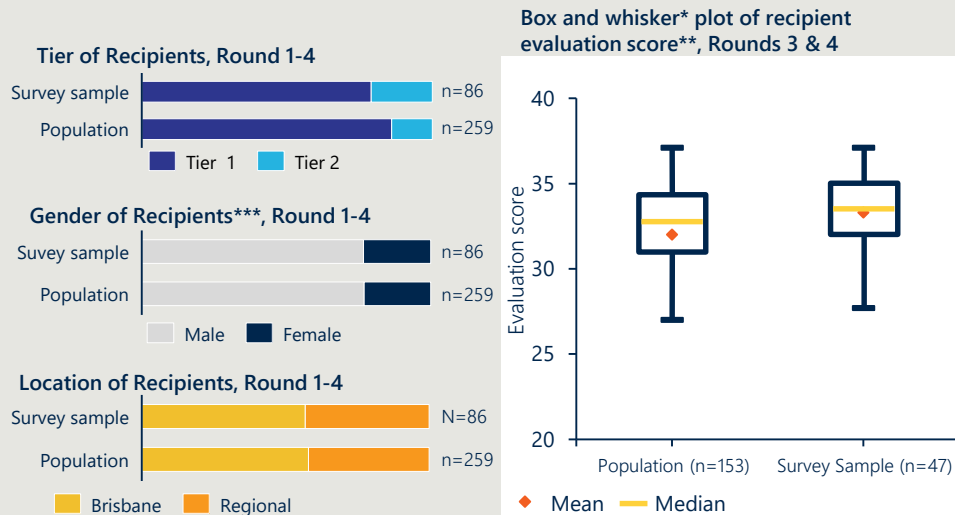
The survey respondents are relatively representative of their respective populations

The survey sample was representative across metrics of demographics, location, and evaluation scores.

The recipient survey respondents closely mimic the population demographics

The recipient survey had an overall completion rate of 34%. Respondents to the survey matched the population distribution for demographics and geographic, however were slightly over-represented in Tier 2 grants.

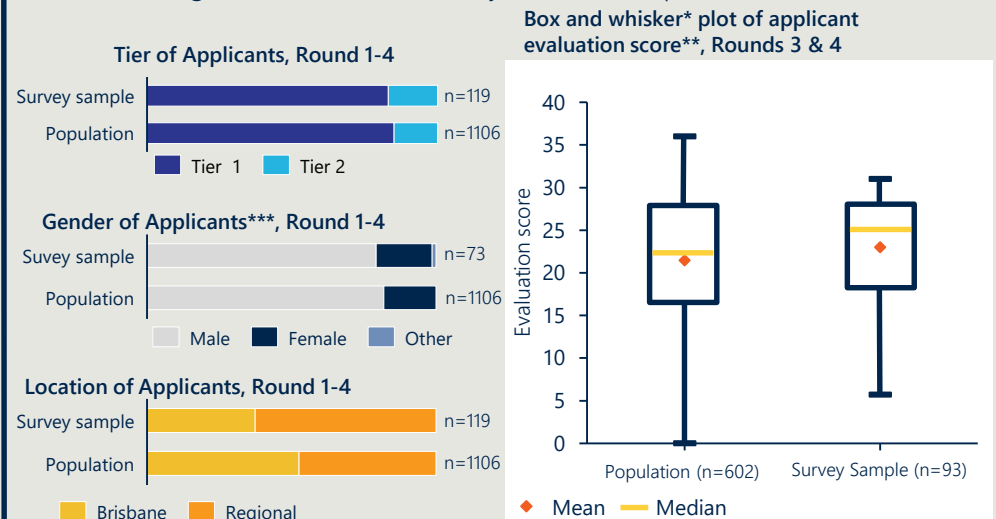
The application evaluation scores of respondents was also used to determine representation. This refers to the scores given to all firms who submitted an application to Ignite Ideas by the independent assessors. This score determined who would go on to receive a grant. As shown in the box and whisker plot below, the recipient respondent sample is slightly positively skewed in this measure, and has a mean score 1.3 points higher than the population.



Those responding to the applicant survey also reflect the broad applicant population

The applicants survey had a completion rate of 10%, and an additional 10% were partial completions. This is not unexpected, as those who did not receive the grant are less likely to take the time to complete the survey. In addition, it is possible that many applicant firms no longer exist, and/or the contact details are out of date. There is no apparent pattern in applicants who no longer are in business as the survey sample distributions of demographics, grant tier and evaluations scores are representative of the population. There was an over-representation of applicants from regional areas.

The evaluation scores of applicants has a smaller distribution and is slightly positively skewed (shown in the box and whisker plot). This suggests that the lowest scoring businesses are least likely to still be in operation.



* Box and whisker plots are a useful tool for interpreting the distribution of data. The "Box" contains 50% of all datapoints, while the "Whiskers" on either side contain the remaining 50% of the data points. The ends of the whiskers are the minimum and maximum datapoint within the distribution.

**Evaluation scores are only available for Round 3 and 4. Scores were normalised based on Round 3 criteria (Score out of 40).

*** Gender for population statistics was based on the title of the person who submitted the grant proposal

Nous utilised three analytical tools to develop our findings

The survey results were analysed sequentially, with three different analytical tools. Each tool serves a different purpose, as outlined below.

Comparison Analysis

Comparing outcomes of different groups

The starting point for the analysis is a simple comparison between the recipient and applicant samples. This looked at differences in the outcomes, perceptions and other responses across the two samples. To the extent that the selection process was able to distinguish characteristics that raised the probability of success, these groups will be fundamentally different. Given this, even if there are statistically significant differences, they cannot be attributed to the receipt of the grant. This analysis is used in pages 24 - 27, and throughout the report for simple comparisons.

Benefits:

- Simple and easy to understand
- Allows understanding of shape of the data
- Provides insights for further analysis

Limitations:

- No ability to infer causation

1

Binomial maximum likelihood regression

Assessing the change in the probability of outcomes

A technical analytical tool that is able to infer strong relationships between variables and outcomes of interest. This regression technique determines the odds of success/failure of each firm dependent on the explanatory variables, i.e. Firm X with Y characteristics has a Z% chance of success. This analysis is used in page 28 where we assess additionality.

Benefits:

- Powerful analytical tool that estimates the difference in outcomes due to each variable – in this case the grant
- Determines the probability of success for a firm

Limitations:

- Treats success as a binary variable (it did or did not occur)
- How well it measures the influence of the grant depends on how well the other variables controlled for the fundamental differences between the two samples

2

Log linear multiple regression

Assessing the change in the magnitude of outcomes

Linear regressions are a powerful and simple analytical tool to determine the impact of key variables on outcomes. Nous used this analysis to complement the findings from the logistic regression. This regression discerns the expected quantity of success, however it is very sensitive to the distributions of data. For this reason, it is best used to describe the outcomes for the median firm. This analysis is used in page 31.

Benefits:

- Powerful analytical tool that estimates the difference in outcomes due to one variable – in this case the grant
- Estimates the magnitude of the effect of a variable on the outcomes

Limitations:

- Is sensitive to the distribution of data
- Difficult to interpret the coefficients, as it is non-linear in impact

3

4. Evaluation findings

This section provides findings on the outcomes and additionality of Ignite Ideas

There are five key findings across outcomes, additionality, return on investment, contribution to success and spillover effects.

Three key questions guided the evaluation

The evaluation plan outlined three areas for exploration, connected to the program logic:

1. **Appropriateness** – is this the right thing, and the best thing, to do to address the issue?*
2. **Effectiveness** – are the activities achieving their intended outcomes?
3. **Impact** – what broader outcomes have been achieved as a result?

The evaluation aimed to build on the existing findings of the internal process review and the Recipient Research. To this end, the key focus for the evaluation was “to what extent did Ignite Ideas achieve outcomes over and above what would have happened anyway?”

There are five key findings

The findings are summarised to the right, and detailed in the following pages. They are structured by:

1. **Recipient outcomes** – what happened for the people who received the grant?
2. **Additionality** – to what extent were the outcomes observed due to the grant?
3. **Return on investment for QLD** – what do the outcomes achieved by recipients mean for QLD?
4. **Contribution to success** – how did the grant assist recipients to be more successful?
5. **Spillover effects** – what are the broader impacts of the grant?

* The findings on appropriateness are explored in Section 5- Considerations for program evolution.

RECIPIENT OUTCOMES

1

The recipient firms have a higher probability of success than the applicant firms. Recipients progressed their idea to a greater extent, and were more likely to achieve an increase in idea progression, employment and revenue. Recipients from regional businesses were as, if not more successful than Brisbane businesses, and far more likely to generate additional employment than regional applicants. Businesses with at least one female founder had a higher probability of success than all-male firms.

ADDITIONALITY

2

There is evidence to support additionality – that the grant contributed to these observed outcomes. When controlling for other logical contributors to success, Ignite Ideas had an additional effect on the probability of recipients increasing their revenue and profit. Without the grant, firms were less likely to progress their idea, or progress more slowly, and achieve lower revenue and profit.

RETURN ON INVESTMENT FOR QLD

3

The portfolio of firms supported by Ignite Ideas have made a reasonable return on investment. Only a few firms are expected to be hugely successful due to the nature of startups. However, 2 years after receiving the grant, the median successful Tier 1 recipient made a \$25,000 profit in the previous 12 months, and the median Tier 2 recipient made a \$148,000 profit. 59% of recipients generated new jobs. Recipients were also generating half of their sales revenue through export.

CONTRIBUTION TO SUCCESS

4

The most important mechanism by which the grant assists firms appears to be through the resource effect – funding enables activity. Ignite Ideas helped recipients achieve success as it enabled them to employ the right people, increase internal confidence and external credibility and leverage additional funding. The application process assisted some applicants to refine their business plan to some extent, but was not the primary intent of the program.

SPILLOVER EFFECTS

5

There appear to be modest spillover effects from Ignite Ideas. The evidence of additionality suggests that there would have been positive flow-on effects, mainly through higher employment. Recipients also had positive views in relation to how the program has contributed to the Queensland innovation ecosystem.

Firms receiving Ignite Ideas (recipients) had a higher probability of success than those that did not receive a grant (applicants)

There is a significant difference in idea progression, revenue, profits and employment between recipients and applicants, but this does not distinguish between the impact of the grant compared to selecting for success.

There is clear evidence the recipient firms have a higher probability of success than the applicant firms

Recipients and applicants who responded to the survey were asked to provide the following information:

- Stage of their idea at the time of application to Ignite Ideas, and now
- Revenue generated in the last 12 months
- Profit generated in the last 12 months
- Number of employees at the time of their application, and now.

Any positive response to these questions, agnostic to quantum, was recorded as a successful outcome in the initial analysis. As shown to the right, recipients of the grant are statistically significantly more likely to be successful, across the four measures of success, than applicants to Ignite Ideas. For example, 72% of recipients achieved an increase in revenue over the past 12 months, compared to 45% of applicants.

This result, while positive, is unsurprising. Ignite Ideas targets ideas that are thought to have a high likelihood of success. To the extent that the assessment process works well, the ‘applicants’ sample will have a higher proportion of ideas are unlikely to be successful. This means this result does not provide evidence that the Ignite Ideas grant was a critical factor in the success of the firm. Once this ‘selection’ effect is controlled for the grant is found to have a significant impact on success (Key Finding 2 – page 28).

Success measures		Percentage of successful Recipients	Percentage of successful Applicants	Statistical Difference ² (p-value)
Idea Progression		68%	38%	0.000017***
Revenue	Current	72%	45%	0.00014***
	Projected future ¹	82%	62%	0.0011**
Profit	Current	37%	17%	0.0022***
	Projected future ¹	58%	43%	0.028*
Jobs	Internal	59%	28%	0.000063***
	Outsourced (to another firm in QLD)	62%	24%	1.5 e-8***

Significance for the p-value are (* = P<.05), (** = P<.01), (***) = P<.001)

¹ The projected future numbers in this table represent the recipients and applicants’ self-predicted expected success in these measures in the next 12 months. Self-predicted future projections of success are interesting business confidence measures, but are not considered meaningful success measures. This is due to a large optimism bias, particularly among applicants. For additional information on the threshold requirements for success, please refer to the technical appendix (page 53).

