

Sustainability of Startups in Australia: a Policy-Maker Perspective.

In cooperation with PwC Chair in Digital Economy.

FULL REPORT

Loïc Tassinari

June 2016

Master's Project (Thesis) Supervisor: Shahid Md Shahiduzzaman



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Table of Contents

Executive Summary	4
1.Proposal and Background Summary	5
1.1 Introduction to Startups in Australia	5
1.2 Literature Review	6
1.2.1 Startup Environment and Ecosystem.....	6
1.2.2 Growth Sustainability	7
1.2.3 Policy-Makers.....	7
1.3 Project Proposal	8
1.3.1 Knowledge Gaps	8
1.3.2 Project Structure	8
2.Analysis	9
2.1 Introduction.....	9
2.1.1 Methodology.....	9
2.1.2 Data Collection	9
2.2 First Study: Australian Startup Growth Pattern	10
2.2.1 Background	10
2.2.2 Sample Definition	10
2.2.3 Results	10
2.3 Second Study: Conditions of Startup Sustainability.....	13
2.3.1 Background	13
2.3.2 Sample Definition	14
2.2.3 Results	15
2.4 Third Study: Policy-Makers' Startup Focus.....	17
2.4.1 Background	17
2.4.2 Sample Definition	17
2.4.3 Results	17
2.5 Key Findings.....	20
3.Recommendations	21
3.1 Introduction to Australian Startup Policies	21
3.1.1 Macro-Level	21

3.1.2 Meso-Level.....	22
3.1.3 Micro-Level.....	22
3.2 First Recommendation: Entrepreneur’s Programme Amendment (Micro-Level).....	23
3.2.1 Overview	23
3.2.2 Eligibility Amendments	23
3.2.3 Application Amendments	25
3.3 Second Recommendation: Startup Ecosystem Improvements (Meso-Level)	27
3.3.1 Access to Finance	27
3.3.2 Access to Labour	28
3.3.3 Access to Network	29
3.3.4 Access to Mentoring.....	29
3.4 Overall Limitations and Future Research Directions.....	30
3.4.1 Data Collection	30
3.4.2 First Study	31
3.4.3 Second Study.....	31
3.4.4 Project Approach.....	31
3.5 Conclusion.....	32
Appendices	33
Appendix A: Interview Questions	33
Appendix B: First Study Results (High-Potential Startups Only)	37
Appendix C: Entrepreneur’s Programme Application	38
Acknowledgment.....	40
References	40

List of Figures

Figure 1: New Venture Creation Framework	7
Figure 2: Tree Diagram of Australian Startups' Growth Path Sequences (Revenue Based)	11
Figure 3: Key Elements of the New Firm Creation Process	13
Figure 4: Revised Global Entrepreneurship Monitor Conceptual Model	13
Figure 5: Level of Analysis in Entrepreneurship Support.....	21
Figure 6: Growth-Trigger Point Illustration	24
Figure 7: Policy-Maker Scope to Enable Startup Sustainability at the Meso-Level.....	27
Figure 8: Phases of Small Business Development.....	29

List of Graphs

Graph 1: Startups per Million of Population, Example of Tech Startups	5
Graph 2: Australian Firms' Survival Rate after Three Years of Creation	6
Graph 3: Australian Firms' Survival Rate after Three Years of Creation, per Industry, Year 2015	6
Graph 4: Distribution per Industries, 3-Year Growth Firms v. Overall Sample	12
Graph 5: Revenue Distribution, 3-Year Growth Firms, Overall Startups v. High-Potential Startups	12
Graph 6: Distribution of Founder(s)' Combined Years of Industry Experience.....	15
Graph 7: Share of Startups that Benefited from Government Support.....	18
Graph 8: Distribution per Industries of Startups that Benefited from Government Support	18
Graph 9: Reasons for Startups Discontinuation.....	19
Graph 10: Share of Type of Help Startups Benefited from Government Support	19
Graph 11: Share of Discontinued Startups per Support Received	19
Graph 12: Domestic Venture Capital Investment per Capita (AUD).....	28

List of Tables

Table 1: Sample Size Summary	9
Table 2: Regression Results	15
Table 3: Key Findings Summary.....	20
Table 4: Entrepreneur Programme's Subprograms, Support and Eligibility	23
Table 5: Summary of Entrepreneur Programme's Eligibility Amendments v. Actuals.....	25
Table 6: Recommendation Summary	30

Executive Summary

Startups represent key drivers to fuel Australia's shift toward a sustainable and knowledge-intensive economy. Yet, Australian startups face sustainability issues. They have low-survival rates and face difficulty to find skilled employees or raise investment. This report, written in collaboration with PwC Chair in Digital Economy, analyses up to two thousand Australian startups to help policy-makers (federal and state governments) make informed decisions to tackle obstacles to startup sustainability.