² The lower the p-value (the more asterisks ***) the higher the confidence that the samples are significantly different. Anything lower than 0.05 is statistically significant.

The Ignite Idea grants tend to accelerate time to market

There were many applicants who did continue to progress their idea, but progress tended to be slower.

Failure to get a grant meant some applicants abandoned their idea

In total, 29%¹ of applicant respondents did not pursue the idea they submitted to Ignite Ideas - shown to the right. This means approximately 70% of applicants to Ignite Ideas have pursued their idea to some extent without the grant.

Ignite Ideas recipients were more likely to be at an early stage of the idea lifecycle at time of application than applicants that progressed their idea

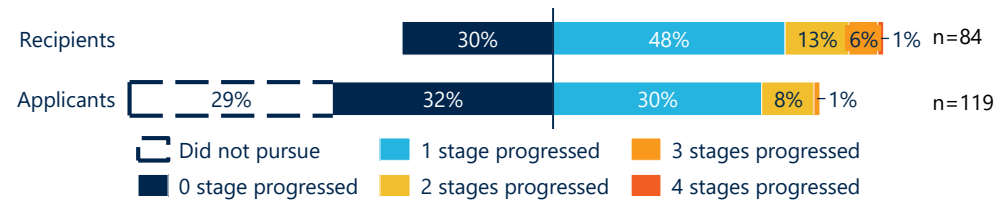
As shown in the charts to the right, recipients were more likely to be in the 'idea focusing' or 'seed and development' stages than applicants, who were more likely to be in 'full launch' and 'growth' stages.

This is likely due to the selection process, reflective of the guidelines. The guidelines have changed between rounds, but have generally aimed for firms in the late stages of minimum viable product (MVP) and early stages of commercialisation.

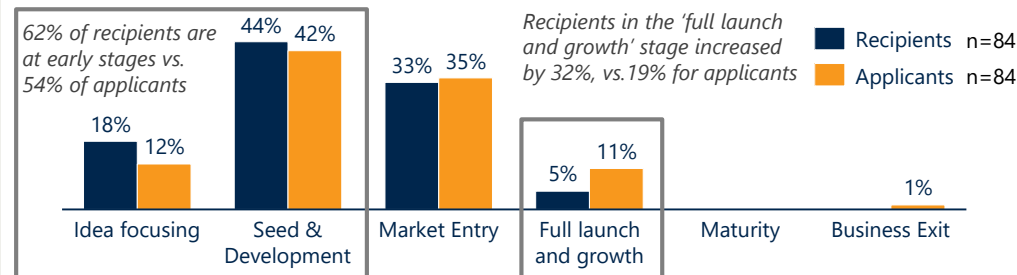
Recipients were able to progress their idea faster than applicants

Both recipients and applicants (who pursued their idea) were able to progress their idea along the idea lifecycle. However, receiving the grant allowed firms to progress and achieve full launch and growth stage sooner than applicants, as recipients have a higher distribution in the later stages of idea progression than applicants at the time of survey. As shown in the graphs to the right, recipients in the 'full launch and growth' stage went from 5% before application to 37% at the time of the survey, compared to applicants who went from 11% to 30%. Note that applicants who did not progress their idea have not been included in these charts.

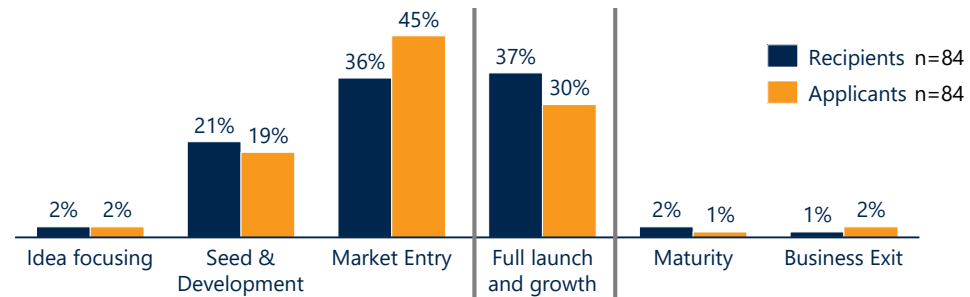
Number of stages progressed along the idea lifecycle since the time of application, recipients and applicants²



Stage of the idea lifecycle prior to application, recipients and applicants



Stage of the idea lifecycle at time of survey, recipients and applicants



¹This includes 9% who pursued alternative ideas to the one submitted to Ignite Ideas

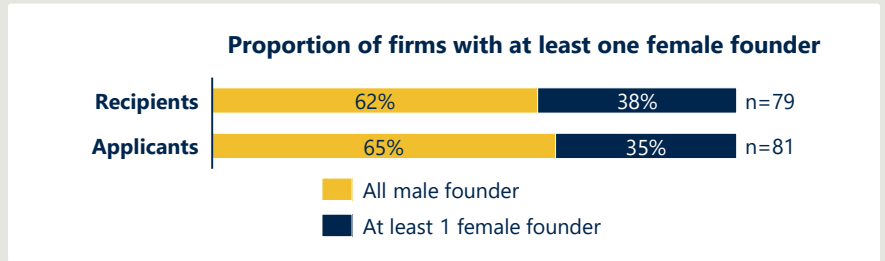
²Idea lifecycle is represented on page 15.

Ignite Ideas has a reasonable representation of firms with women founders and/or located in regional areas

There were no Aboriginal and/or Torres Strait Islander recipients who responded to the survey.

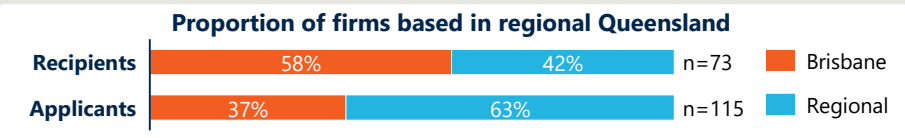
Firms with at least one female founder have a higher rate of success

Across both recipients and applicants*, firms that had at least one female founder outperformed firms with only male founders across all measures. The exact reasons for this are unknown. Another is that female founders are more risk averse, and face greater challenges in receiving investment, so are more certain before they proceed with an idea.¹



Regional firms who receive the grant have higher employment outcomes

The share of firms generating revenue, profit and internal employment was the same for Brisbane and regional recipients of the grant. The difference in probability of success between recipients and applicants was much greater for regional businesses compared to Brisbane businesses, particularly in revenue and job creation. Regional recipients were also more likely to outsource work within Queensland than Brisbane recipients.



Success rate of firms by grant and gender of founders*

	Recipient		Applicant	
	All male	At least one female	All male	At least one female
Revenue	71%	73%	35%	78%
Profit	35%	40%	12%	32%
Jobs – internal	53%	63%	27%	39%
Jobs – outsourced (in QLD)	57%	70%	20%	35%
Average number of applicants	1.84	2.24	1.73	1.93

Success rate of firms by grant and regional status

	Recipient		Applicant	
	Brisbane	Regional	Brisbane	Regional
Revenue	71%	71%	72%	30%
Profit	36%	38%	14%	19%
Jobs – internal	57%	58%	34%	14%
Jobs – outsourced (in QLD)	57%	71%	35%	16%

There were no Aboriginal and/or Torres Strait Islander respondents

No Aboriginal and/or Torres Strait Islander recipients or applicants responded to the survey, reflecting the small pipeline of Indigenous businesses, as well as the limited uptake of the program. Additionally, no respondents had outsourced work to an Indigenous business.

*Applicants who did not pursue their idea are not included in this analysis as they did not progress to this question in the survey.
¹ Source available at: <https://www.bcg.com/publications/2018/why-women-owned-startups-are-better-bet.aspx>

The evaluation supports the findings of the Recipient Research

The evaluation survey asked very similar questions to the 2018 Recipient Research survey, so it adds one more year of data.

The Recipient Research survey found that Ignite Ideas had positive outcomes, but was not designed to establish the counterfactual

DITID designed and administered an online survey to recipients of Ignite Ideas funding from Rounds 1-3. The research report was completed in May 2018.

The survey had a good response rate – 122 completed surveys – resulting in a 65% response rate.

The survey found that:

- two-thirds of recipient firms increased their number of employees (new jobs were created, of which 81% were based in Queensland)
- 70% discovered new products and services
- 80% reported increased credibility when pitching to investors
- the number of recipient firms with paying customers rose after receiving the grant.

The evaluation purposefully asked similar questions to the Recipient Research, to add to the existing data. A comparison of outcomes for the comparable questions is provided in the table to the right. The evaluation supports the key findings of the Recipient Research, with very similar outcomes.

The Recipient Research was not designed to determine the additionality of the program. This is explored overleaf.

	Recipient Research n=122	Evaluation n=86	Comment
Identify as a start up	75%	86%	
Idea is the foundation of the entire business	N/A	84%	This question was only asked in the evaluation. 16% of respondents indicated the idea is a new/additional venture for their established business.
Ignite Ideas as sole funding source	10%	12%	
Use of R&D Tax Incentive	50%	51%	
Have customers at the start?	30%	63%	In the evaluation, only 25% of recipients reported having revenue prior to application. The Recipient Research asked about paying customers, whereas the survey for this evaluation did not specify if they were paying.
Customers since receiving the grant	57%	N/A	This was not asked in the evaluation, as sales revenue was chosen as the indicator of success.
Increase in credibility when pitching to customers, buyers or partners	81%	81%	
Of jobs created since receiving the grant, how many were in QLD?	81%	88%	

The Ignite Ideas grant increased the probability of success for the recipient firms

Regression analysis was used to control for the differences in the probability of success between the recipient and applicant group, which shows the grant is associated with greater success.

Receiving the Ignite Ideas grant raised the probability of being successful

To understand the impact of the grant on recipients, over and above what recipients would have achieved anyway, a regression analysis was run. The regression controlled for other logical predictors of success, including: number of staff, stage of the idea, time since application, whether the company was established, and if the firm had customers. Of these theoretically explanatory variables, all the directions were as expected, but only having customers at the time of the grant application was a significant predictor of success.

Receiving the grant was significantly associated with a higher probability of success. To see a quantitative indication of program impact is a significant outcome.

The difference the grant makes to the probability of success for the median recipient firm ranges from 32% in terms of progressing the idea to 9% for generating profits

The easiest way to see the change that the grant made for recipient firms is to estimate how it changes the probability for the median firm in the distribution. The first column in the table to the right uses the model to predict the probability of success for the median recipient firm if they did not receive the grant. The second column gives the estimates of their probability of success with the grant. The difference the grant made as a percentage increase on the without grant baseline is provided in column 3.

It is worth noting that the median firm that applies for Ignite Ideas still has a significant chance of failure. Receiving a grant almost doubles its chance of generating revenue, however, still has a 43% chance of not generating revenue. This not surprising, given the relatively high rate of failure in startups, which is outlined on page 30.

	Probability of success of median Tier 1 firm after two years		
	Without grant	With grant	Difference
Progression along the idea lifecycle	35%	67%	32%
Generating revenue	27%	57%	30%
Generating profit	5%	14%	9%
Creating jobs in Queensland	13%	45%	32%
Outsourcing work to another Queensland firm	21%	63%	37%

Based on the survey data collected, the **median firm** that applies for the Ignite Ideas grant has the following characteristics;

- has 2.0 FTE of staff working on the project
- applying for a **Tier 1 grant**
- the project is the basis of their entire business (not a additional business venture) and;
- did not have customers at the time of application.

Ignite Ideas is enabling and expediting commercialisation of ideas

21% of firms would not have continued with their project without the grant and 66% report that they would have gone more slowly, raising the risk of failure.

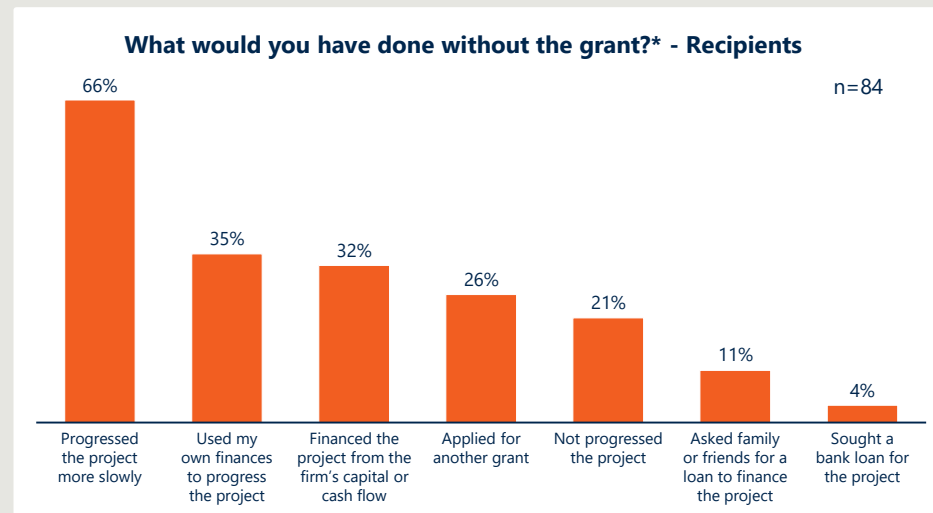
Recipients report that they would have progressed their projects more slowly, or not at all, without the grant

21% of recipient respondents reported that they would not have progressed their idea at all without Ignite Ideas. The Queensland Government investment is therefore a direct contributor to approximately 21% of the firms it is backing, without which the projects are highly unlikely to have occurred.

The number of firms who abandon their idea is likely to be higher than 21%, as Ignite Ideas is expediting project progress, and recipients link going more slowly to an increased chance of abandoning the idea, as demonstrated in the quotes to the bottom-right. Of the 73 survey respondents who provided a free-text response to the question 'What would not receiving the funding have meant for your business venture?', over half indicated their progress would have stalled or stopped. Many also indicated that this slowing would have put their market opportunity at risk and/or impacted their Intellectual Property rights. Additionally, two-thirds of survey respondents indicated if they had not received the Ignite Ideas grant they would have progressed their idea more slowly (shown on the right). This self-reported outcome supports the finding presented on page 24, where recipients were more likely the progress their idea further along the idea lifecycle than applicants.

Only a small share of recipient firms would have applied for a different grant if they had not received the Ignite Ideas grant

As shown on the right, recipients who responded to the survey stated without the grant, they were more likely to use personal finance or company resources to fund their project than grant funding. Specifically, only 26% of recipients would have applied for a different grant. This is strong indication that Ignite Ideas is effectively filling a funding gap for firms.



“Progress would be slower. We may have erred on a risk minimisation approach and decided to not progress the project”.

“If we hadn't invested in this product innovation with the assistance of Ignite, our business may not have existed at all.

“The IP would lapse and the company would have closed”.

“It would have taken YEARS & we may have given up or made a mediocre product”

*Respondents could select multiple options, unless they selected 'Not progressed the project'

Like a venture capital firm, Ignite Ideas makes most of its return from relatively few firms

While superstar firms are rare, firms with modest success make an important contribution to diversifying and growing the economy.

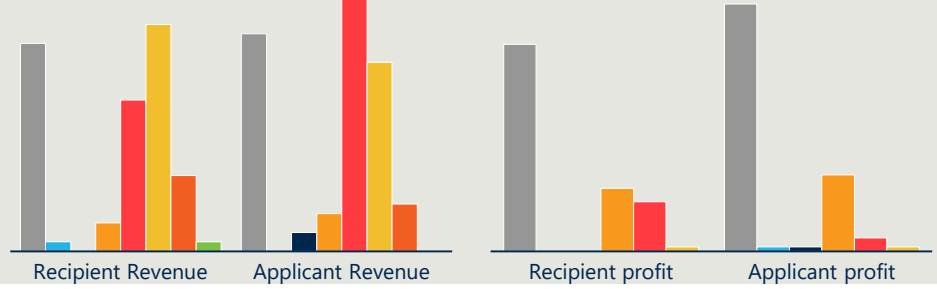
Only a few firms backed by Ignite Ideas are expected to achieve huge success

Startups have a relatively high failure rate. The 2018 Startup Muster Report provides an estimate of the population of existing startups and the number of startups launched each year. The annual attrition rate can be estimated at approximately 35%, when averaging the difference in the total number of startups operating in a year (existing plus launched) and the number that 'make it through' to the following year, across 2015-2018.¹

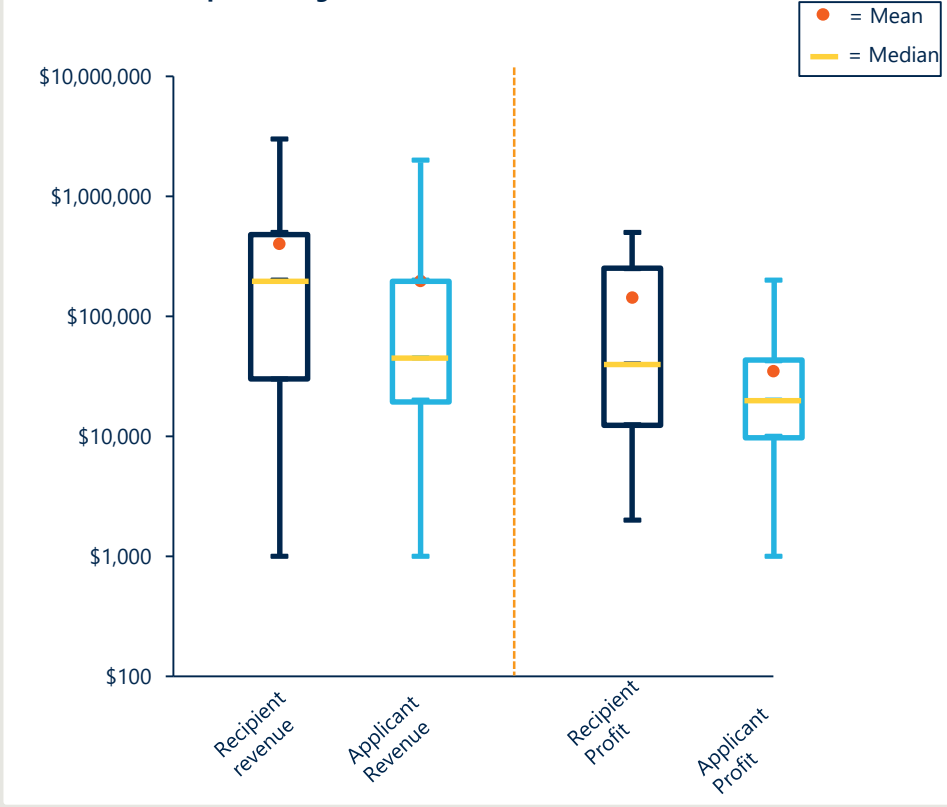
Even with the process put in place by Ignite Ideas to back successful applicants, only a few are expected to scale exponentially. As indicated by the graph below, many recipients and applicants have not generated any sales revenue in the last 12 months. Of those who have, there is a large distribution of revenue and profit achieved by both recipients and applicants (shown by the relatively large boxes and whiskers shown on the graph to the right, which is using a log-scale).

Recipients and applicants were asked to estimate their projected employment, revenue and profit over the next 12 to 24 months in the survey. However, examination of their estimates compared with startup survival rates, suggests they were over-optimistic, so this data was not used.

Distribution of revenue and profit for recipients and applicants to Ignite Ideas, log scale



Revenue and profit of recipients and applicants to Ignite Ideas (who had >0 revenue and/or profit), log scale



¹ Sourced from Startup Muster Annual Report 2018, Nous analysis

The investment made by the Queensland Government is achieving a reasonable return

Most of the overall return in revenue, profits and employment comes from a small share of grant recipients.

The firm level return to the Ignite Ideas investment comes from the higher average return across the whole portfolio of recipients

When compared to a similar firm, recipients of the grant are expected to have a greater level of success. Recipients of the grant are expected to experience double the revenue and an even greater increase to profits.

The potential return on capital investment (ROCI)^{***} for a successful Tier 2 firm is higher than a Tier 1 firm.

When provided with a grant, the expected financial return is greater for Tier 2 firms. This reflects their ability to scale the business more quickly and efficiently. After the two year mark some firms may start to plateau, however other successful firms are expected to continue scaling with higher financial performance and greater ROCI.

If the Queensland Government was a private investor it would expect firms to be able to repay the capital investment within 2 (Tier 2) to 4 (Tier 1) years.

	Median Tier 1 firm*			
	Without grant	With grant	Difference	ROCI
Expected Revenue*	\$33,000	\$71,000	\$38,000	0.38
Expected Profit**	\$9,000	\$25,000	\$16,000	0.16

	Median Tier 2 firm***			
	Without grant	With grant	Difference	ROCI
Expected Revenue	\$161,000	\$345,000	\$156,000	0.74
Expected Profit	\$54,000	\$148,000	\$94,000	0.38

*The median Tier 1 firm has 2.0 FTE of staff working on the project, applied at the seed and development stage of the idea lifecycle, the project is the basis of their entire business (not a additional business venture) and did not have customers at the time of application.

** Median Tier 2 firm has the same characteristics as Tier 1 firm except it had 6 FTE of staff working on the project

*** ROCI is calculated by taking the additional financial gain associated with the grant and dividing it by the grant amount provided, assuming the maximum grant amount was provided.

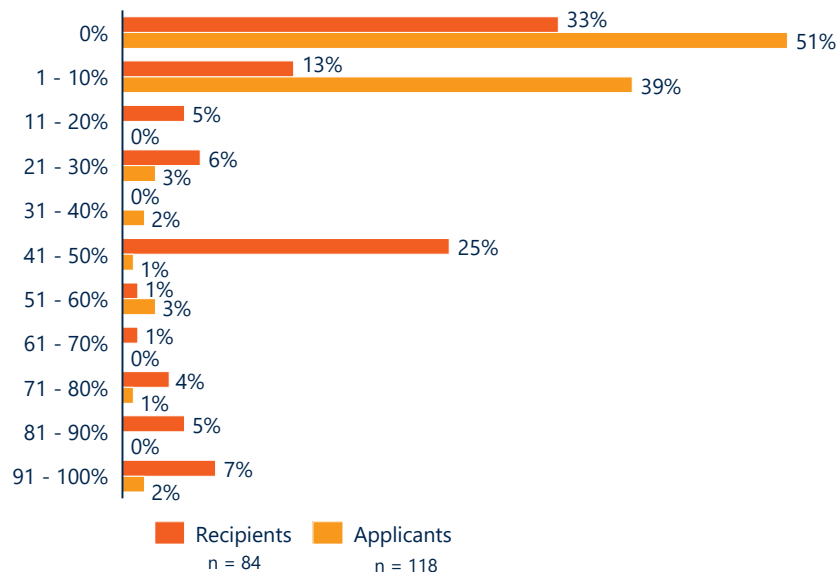
Ignite Ideas is backing ideas that promote exports

Business ventures pushing beyond the domestic market are demonstrating Queensland’s capability and ambition to scale up and market overseas.

Recipients have a higher share of sales that are exports

As shown in the chart below, 67% of recipients are exporting their product or service, with 7% of recipients exporting over 90% of sales. This is higher than applicants, of which 49% are exporting their product or service. It could be possible that recipients are being selected for exporting potential given AQ’s definition of ‘startup’¹. Alternatively, the grant could enable the business venture to move along lifecycle faster, and can therefore build the capacity and capability to export sooner. Recipients also connect with TIQ at twice the rate of applicants (shown on page 37).

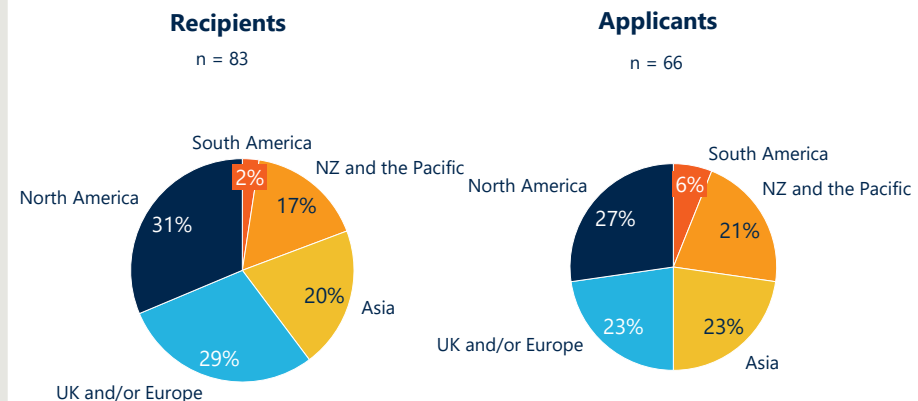
Share of sales that are exports – recipients and applicants



Firms that are exporting are doing so fairly evenly across North America and UK and/or Europe

There is no dominant export market for recipients and applicants, or much difference between where these two groups are exporting. North America and UK and/or Europe, however, are slightly bigger export markets than NZ and the Pacific, and Asia. South America is a small export market for both recipients and applicants.