This report's findings show Australian startups experience greater difficulty to achieve three years of consecutive growth, or to revive from downturns, compared to other developed economies (*first study, section 2.2*). Key conditions to achieve such sustainability are found to be linked with initial investment in resources (asset, labour) and founder(s) previous industry experience (*second study, section 2.3*). Australian policy-makers play a key role in enabling these conditions, and are currently focusing on the right issues by supporting high-potential startups (*third study, section 2.4*). Yet, policy-makers' support has room for improvement and suffers from inefficiencies as former attractive industries keep being over-subsidised (*third study*).

On a micro-level, the federal government is recommended to amend the "Entrepreneur's Programme" eligibility requirements (changing revenue threshold and list of attractive industries, adding growth pattern and years of industry experience), and application processes (proactive v. reactive), to more efficiently support high-potential startups (*first recommendation, section 3.2*). On a meso-level, Australian policy-makers are recommended to improve: (a) access to finance, through a public and venture-capital scheme; (b) access to labour, by encouraging technical skills at university; (c) access to network, through a national incubator coordination; and (d) access to mentoring from private sectors over policy-maker's punctual advice (*second recommendation, section 3.3*). As a result, Australian startups will be able to take advantage of their ecosystem and environment to sustain growth, and use more efficiently policy-makers' micro-level supports.

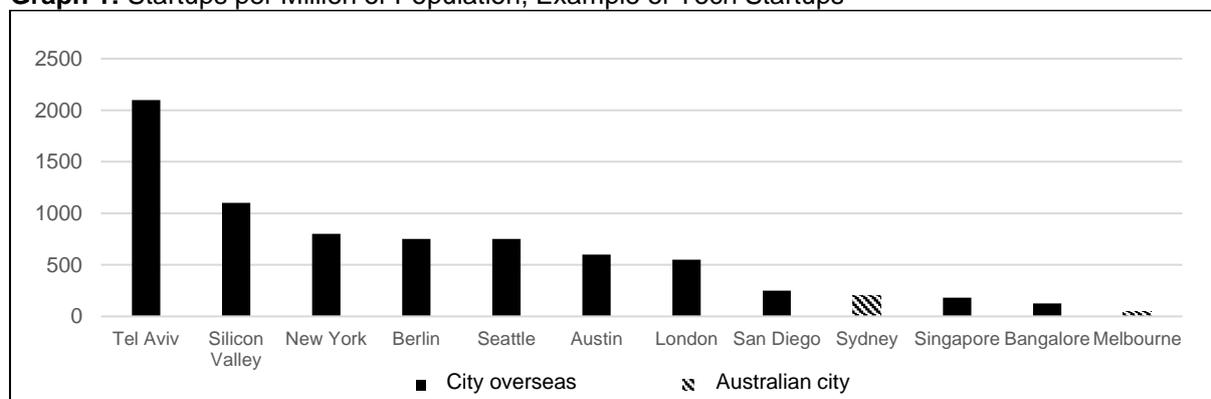
1. Proposal and Background Summary

1.1 Introduction to Startups in Australia

Australia is shifting from a primary-based (mining-focused) economy, to a sustainable and knowledge-intensive economy (Australian Government, 2015a; Euromonitor International, 2016). Policy-makers are consequently seeking ways to enable new drivers of economic growth, to improve socio-economic conditions, and increase government sources of revenue – augment tax collections and reduce welfare cost imbalances from job destruction in primary industries that gained in productivity (Australian Government, 2015a; Davidsson, Achtenhagen, & Naldi, 2010).