Export markets – recipients and applicants



¹ AQ defines a ‘startup’ as a new high-growth potential business, developing innovative products and services, with a globally scalable market.

² Sourced from Startup Muster Annual Report 2018

Firms would primarily rely on their own funding without Ignite Ideas

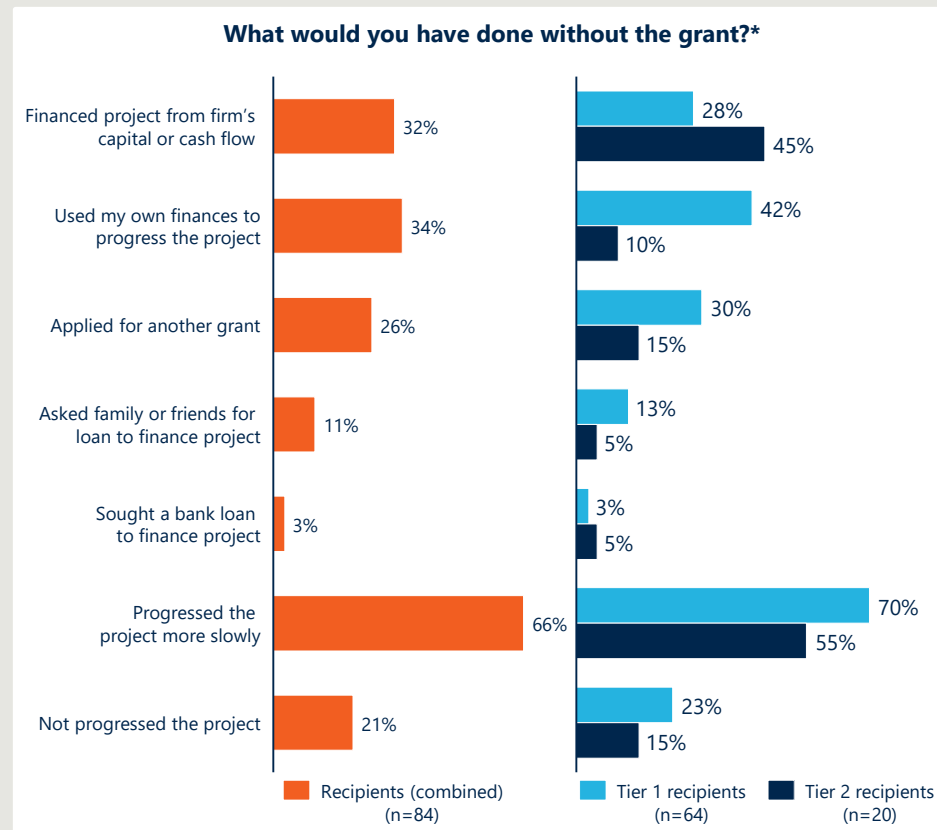
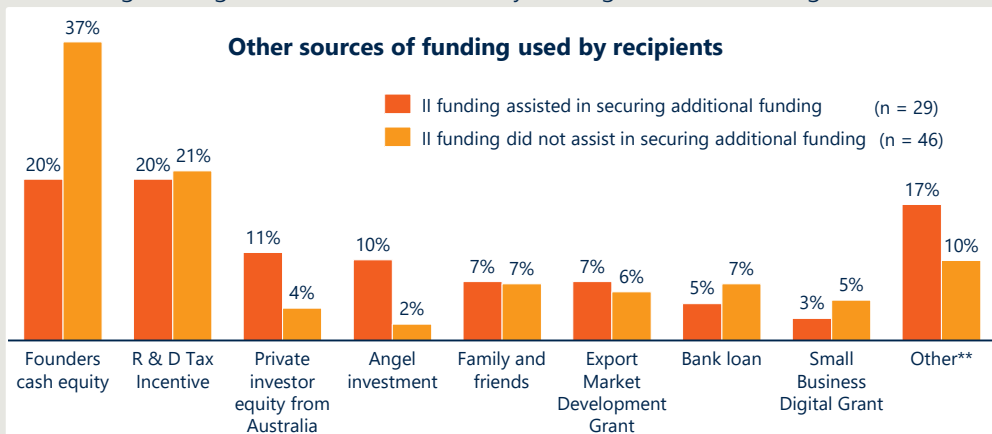
Ignite Ideas appears to be filling a funding gap with some firms able to use the grant as a lever for attracting more funding.

Tier 1 firms are more likely to use personal finances than Tier 2 firms

Without receiving Ignite Ideas, over 40% of firms who received the Tier 1 grant report said they would have used their own finances to progress the project. Tier 2 recipients, on the other hand, said they were more likely to use the firm’s capital. This is not entirely surprising, as Tier 2 recipients must fully match the funding provided by Ignite Ideas, so they would have greater access to capital. However, it highlights the different scale of businesses accessing the two grant tiers.

Some recipients are using Ignite Ideas funding to assist in securing funding from private and angel investors

39% of recipients said they have used Ignite Ideas funding to assist in securing additional funding from other sources. There is little difference between those that used and did not use Ignite Ideas funding to assist for most sources of funding, with the exception of private and angel investment. The use of these two sources of funding was higher in those that said they used Ignite Ideas funding to assist.



“Since the grant, we have raised a convertible note, 50% of the cost structure for next four milestones were taken care of, so it made a massive difference for investors.” – Ignite Ideas recipient

*Respondents could select multiple options, unless they selected 'Not progressed the project'

** Other includes: Entrepreneurs’ Programme Accelerating Commercialisation, Venture capital, Knowledge Transfer Partnerships, Small Business Entrepreneur Grant, Private investor equity from overseas, Business Development Fund, Brisbane Lord Mayor’s Budding Entrepreneur’s Program, Accelerator Program Funding (e.g. Telstra Muru-D, Unearthed, QUT Collider)

More funding enabled higher employment, including increased hours for existing employees and the ability to secure more customers in Australia and overseas

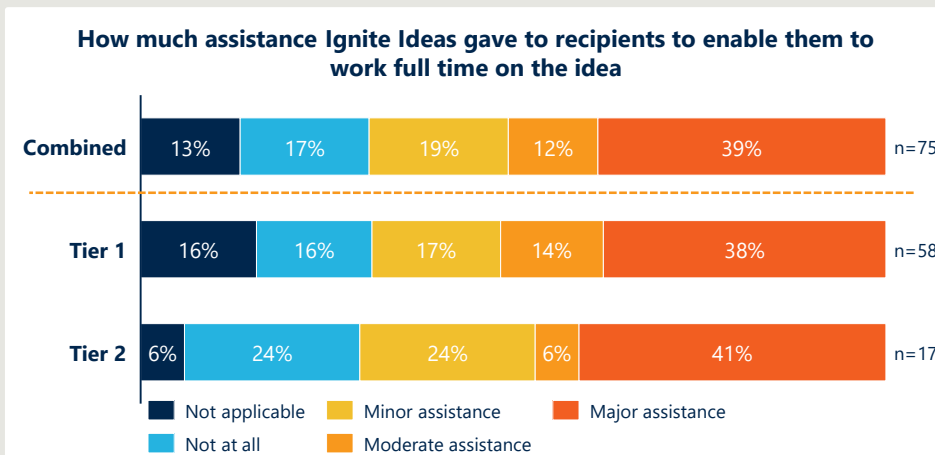
Recipients were more able than applicants to increase employment, and 83% found Ignite Ideas assisted them to establish leads in Australia.

The grant enabled recipients to employ people and work full time on their business venture, progressing them faster along the idea lifecycle

Several themes emerged from recipients when asked about benefits they had received from the grant. These centred around the ability to:

- **Employ more people or increase hours of existing staff.** Specifically, 50% of recipients were able to increase paid hours of existing employees located in Queensland, and did so by an average of 40 hours per week across existing FTE. (the average number of existing FTE at the time of application for these recipients was approximately 4.5). 28% of applicants increased paid hours, by an average of 26 hours per week.* Approximately 59% of recipients also created new jobs in Queensland, compared to 28% of applicants.
- **Work full time, or increase their dedication to the project.** As outlined in the chart below, 39% of recipients said their Ignite Ideas grant provided major assistance in enabling them to work full time on the idea.

There was low use of 457 visas for employment, with only 4 recipients using the mechanism to find the skills they needed.

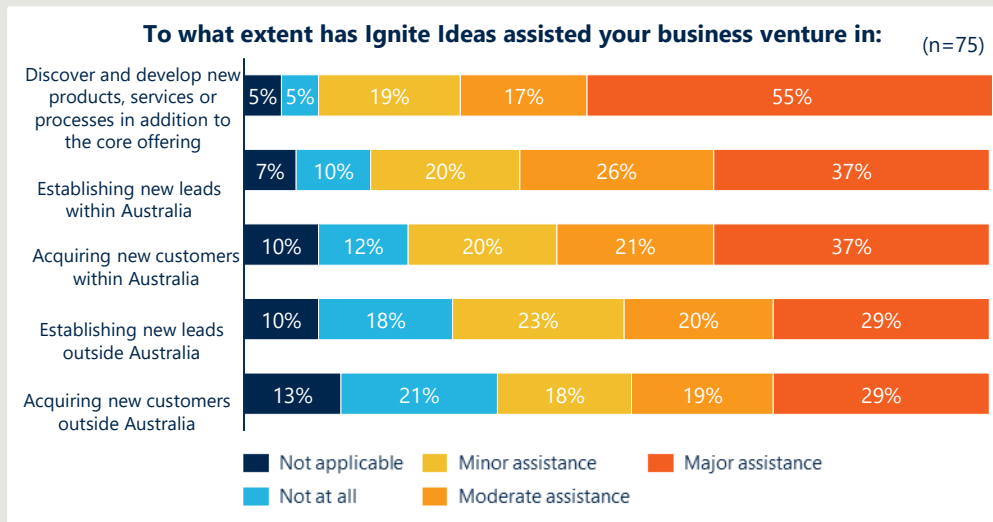


Recipients found the grant particularly useful to establish new leads and acquire customers

The grant assisted recipients to establish leads and customers both in Australia and overseas. As shown below, the most overwhelming result was 55% of recipients claiming the grant provided them with 'major assistance' to discover and develop new products, services or processes in addition to the core offering.

In summary, the grant assisted to some degree with:

- 83% of recipients to find new leads and 78% of recipients to acquire new customers in Australia.
- 72% of recipients to establish new leads and 66% of recipients to acquire new customers outside of Australia.



* The applicant average is skewed due to one firm who reportedly increased hours by 600 hours across 15 employees, which has been removed. With this data point included, the applicant average increase in paid hours was 45 hrs/week.

Recipient firms report that Ignite Ideas provides internal confidence and external credibility

For Tier 1 recipients in particular, the prestige of Ignite Ideas was valuable to their venture.

For many, the backing of the Queensland Government was not only helpful for external credibility, but for founder confidence to pursue the idea

In line with the Recipient Research conducted in 2018, a major outcome for recipients of Ignite Ideas is the credibility it provides to firms. The backing of the Queensland Government is highly valued by firms when they pitch for further investment, approaching advisors, or to sell their idea to potential customers (shown on the right and in quotes below).