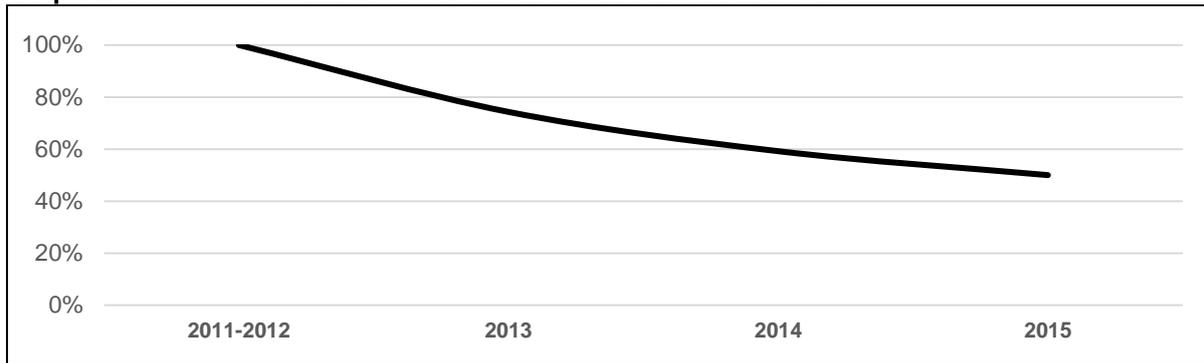
Startups, as small young firms with growth potential, represent an opportunity for policy-makers to support alternative drivers of economic growth (Mason & Brown, 2013). By introducing innovative products that disrupt traditional industries, startups increase overall productivity and create the foundation for new jobs (Brñnback, Carsrud, & Kiviluoto, 2014; NESTA, 2009; PwC, 2013; StartupAUS, 2015). Although startups represent a small share (6%) among the 2.3 million registered businesses in Australia as of 2016, high-technology (tech) startups, alone, are forecasted to represent up to 4% of Australia’s GDP by 2033 and to employ half a million people (ASIC, 2016; PwC, 2013; Startups in Australia: From lucky to plucky, 2016). In Australia, however, few startups are founded (Graph 1), and many suffer from growth obstacles (*symptoms of the problem*). Australian startups have low survival rates spread out across industries (Graphs 2 and 3); low collaboration within a culture of fear of failure; scarce availabilities of skilled employees; or experience difficulty in raising investment (Australian Government, 2014; PwC, 2013; StartupAUS, 2015). When startups are very successful, however, they tend to leave Australia and relocate their headquarters overseas (StartupAUS, 2015). As a result, Australian startups suffer from sustainability issues, facing difficulties to develop and/or prosper (*actual problem*).

Graph 1: Startups per Million of Population, Example of Tech Startups



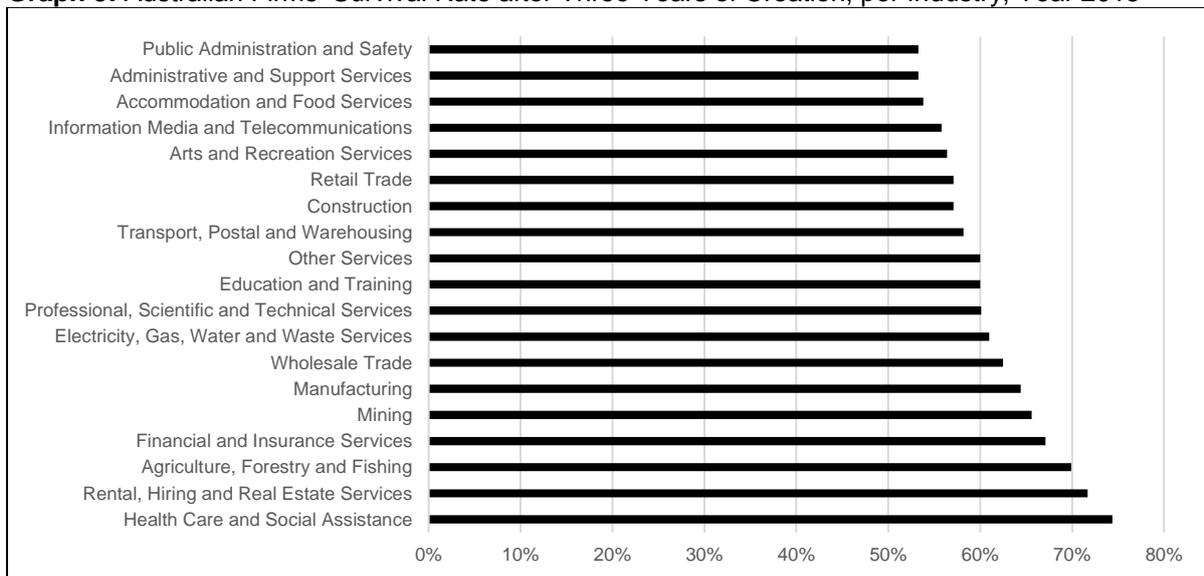
Note. Source from Startup Muster (2015).