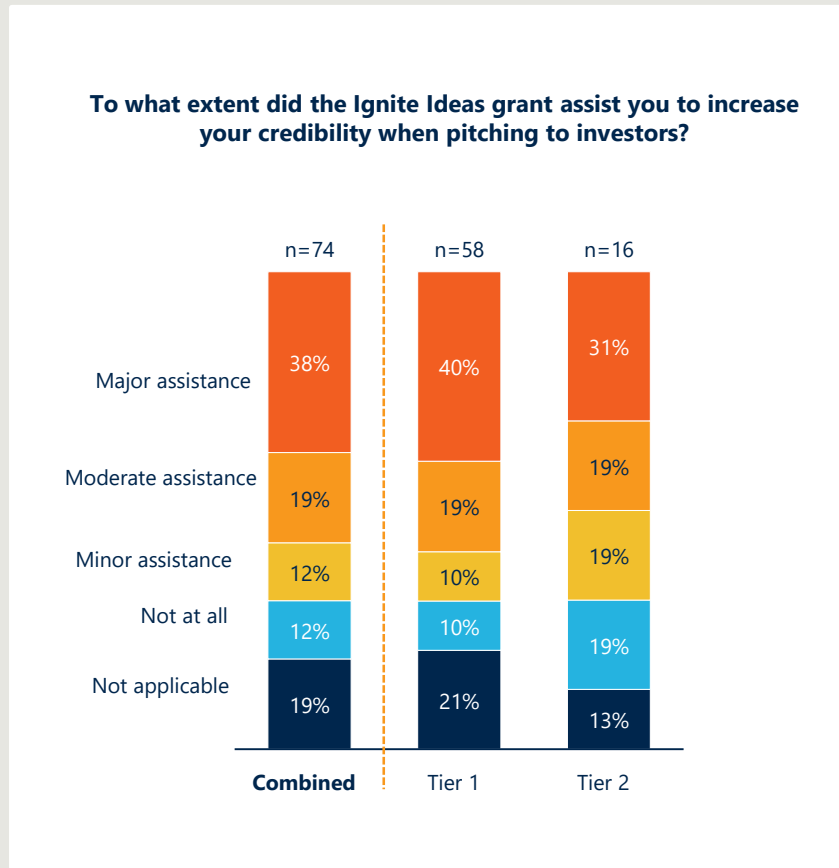
When asked what can be directly attributed to the Ignite Ideas funding, recipients said more time to attend national and international conferences to network and market their idea, increased company visibility and the opportunity to improve how they pitch their idea.

Further to this, the backing of the Queensland Government provides internal confidence to the firm. Many recipients spoke about the grant affirming that it is worth pursuing their idea. This confidence buoyed the motivation of the founders and team members, re-energising often tired and stressed teams.

“It is a great source of validation - having your idea reviewed and evaluated by objective assessors in a competitive process gives you confidence that you are on the right path.” – Ignite Ideas recipient

“The support one gets from the market having government support. It means credibility, this is more important than the money.” - Ignite Ideas recipient

“Credibility of being backed by Qld Govt has been a major benefit”
- Ignite Ideas recipient



The Ignite Ideas application process helped some applicants refine their business plan

While not a primary intention of the program, program staff had heard some anecdotal reports the process of applying for Ignite Ideas, including developing a business plan and pitch, was helpful to applicants, even if they did not receive the grant. The survey found approximately half of respondents reported the process was helpful to a small or some extent to refine their pitch and business plan.

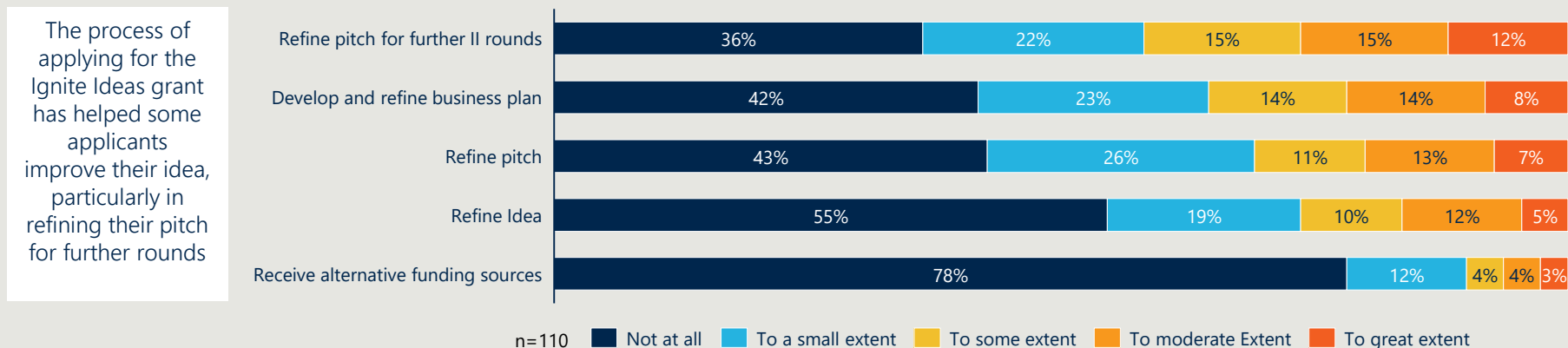
Several themes emerged from the free text suggestions on how Queensland Government could help the applicants, or others, on their innovation journey by improving the application process:

- **Improved feedback** – providing better feedback emerged as a leading theme. Some applicants felt the feedback was lacking in detail or was not tailored enough to add value to how they could improve. In addition, some applicants received feedback from different assessors that was contradictory, and caused confusion.
- **Perceived capability of assessors** – not all applicants believed their idea was well understood by assessors, or believed that assessors had little to no understanding of the industry in which the idea sat.
- **Bias towards technology** – this emerged as a third theme with some survey respondents whose idea focused on manufacturing suggesting they weren't as favoured as technology based ideas.

Encouragingly, some applicants recognised the changes made in the Round 5 process and highlighted they had made a positive difference. One respondent specifically mentioned the streamlined process created by the introduction of the EOI step. They welcomed the time saving the EOI created over completing a full application.

“The suggestions provided as feedback were not very helpful. i.e. saying that a strength was the applicant clearly understands the target market and then improvements required were greater knowledge of similar technologies/competitors in the market – it doesn't make sense”
- Ignite Ideas Applicant

To what extent did the Ignite Ideas application and feedback process assist you, as an application to¹:

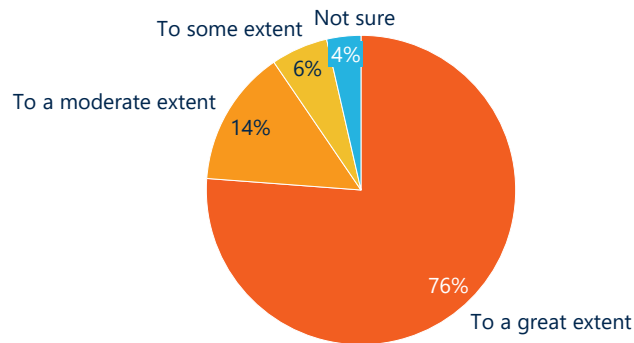


Recipients viewed Ignite Ideas as a positive contribution to the Queensland innovation ecosystem

Anecdotally, the existence of Ignite Ideas grants program is improving the entrepreneurial culture in Queensland

Three quarters of recipient survey respondents believed Ignite Ideas is contributing, 'to a great extent', to the entrepreneurial culture in Queensland. This was supported by several free text responses, where recipients favourably noted the program's contribution to innovation.

The extent to which recipients believe the Ignite Ideas Fund is contributing to the entrepreneurial culture in Queensland (n=84)



“I have seen the quality of startups improve significantly in the past two years and I believe the grant environment is a wonderful incentive for entrepreneurial activity” – Ignite Ideas recipient

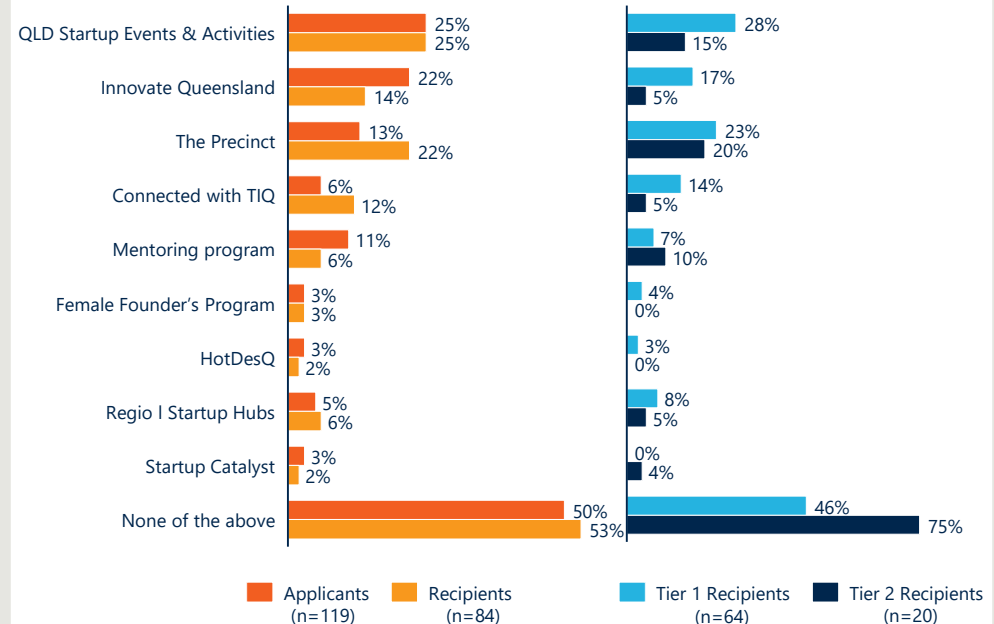
“I also feel the Ignite Grant is a very big plus for positioning Queensland as a supporter of its startups and the innovation economy.” – Ignite Ideas recipient

“These project funds and the other funding available under Advance Queensland are very important to the high tech community. – Ignite Ideas recipient

Around half of recipients and applicants had accessed other Advance Queensland support offerings or programs

There was almost no difference between applicants and recipients in accessing other Advance Queensland programs, as shown in the graph below, on left. Of the recipients, Tier 1 recipients accessed more than Tier 2 (shown below on the right), which could reflect where they are in their idea lifecycle and business maturity (page 25). Tier 1 firms were more likely to be in 'development' and 'early market' entry stages, whilst Tier 2 were more likely to be established and moving into 'full launch' and 'growth', and in less need of other types of support.

Other Advance Queensland support or programs recipients and applicants have accessed in the last 5 years¹



¹ This question allowed multiple selections when answering, unless they selected 'none of the above'.

5. Considerations for program evolution

The impact of Ignite Ideas may be strengthened through minor changes

Many of the changes already implemented for the Round 5 process are likely to improve impact, which will need to be measured.

The evaluation findings point to some considerations for program evolution

The evaluation found recipients of Ignite Ideas are able to commercialise ideas sooner, and achieve greater employment, revenue and profit outcomes than applicants. The evidence supports the program logic that the grant increases the probability of success for recipient firms.

It should be noted that the program is still relatively young; the maximum amount of time elapsed is three years since receiving the grant (Round 1 was awarded in 2016). This has two opposing effects:

- Some firms have ideas that take longer to come to market, so outcomes should improve with the passage of time. Few firms that received the grant have yet to reach maturity (page 25).
- Startups have a high failure rate, so some firms that are currently reported as successful on some of the measures, may not be able to reach sufficient profitability to stay in business long-term.

Nevertheless, there are considerations for the Queensland Government in the evolution of this program, and in the design of other programs which aim to enable the commercialisation of innovative ideas.

These are summarised to the right, and detailed in the following pages.

Considerations for program evolution

- 1 The changes to the Round 5 guidelines appear to be sensible. They should reduce the cost of application and tighten the eligibility for Tier 2.
- 2 There may be benefit in viewing the grants as an investment portfolio. The program needs to have clear definitions of what success looks like for the Queensland Government. This will help determine the types of firms and ideas to invest in, and the best way to invest.
- 3 There may be a role for the program to provide recipients with connections to greater support. There may also need to be a focused effort to better understand and design for the generation of spillovers.
- 4 If the Queensland Government decides to increase the scale of the program this would offer an opportunity to conduct an experiment by providing different scales of grants with greater random allocation, that would provide data to better assess additionality. However, for the current version of the program, the right data to track success needs to be collected to inform portfolio decisions. With the additional changes made in Round 5, it is critical to measure the right factors to determine success.

Consideration 1: The changes made following the Process Review align with the findings of this evaluation

The changes to Round 5 should reduce the cost of application and tighten the eligibility for Tier 2.

The process evaluation resulted in changes to the Round 5 guidelines

A Process Review was conducted by DITID in late 2018, which focused on the implementation and delivery of Ignite Ideas (from rounds one to four). There were several findings of the review, two which are particularly pertinent to the evaluation:

- Ignite Ideas receives a large volume of applications, many of which are ineligible and/or present an idea that is too early in development. In response, the program:
 - Conducted an EOI process prior to a full application to enable an early screening process, and redirect ineligible applicants to other funding sources.
 - Strengthened guidelines to specify that the idea is 'at least' a minimum viable product, allowing Tier 1 projects to finalise their commercial proof of concept and Tier 2 projects to achieve their first sales.
- Ignite Ideas is going to applicants who do not need the grant. In response, the program:
 - Reduced the maximum Tier 2 funding to up to \$200,000 to distinguish from the *Accelerating Commercialisation Programme*.
 - Reduced eligible firms' total number of employees from 200 to 50 FTE.
 - Recipients must first successfully complete a Tier 1 project, before applying for Tier 2.

As round 5 of the program was not in-scope of the evaluation, and is still in the selection process, we cannot comment on the effectiveness of the changes to the guidelines, but the changes do align with the evaluation findings:

Concerns that the two stage application process would reduce the learning from application are not warranted

Applicants found the application process quite laborious so there are gains in attracting a wider range of applicants through the two stage process. The concern that the application process was itself useful for firms and that this would be lost under the new approach was found not to be warranted as overall applicants did not find the application process particularly beneficial. The change to an EOI process was welcomed.

Idea stage is connected to the definition of success

One of the challenges of the evaluation was to define success; for the individual firm and for Queensland, particularly with varying guidelines over the rounds. The move to increase clarity will assist.

While the grant was found to have generate additional outcomes, selection for success could have dampened the program impact

The evaluation found the selection process had a limited emphasis on selecting-out firms who were likely to be successful without the grant. The change in funding volume, size of eligible firm and staging of funds between Tier 1 and Tier 2 should reduce the inclusion of firms that would have succeeded at the same pace without the grant.

Consideration 2: There may be benefit in viewing the grants as an investment portfolio

The program needs to have clear definitions of what success looks like, to determine the types of firms and ideas to invest in.

With increasing chance of success comes decreasing additionality

One of the most important considerations for any government aiming to support innovation is the level of risk they are willing to take, as they wish to be careful with public money, and there can be media attention on perceived failure. But unlike regular investors, who only care if their investment makes a return, government must take care not to displace private investment. They must try to minimise crowding out, so that the public investment has an additional effect on the ecosystem.

Ideas with a high chance of success, by definition, are likely to find a way to be commercialised without government assistance. The evaluation found, through the regression analysis, that firms with existing customers for their idea had a high chance of success. There was also anecdotal evidence through interviews and free text responses that larger firms, for whom this idea was a new business venture, were more likely to fund the idea themselves without the grant. This means grants to larger firms, and of larger volumes of money, may have a lower level of additionality.

The current guidelines and assessment process does not explicitly take likelihood of success without the grant into consideration.

Viewing Ignite Ideas as an investment portfolio enables considered risk-taking

Viewing the investments as a portfolio allows the program to be more nuanced in its definition of success, and therefore in its selection process. It means each project can be assessed for its own merit, and then all shortlisted projects considered for the extent to which they meet the governments' objectives collectively. This would enable a mix of higher and lower risk investments, and other objectives such as regional and gender outcomes. These considerations are listed to the right.

Portfolio considerations:

- **Regional and urban mix of investments:** There could be value in weighting the regional applicants more in the portfolio, as they were just as successful as metro recipients, and flow-on effects are greater in regional areas.
- **Female founders:** The evaluation found firms with women in the founding team were more likely to be successful, although it is unclear why these firms are more successful. This may require further exploration.
- **Ability to self-fund:** Firms receiving Tier 2 funds were more likely to be using Ignite Ideas as a smaller component of their project funding and more able to use the firms' capital/cashflow if the grant was not available. This suggests Ignite Ideas is less critical to the project going ahead when the firm is able to co-contribute up to \$250,000. This suggests that the change to eligibility is not likely to have a major impact on the overall level of commercialisation activity in Queensland, although it might lower the return to the Ignite Ideas 'portfolio'.

Contingent loans may be appropriate for firms with demonstrated success

As already described, it is appropriate for Ignite Ideas to move to funding firms with Tier 2-size grants only after the successful completion of a Tier 1 project. An extension of this may be to replace the Tier 2 grants with a contingent loan option. This would enable the Queensland Government to provide firms with larger volumes of funding with reduced risk. The repayment of the loan would be contingent on the firm achieving a pre-agreed level of revenue.

“Other than grants or investment, it would be great to have low cost or no cost loan options available similar to SheEO” – Ignite Ideas Recipient

Consideration 3: There may be a role for the program to connect recipients to other support

Ignite Ideas recipients commonly asked for mentors, networking, profile and influence in procurement.

Some, but not all, recipients would have liked more support

When asked 'Please provide any other suggestions you might have on how the Queensland Government can support you, or others, on the innovation journey', the most common responses were:

- **Access to mentors:** Many recipients felt they may have been more successful with the right advice and mentorship in addition to the funds.
- **Profile building:** Some recipients wanted greater exposure by the Queensland Government for their idea, particularly through the Minister and other communication campaigns.
- **Access and influence in government procurement:** Many recipients stated they had difficulty selling their product or service to Queensland Government departments.
- **Community building:** Some recipients stated they would have liked to have had a greater connection to other Ignite Ideas recipients, perhaps through group meetings with government representatives.

It should be noted that in interviews, many recipients were perfectly happy with the receipt of funds only, particularly those from more established businesses.

It may be that businesses deemed to have lower business acumen or experience in the assessment stage may have the option of access to mentors or advisors, and a lower cash amount.

Concerted effort to engender Ignite Ideas recipients into the innovation community may result in greater spillover effects.

"Please provide any other suggestions you might have on how the Queensland Government can support you, or others, on the innovation journey"



"Our experience was that we also needed advice, access to people that could point us in the direction of next steps and perhaps additional funding sources/programs. We did not allocate funds to these areas from the grant as we were focused on the product itself which in hindsight was a mistake."

"I think the grant should come with a mentor or support network - i.e. a previous recipient and/or some connection to an accelerator program... We have now surrounded ourselves with a lot more mentors and advisors, but this would have been ideal earlier in the piece. One thing that has been difficult at the beginning is identifying the right advisors."

"... Specifically, there is a gap for later stage Founders who are in growth mode to access this next level of expertise, from those who've had significant success with their own startup and/or as department leads for leading startups across the globe."

"I may have missed this, but the organisations that are successful with the grant belong to a 'group'. I would love to meet more often with this group and the Qld Govt to share ideas, listen to success stories and build a community around how we are all trying to create the next big thing in Queensland."

"Helping to make the procurement rules easier and to encourage Government Departments to engage with more local startups would be beneficial as Government is a major employer in the State."

"It would be good to have a show and tell event to Queensland Government departments. I found there was hesitation from QLD government departments to engage us directly, despite having other Australian and US government departments purchase [our product]"



Consideration 4: The right data to track success needs to be collected to inform portfolio decisions

With the additional changes made in Round 5, it is critical to measure the right factors to determine success.

The ideal way to measure additionality is through a randomised control trial, but even this has measurement challenges

To truly measure the effect of the Ignite Ideas grant the applicants would be randomised into groups that received and did not receive the grant. This requires firms who miss out on the grant to be tracked. Unfortunately, it is difficult to compel firms who did not receive government funding to provide information.

To create accountability to report outcomes, an alternative approach is to use differential funding amounts. This would see all firms that met a minimum eligibility receive a randomised grant – some large some small – with the condition they must report their outcomes over the following three years.

While this would allow for better testing of the difference made by the grant, it would likely require a larger volume of funding. An additional advantage is that it would allow the effect of the size of the grant to be examined, but does pose a risk that many of the grants will be too small to make a difference to the success of the recipient. These are issues that are for future consideration if major changes are planned for the program.

Collecting the right data will assist in assessing if the round 5 changes have improved the program design

Currently, participants must report their outcomes through the acquittal process at approximately 12 months post receiving the grant. At this point, particularly depending on the stage of the idea at application, the firms may not have achieved great success. It is important to first understand whether or not the grant made a difference to the firm being able to continue or expedite progress on their idea, and secondly, the level of 'success' achieved by the idea over time.

Ideally, participants of the program would be contractually obligated to provide the following information annually, for five years post grant on:

- whether the project has continued and the stage of idea
- jobs created in the previous 12 months
- sales revenue in the previous 12 months
- profit created in the previous 12 months.

Where possible, applicants to the program should also be surveyed to provide the same information. Even with a small sample size, this may elicit some interesting information. For example, the 11% response rate for this evaluation has enabled robust and insightful analysis.

There may be scope to add the indicators required to other data collection mechanisms

It is worth exploring the possibility of adding the indicators listed above to existing surveys and collection tools run by the state government.

One option that is worth exploring is adding participation in Advance Queensland programs as an indicator in the Business Longitudinal Analysis Data Environment (BLADE) administered by the Department of Industry. BLADE data is only available with a 2 year lag, and currently has limited access. However, greater cooperation between governments on building a database that allows better analysis of what programs have been accessed, and the difference that they have made over time, would improve the evidence base for developing industry policy around the country.

6. Outcomes against Advance Queensland Framework

The programs have achieved almost all of their intended AQ objectives

The short term objectives have largely been achieved, and there is strong indication the longer term objectives are on track to being achieved.