Graph 2: Australian Firms' Survival Rate after Three Years of Creation



Note. Source from Australian Bureau of Statistics (2016).

Graph 3: Australian Firms' Survival Rate after Three Years of Creation, per Industry, Year 2015



Note. Source from Australian Bureau of Statistics (2016).

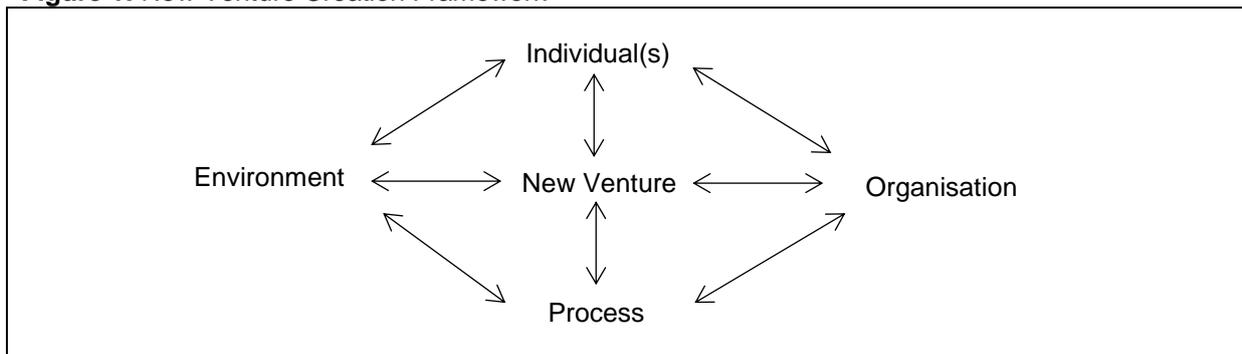
1.2 Literature Review

1.2.1 Startup Environment and Ecosystem

The development of startups relies on several components (Figure 1). The education and previous industry experience of startup founders increases their ability to understand marketplaces and bring new clients (Davidsson, Steffens, Gordon, Garonne, & Senyard, 2009). Yet, founders are also influenced by broader social and cultural contexts – entrepreneurship is often not perceived as a good career choice in Australia (high-risk aversion) (Kelley, Herrington, & Singer, 2016; Spike Innovation, 2015). To bootstrap innovative projects, startups require skilled workforces, but might be forced to outsource them from overseas if they cannot find them locally. These skills are rare, half of the software and application programmers working in Australia were, for instance, born overseas (Australian Government, 2015a; Startup Muster, 2015). Startups tend to have high development costs in their first years and need, accordingly, easy access to finance. Yet, it is perceived in Australia as one of the biggest challenge for entrepreneurs – two third need

additional funding to survive another year (Brñback, Carsrud, & Kiviluoto, 2014; Startup Muster, 2015). Successful startups are also likely to develop in geographic clusters (ecosystems), as well as incubators (helping projects to come to life), accelerators (preparing commercialisation), or startup hubs, where entrepreneurs can collaborate and be mentored (Davidsson, Achtenhagen, & Naldi, 2010; Kruger & Cacioppe, 2014; PwC, 2013; StartupAUS, 2015).

Figure 1: New Venture Creation Framework



Note. Adapted with minor change from Gartner (1985). Individual(s) include founder and startup's team. Organisation includes type of firm and strategy followed. Process includes the role of the entrepreneur. Environment includes access to finance, labour, and macro-economic conditions.

1.2.2 Growth Sustainability

Most firms start, live and die small (Cooper, Woo, & Dunkelberg, 1989). Startups that sustain growth tend to be found in growing industries, and to have: growth-commitment strategies; good business practices (unique value proposition); efficient human resources as firms often cannot hire as fast as they grow; digital technologies; and abilities to manage downturns to strengthen their sustainability as growth is often not linear (Brñback, Carsrud, & Kiviluoto, 2014; Davidsson & Delmar, 2006; Davila, Foster, He, & Shimizu, 2015; Hambrick & Crozier, 1985; Kangasharju, 2000; Simes, O'Mahony, & Lyster, 2013). Yet, high growth comes with internal challenges threatening startups' sustainability, such as: a sense of infallibility because of success; employee's burnout as job pressure quickly increases; a short time to operationally cope with growth; and organisational disruptions (Hambrick & Crozier, 1985; Mount, Zinger, & Forsyth, 1993).