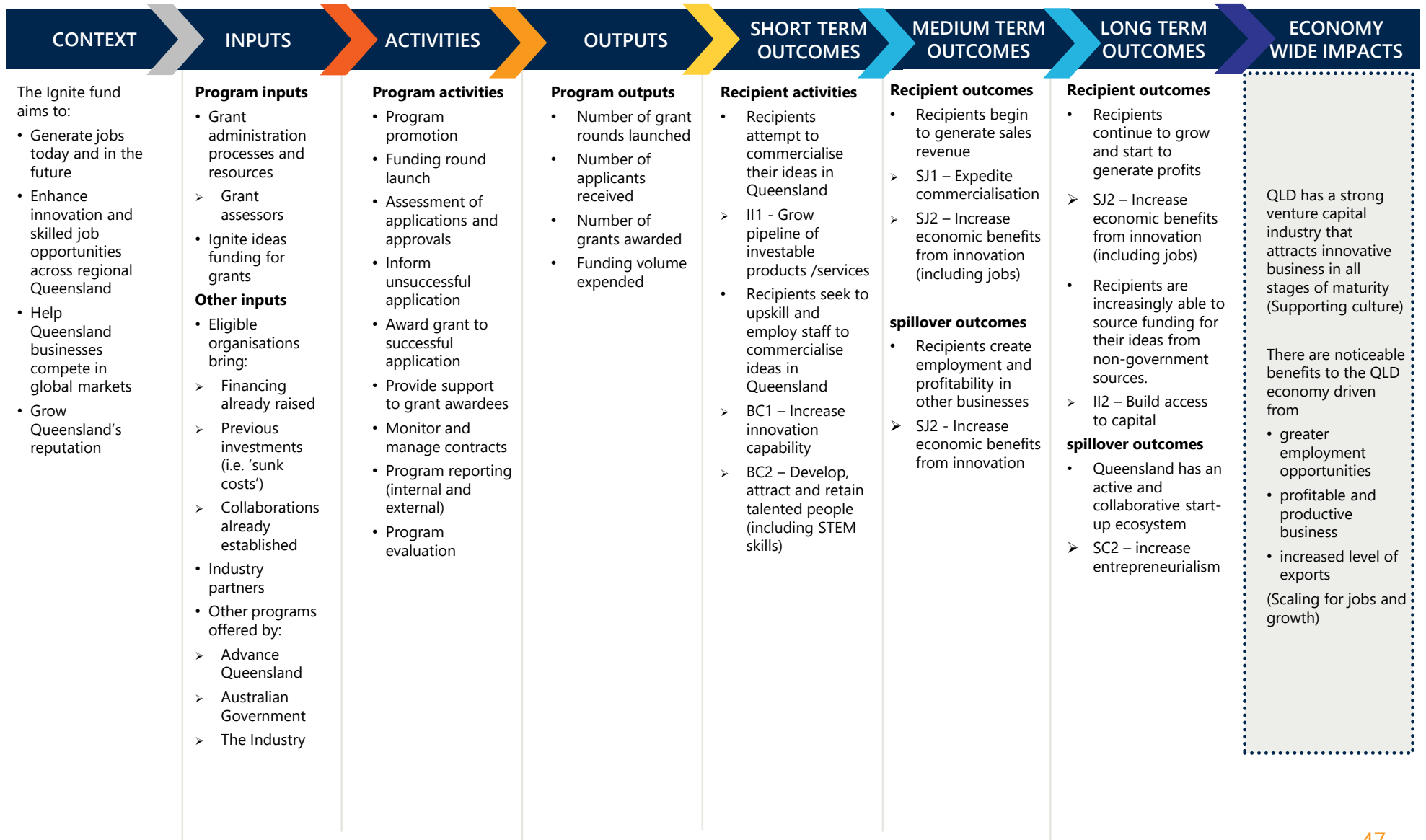
AQ STRATEGIES	AQ OBJECTIVES	PROGRAM INTENT	EVALUATION FINDINGS
Supporting culture	Increase innovation awareness and engagement	Ignite Ideas contributes to an active and collaborative start-up ecosystem	Half of all Ignite Ideas recipient respondents participated in another AQ program - similar to applicants (p. 37). Some stakeholders felt the grant was not connected with enough support (p. 42)
	Increase entrepreneurialism	Ignite Ideas contributes to entrepreneurialism culture	96% of Ignite Ideas recipient survey respondents felt the grant was contributing to the entrepreneurial culture in Queensland (p. 37)
Building capability	Increase innovation capability	Ignite Ideas recipients gain experience in commercialisation	Ignite Ideas contributed to capability indirectly, by allowing participants the opportunity to progress their idea, as it did not have an explicit focus on capability. 68% of recipients were able to progress their idea (p.24)
	Develop, attract and retain talent (incl. STEM)	Ignite Ideas recipients undertake their commercialisation venture in Queensland	86% of recipients identified as a startup (p. 27). Ignite Ideas has enabled 270 commercialisation ventures in Queensland (p. 11).
Increasing investment	Grow pipelines of investable products	Ignite Ideas generates new products and services that can attract investment	90% of recipients indicated Ignite Ideas has assisted them to discover/develop new products, services or processes (39% said it provided major assistance) (p. 34)
	Build access to capital	Ignite Ideas recipients are able to access additional funding (grants and investment)	37% of Ignite Ideas recipients indicated the grant assisted them to secure additional funding (p. 33). 69% of recipients said the grant assisted them to increase credibility when pitching to investors (p. 35)
Scale for jobs and growth	Expedite commercialisation	Ignite Ideas recipients are able to commercialise their ideas faster than non-recipients	Recipients were able to move their idea along the lifecycle faster than applicants, primarily as they were able to work full time and employ other people (p. 34)
	Increase economic benefits from commercialisation	Ignite Ideas recipients are able to generate jobs, revenue and profit	The median successful recipient of a Tier 1 grant made a \$25,000 profit after two years, and the median Tier 2 recipient made a \$148,000 profit after two years (p. 31). 59% of recipients generated new jobs in QLD (p. 24)

Indicates the extent to which the programs directly relate these objectives:

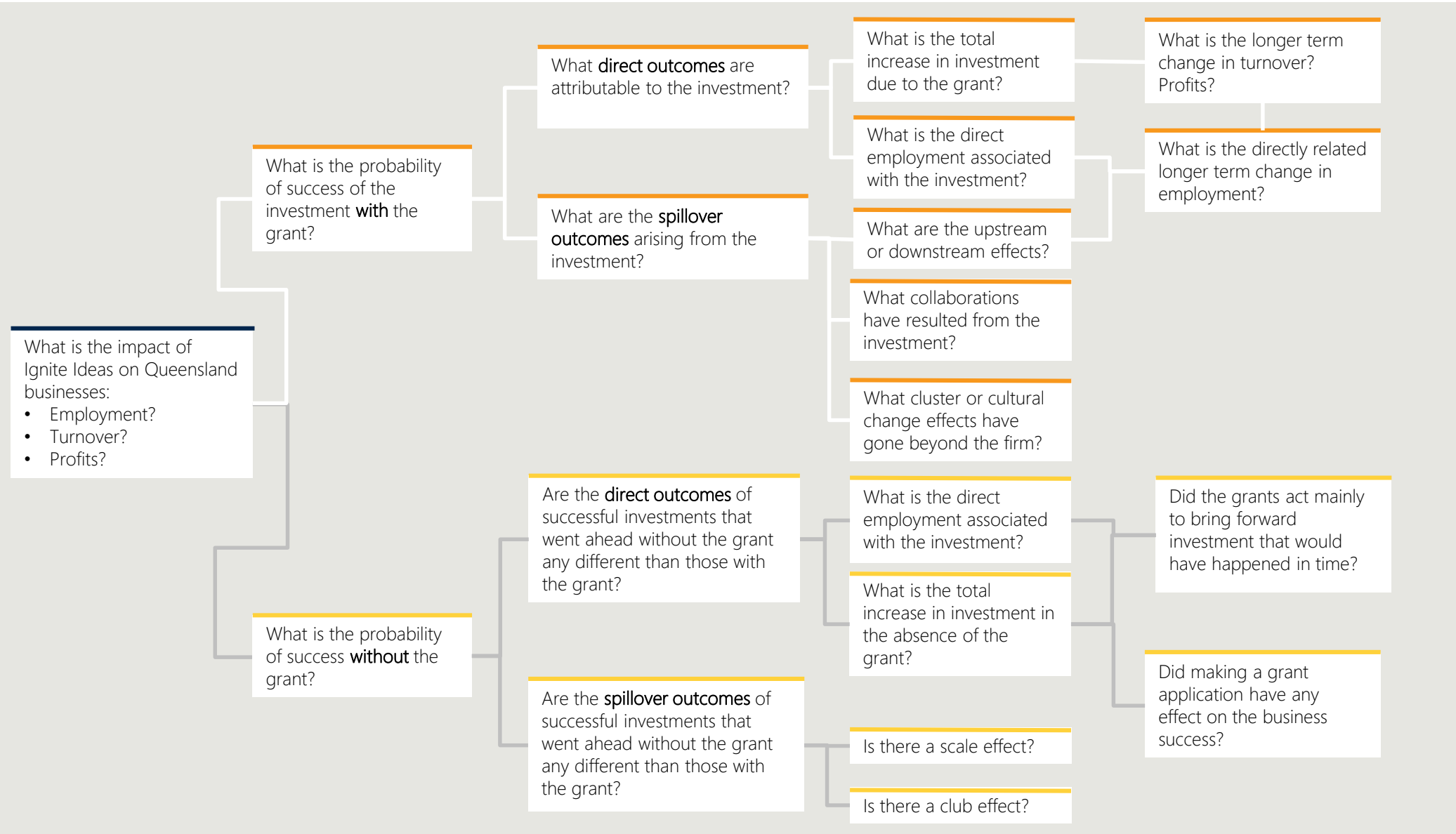
■ Short term outcomes □ Longer term outcomes

Appendix A – Evaluation methodology

The evaluation was guided by the program logic developed in the evaluation plan



A logic tree provided us with the key lines of enquiry to determine the effect of Ignite Ideas, over and above what would have happened anyway



The key lines of enquiry were supported by detailed research questions

<p>1</p> <p>Appropriateness Is this the right, and the best, thing to do to address the issue?</p>	<ul style="list-style-type: none"> • To what extent do stakeholders think Ignite Ideas is the best way to support commercialisation of innovation? • How does the grant compare to other options available, both nationally and internationally? • Are there other supports that are required to improve the success of commercialisation? • Is Ignite Ideas supporting the right businesses in terms of probability of success and access to funds? • What are the trends in the types of businesses that receive the grant? • Is Ignite Ideas supporting the right sectors? • To what extent is Ignite Ideas supporting women and Indigenous-led businesses? • To what extent is Ignite Ideas supporting businesses in regional Queensland? • To what extent is Ignite Ideas supporting businesses and ideas at the right stage of development?
<p>2</p> <p>Effectiveness Are the activities achieving their intended outcomes?</p>	<ul style="list-style-type: none"> • What proportion of, and to what extent have, the recipient businesses successfully commercialised their idea? • For businesses still early in their commercialisation journey, what is their probability of success? • What difference did the grant make to the success of these ideas? • What is the current and expected future revenue from this idea? • What share of the finance raised for the idea, including the grant funding, was allocated to employing more staff? Employing contract services? Staff training? • If contract services were used, where are they located? Could the services required have been sourced in Queensland? • To what extent have businesses employed more staff with specialised skills? • How has, or will, the firm's employment change(d) due to the success of their product in the market? • For recipients where success of the idea looks unlikely, what were the limiting factors? Could these have been foreseen and/or supported by government? • What are the comparative outcomes of firms that were close to being a recipient, but that missed out on the grant? • To what extent did the process of applying for the grant contribute to success of non-recipient firms (where success was achieved)?
<p>3</p> <p>Impact What broader outcomes have been achieved as a result?</p>	<ul style="list-style-type: none"> • What is the success rate, and consequent outcomes, of recipient firms relative to similar firms that did not receive the grant? • What is the value for money (return on investment) of the Ignite Ideas Fund? • To what extent has Ignite Ideas contributed to QLD's innovation and entrepreneurial reputation? • To what extent has Ignite Ideas contributed to the start-up sector in Queensland? • To what extent has Ignite Ideas led to increased employment in Queensland? • To what extent has Ignite Ideas leveraged funding for innovation? • To what extent has Ignite Ideas improved business outcomes (employment and profitability) for businesses led by Aboriginal and/or Torres Strait Islander Queenslanders, women, or located in regional areas? Including up and downstream?

Appendix B – Technical appendix

To add value Ignite Ideas must add to activity and not crowd out other sources of investment

A major concern with policies designed to stimulate innovative activity is that the government funding will simply replace private sector funding. When this happens, the program does not increase the overall level of economic activity, even if the investments supported by the program are successful.

In this evaluation, we determine 'success' as achieving one or more of the following:

- An increase in revenue,
- An increase in employment, or value of work outsourced,
- An increase in profit, and/or
- Progression of the idea along the idea lifecycle.

When providing firms with a grant, two outcomes are possible:

- **The recipients of the grant are no more successful than the applicants** – suggesting the grant did not have an impact.
- **The recipients are more successful than the applicants.** There are two possibilities here:
 - This simply reflects the prior higher probability of success of recipients, in which case the grant did not make a difference. There was no additionality.
 - The grant raised their probability of success. This is the desired outcome of the program- the grant had additionality.

Testing for additionality is not straightforward. The best approach is to compare the outcomes for groups that have the same characteristics and differ only in that one got the grant and one did not. Ignite Ideas recipients were selected on the basis of an assessment of their probability of success – hence the recipient group could be fundamentally different from the applicant group.

To the extent that this selection process was accurate, then the recipients have a higher probability of being successful relative to the applicants. This means that a simple comparison of the outcomes of the two groups does not tell us if their differences in outcomes are due to the grant. This appendix explains the approach we took to addressing this question of additionality.

Nous utilised three analytical tools to develop our findings

The survey results were analysed sequentially, with three different analytical tools. Each tool serves a different purpose, as outlined below.

Comparison Analysis

Comparing outcomes of different groups

The starting point for the analysis is a simple comparison between the recipient and applicant samples. This looked at differences in the outcomes, perceptions and other responses across the two samples. To the extent that the selection process was able to distinguish characteristics that raised the probability of success, these groups will be fundamentally different. Given this, even if there are statistically significant differences, they cannot be attributed to the receipt of the grant. This analysis is used in pages 24 - 27, and throughout the report for simple comparisons.