1.2.3 Policy-Makers

Regulations stimulate startup ecosystems and environment (macroeconomic conditions and availability of suppliers, workforces, or funds), however, Australian policies are blamed for having low support and relevance to startups (Brñback, Carsrud, & Kiviluoto, 2014; Kelley, Herrington, & Singer, 2016; StartupAUS, 2015). The difficulty for policy-makers arises from attempting to balance between too much support and too little (Brñback, Carsrud, & Kiviluoto, 2014; Mason & Brown, 2013; PwC, 2013). Additionally, policy-makers

and entrepreneurs have contradictory views on growth. Policy-makers are interested in growth in employment to decrease welfare costs, whereas entrepreneurs focus on growth in revenue as employees in early years are seen as costly (Brñnback, Carsrud, & Kiviluoto, 2014; Davidsson & Wiklund, 2000). Policy-makers also have to prioritise which type of startups to support. High-potential startups have higher socio-economic outcomes than small firms that are less innovative, however, small firms employ overall more people, which might influence the nature of the policies developed (Mason & Brown, 2013; Shane, 2009). Small and Medium Enterprises (SMEs) in Australia employ, for instance, up to 70% of Australia's private-sector workforce (Simes, O'Mahony, & Lyster, 2013). Furthermore, as new firms turn profitable in average seven to nine years after their creation, policies require long-term views (Shane, 2008).

1.3 Project Proposal

1.3.1 Knowledge Gaps

The literature shows extensive research on startup sustainability, however, most studies are based on the United States or Europe, and tend to focus on small firms rather than actual startups. Several recommendations have also been made to Australian policy-makers, however, they tend to focus on tech startups rather than startups across all industries.

1.3.2 Project Structure

This report is written in collaboration with PwC Chair in Digital Economy at Queensland University of Technology (QUT), which produces policy-orientated reports to identify emerging opportunities to lead Australia's economic and employment growth (PwC Chair in Digital Economy, 2015). This report will fill the knowledge gap identified in the literature by studying Australian startups' sustainability across all industries, and recommend actionable solutions to policy-makers, guided by three research objectives (RO):

RO1: How do Australian startups grow toward sustainability?

RO2: What are Australian startups' conditions to achieve sustainability?

RO3: What are Australian policy-makers' actions and focus to support startup sustainability?

Firstly, Australian startups' growth will be analysed in depth (section 2), based on key concepts from the literature (section 1), to secondly tailor recommendations to Australian policy-makers (section 3), including insights for future researches.

2. Analysis

2.1 Introduction

2.1.1 Methodology

The analysis is performed in three studies from secondary research to answer the research objectives. Firstly, the growth patterns of startups in Australia is compared to other developed economies. Secondly, a regression analysis defines Australian startups' conditions to achieve sustainability. Lastly, exploratory research assesses Australian policy-makers' performance in enabling startup sustainability.

2.1.2 Data Collection

The Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) at QUT has surveyed more than two thousand Australian startups, representing Australia's largest research project on the matter (CAUSEE, 2016; Gruenhagen, et al., 2016). As the study is cross-sectional and longitudinal – five waves of data collected between 2007 and 2013 – the development of a same startup can be followed over time (Gruenhagen, et al., 2016). Data was collected from 50-minute phone interviews on a random-sample basis, therefore likely generalizable to the whole Australian startup population (Gruenhagen, et al., 2016). From judgement sampling, CAUSEE also defined startups as high-potential based on their growth-orientation mindset, technological sophistication, and development in a growing industry (Gruenhagen, et al., 2016). As per the different methodology requirements detailed in each sections, the three studies use parts of the CAUSEE dataset, and have, accordingly, different sample sizes (Table 1).

Table 1: Sample Size Summary

Study	Wave	Total Sample	Eligible Sample (n=) (% of Total Sample)
Growth Pattern (RO1)	Wave 1 to Wave 5	1,998	173 (8.7%)
Sustainability Conditions (RO2)	Wave 3*	786*	244 (31%)
Policy-Maker's Focus (RO3)	Wave 5	993	555** (56%)

Note. Source for total sample from: Gruenhagen, et al. (2016). Eligible sample definitions are found in sections 2.2.2, 2.3.2, and 2.4.2. * Based on Wave 3 sample despite a minor Wave 1 contribution. ** The eligible sample varies a little depending on some government-support questions asking for more details, which is indicated under each graph results in section 2.4.3.