Benefits:

- Simple and easy to understand
- Allows understanding of shape of the data
- Provides insights for further analysis

Limitations:

- No ability to infer causation

1

Binomial maximum likelihood regression

Assessing the change in the probability of outcomes

A technical analytical tool that is able to infer strong relationships between variables and outcomes of interest. This regression technique determines the odds of success/failure of each firm dependent on the explanatory variables, i.e. Firm X with Y characteristics has a Z% chance of success. This analysis is used in page 28 where we assess additionality.

Benefits:

- Powerful analytical tool that estimates the difference in outcomes due to each variable – in this case the grant
- Determines the probability of success for a firm

Limitations:

- Treats success as a binary variable (it did or did not occur)
- How well it measures the influence of the grant depends on how well the other variables controlled for the fundamental differences between the two samples

2

Log linear multiple regression

Assessing the change in the magnitude of outcomes

Linear regressions are a powerful and simple analytical tool to determine the impact of key variables on outcomes. Nous used this analysis to complement the findings from the logistic regression. This regression discerns the expected quantity of success, however it is very sensitive to the distributions of data. For this reason, it is best used to describe the outcomes for the median firm. This analysis is used in page 31.

Benefits:

- Powerful analytical tool that estimates the difference in outcomes due to one variable – in this case the grant
- Estimates the magnitude of the effect of a variable on the outcomes

Limitations:

- Is sensitive to the distribution of data
- Difficult to interpret the coefficients, as it is non-linear in impact

3

Data Transformations

There was limited amount of data cleaning required due to the design of the survey

Due to the design of the survey the data output required a minimal amount of data cleaning. Cleaning involved removing non-completed responses, providing numeric transformations for categorical variables, and removing responses with unreliable datapoints (for example, where the respondent reported profits higher than their reported revenue).

It is important to capture the exponential nature to success factors like revenue and profit, as some firms experience exceptionally high level of success. A natural log transformation of the quantitative estimates of revenue and profit were applied as a few firms had experienced a very good outcome, which is often the case with new innovations. The log transformation gave a roughly normal distribution of the (non-zero) quantitative data. Outliers ($sd > 3$) were removed from the dataset only if they impacted the assumptions of the regression. This was only one observation on numbers employed, which fell well outside the range, and may well have been a response error.

Binary data transformation were utilised for the logistic regression (maximum likelihood)

Given the distribution of success was made up of a fairly high share of firms with zero revenue or profits, then a log normal distribution of outcomes for those firms making revenue or profits the analysis was undertaken in two parts. The first part was to undertake a logistic regression to analysis the likelihood of success of firms. To do this the data needed to be transformed into binary variables of success and unsuccessful. To maximise the effectiveness of the analysis a low level threshold was used to determine if a firm was "successful. The threshold are listed in the table below.

Binary transformation thresholds for logistic regression analysis

Revenue	Profit	Idea Progression	Job created in QLD	Jobs outsourced in QLD
Current revenue greater then \$1,000	Current profit greater then \$1,000	From time of application progressed at least 1 stage forward	Created at least 1 FTE since application	Outsourced work to the value greater then \$1,000

Comparative analysis provided the initial examination of the data

It is a powerful tool to identify differences in populations

Within the evaluation report, comparative analysis tools are frequently used. It is a simple and powerful tool to examine characteristics across two or more groups. For example, looking at the success rates across recipients and applicant firms, it is clear that there is a significant difference between these two groups for all characteristics expect perhaps expected future profits.

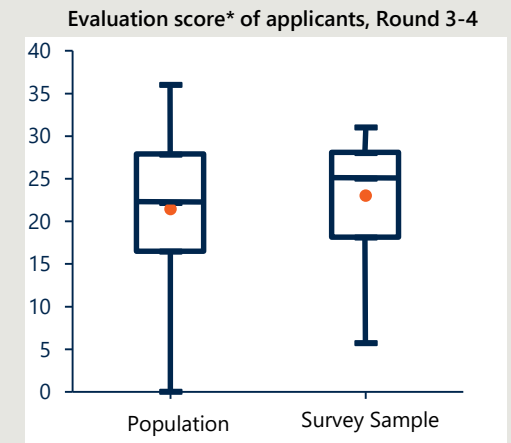
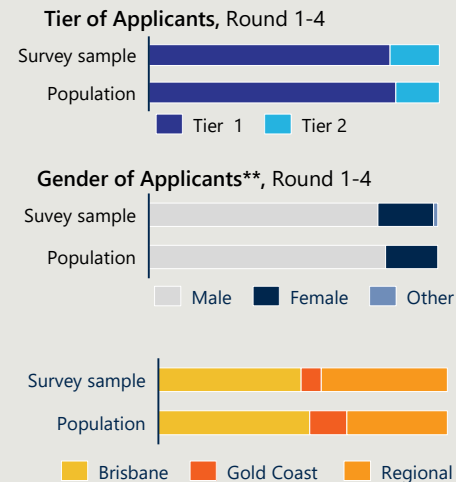
For example, there is a 97.2% chance that the recipient and applicant firm samples are from statistically different populations when it comes to generating profits.

Comparative analysis provides easy to understand visuals

To determine the representativeness of a sample, it must be compared to the population statistics to determine if the sample is biased. This is important as population inferences cannot be drawn from biased samples.

Comparing characteristics between the population and the sample can help identify biases. As can be seen in the distributions, there is slight over-representativeness of regional firms within the sample, and a shorter tails in the evaluation score distribution. But overall the distribution across these characteristics is very similar.

Success measures	Percentage of successful Recipients	Percentage of successful Applicants	Statistical Difference (p-value)
Idea Progression	68%	38%	0.000017***
Revenue	Current	45%	0.00014***
	Projected future ¹	62%	0.0011**
Profit	Current	17%	0.0022***
	Projected future ¹	43%	0.028*
Jobs (in Qld)	Internal	28%	0.000063***
	Outsourced	24%	1.5 e-8***



Due to the “twin peaks” of the data a two staged analysis was required to assess additionality

There is a high proportion of firms with zero profit or revenue due to the high barrier to success.

When examining the data of respondent firms, there are two peaks in the distribution, firms with no success and firms with a moderate level of success. Data with a peak at zero is known as a zero inflated distribution.

With any innovative idea there is a significant barrier to first generating revenue - it requires having a product or service ready to sell and having customers willing to buy. Once these firms have entered the market, other mechanisms such as price competitiveness and quality help determine the quantity of revenue generated.

Bimodal distributions violate the normality assumption of linear regression models

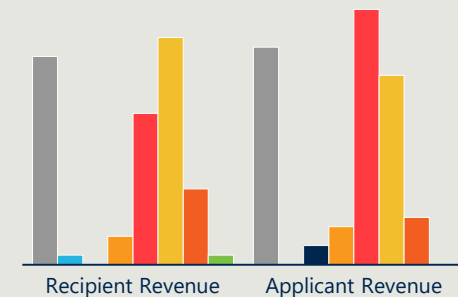
Normal linear regression models work under the assumption the data forms a “normal” bell curve shape. This normal distribution assumption underpins the regression technique providing unbiased and consistent estimates of the coefficients. Statistical analysis on this data requires a form of transformation that produces a normal distribution, while still being representative of the data. The exponential shape of outcomes for firms that were successful can be approximated by a normal distribution using a log normal transformation.

A two staged model is necessary to accurately model zero-inflation distributions

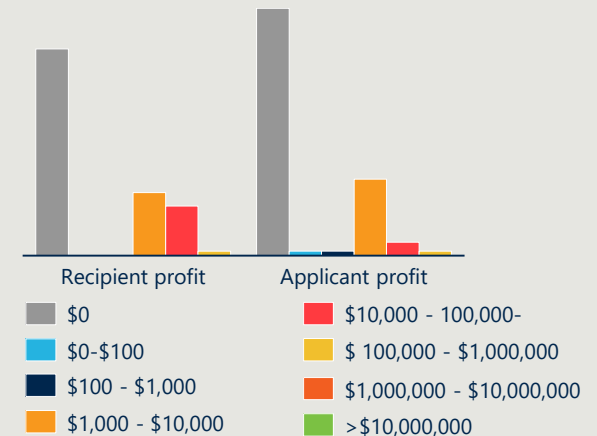
To accurately model zero-inflation distribution the analysis is broken into two stages. First is the determine the likelihood of overcoming the initial hurdle at “zero”. To model this the data is transformed into a binary logistic regression, to represent the likelihood of a firm being able to enter the market. The next stage is to perform a linear regression on the log transformed data to model the difference between the somewhat successful and the highly successful.

By breaking the regression into two stages the modelling can derive powerful insights while still being representative of the dataset.

Distribution of revenue for recipients and applicants to Ignite Ideas, 2016-2018, log scale



Distribution of profit for recipients and applicants to Ignite Ideas, 2016-2018, log scale



The first stage analysis controlled for other characteristics that should have affected the probability of success

We started from the assumption the two groups of firms had a different pre-grant probability of success. To determine the impact of the grant alone on success, we needed to understand the other factors that might influence the probability of success.

In our first stage analysis we measured success as a binary variable. This means we only measured if firms did, or did not, achieve 'success' across our four measures (revenue, employment, profit, idea progression).

We then used a regression model to understand how the following factors impacted the probability of success:

- The number of **FTE employees** working on the project,
- Whether the firm had **customers** for the idea at application,
- **Stage of the idea** at application,
- **Years since** the application*,
- If the **project was the basis of the entire business** or a new **business venture**.

Accounting for these variables aimed to control for any systematic differences in the probability of success of the firms. We found that firms having customers was the only variable that was a significant predictor of success. The outcomes of the model showed that, when accounting for these variables, the Ignite Ideas grant made a significant difference to the probability of success for all four measures of success.

The median data point is used to highlight the impact of the grant as this is the most reliant point of the regression.

	Probability of success of median firm after two years		
	Without grant	With grant	Difference
Progression along the idea lifecycle	35%	67%	32%
Generating revenue	27%	57%	30%
Generating profit	5%	14%	9%
Creating jobs in Queensland	13%	45%	32%
Outsourcing work to another Queensland firm	21%	63%	37%

Based on the survey data collected, the **median firm** that applies for the Ignite Ideas grant has the following characteristics;

- Has 2.0 FTE of staff working on the project
- Applying for a Tier 1 grant
- The project is the basis of their entire business (not a additional business venture) and;
- Did not have customers at the time of application

The second stage analysis examined the quantum effect of the grant

In our second stage analysis we measure the quantum of successful firms as a **continuous variable**. For this reason idea progression can not be part of this analysis as a categorical value at non-discreet intervals. For firms we measured their revenue, profit and outsourced employment in \$AUD, and firm employment with FTE.

The regression used the same explanatory variables as the previous binary regression.

To transform this data into a normal distribution, firms that were unsuccessful have been omitted from the dataset, and to account for the exponential nature of the successful variables, the data has transformed by a natural log (ln).

The grant was not a significant predictor of the quantum of success across all measures

The found that the grant was a significant predictor for revenue and profit, but not for employment. Receiving the grant may have an impact to the likelihood of creating additional employment, it is not a predictor of how many jobs will be created.

This is consistent with the theory of zero-inflation models, as there are different mechanisms impacting those firms at zero and above zero.

	Median Tier 1 firm*		
	Without grant	With grant	Difference
Expected Revenue*	\$33,000	\$71,000	\$38,000
Expected Profit**	\$9,000	\$25,000	\$16,000

	Median Tier 2 firm***		
	Without grant	With grant	Difference
Expected Revenue	\$161,000	\$345,000	\$156,000
Expected Profit	\$54,000	\$148,000	\$94,000

*The median tier 1 firm has 2.0 FTE of staff working on the project, applied at the seed and development stage of the idea lifecycle, the project is the basis of their entire business (not a additional business venture) and did not have customers at the time of application.

** Median tier 2 firm has the same characteristics as tier 1 firm expect for it had 6 FTE of staff working on the project



About Nous

Nous is the largest Australian-founded management consulting firm with over 400 staff across Australia and the UK.

We partner with leaders to shape world-class businesses, effective government and empowered communities.

400

PEOPLE

56

PRINCIPALS

9

LOCATIONS

2

COUNTRIES