2.2 First Study: Australian Startup Growth Pattern

RO1: How do Australian startups grow toward sustainability?

2.2.1 Background

Most startups do not follow a linear growth (Garnsey, Stam, & Heffernan, 2006). Instead, they tend to follow a “ladder-and-snake” path – they grow a year, decline the other, or vice versa (Davila, Foster, He, & Shimizu, 2015). The startups that are able to successfully sustain growth are able to learn from their mistakes – they efficiently manage downturns to ultimately strengthen their sustainability (Davila, Foster, He, & Shimizu, 2015).

Davila et al. (2015, p. 22) studied the growth path of 158,000 startups from ten developed economies (excluding Australia), and found that only one third managed to sustain three years of consecutive growth from their second year of existence. These results provide a significant base to compare with Australia. As a result, a very similar approach will be conducted to assess Australian startups’ performance.

To do this, the study will analyse the number of yearly growths or declines a sample of Australian startup faced over a three-year period from four years of revenue. An analysis of the frequency of occurrence will then provide a weight on each growth pattern. An investigation of the top performers will ultimately provide insights on the influence of external determinants toward startup sustainability.

2.2.2 Sample Definition

To be eligible to participate in the study, startups had to report a positive revenue over four years (Wave 1 to Wave 4) (exclusive conditions). In order to ensure startups were still sustainable after this four-year period, and to replicate the survivorship bias including only continuing firms from Davila et al.’s (2015) study, a further exclusive condition was added – startups had to report not being discontinued two years later at Wave 5.

2.2.3 Results

Australian startups roughly have similar growth patterns to other developed economies, consistent with Davila et al.’s (2015) findings. Yet, Australian startups have greater difficulties to sustain growth over time. Only 18.5% sustained three years of consecutive growth (Path 1, Figure 2), against 35.6% in Davila et al.’s (2015) study; and only 6.9% sustained growth despite a decline in the first period (Path 19), against 13% in the same study. As a result, Australian startups might also face greater difficulties in reviving from downturns.

Figure 2: Tree Diagram of Australian Startups' Growth Path Sequences (Revenue Based)

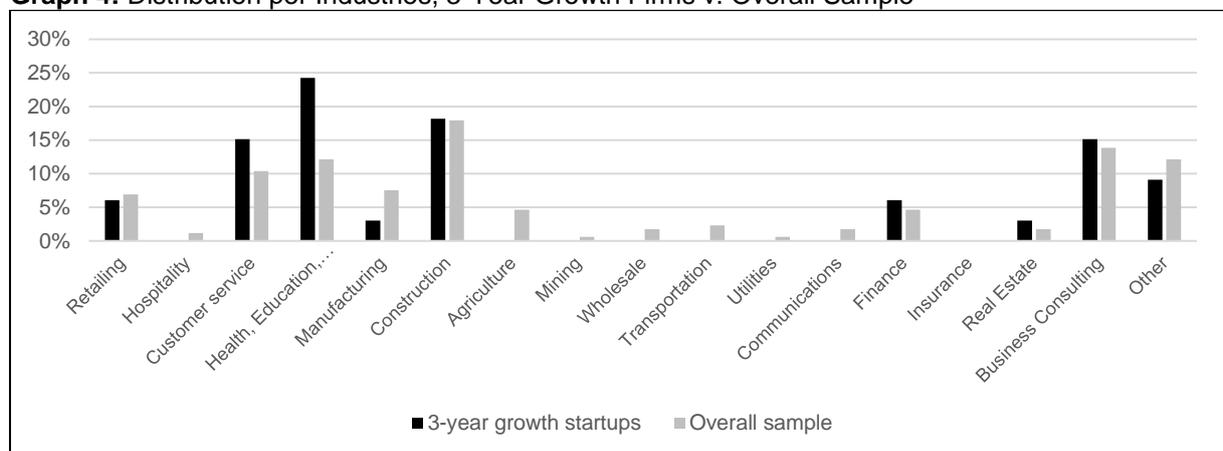
Path no.	Frequency T+1	Frequency T+2	Frequency T+3
1			18.5% (+)
2		38.7% (+)	2.3% (0)
3			17.9% (-)
4			5.2% (+)
5	67.6% (+)	8.1% (0)	1.7% (0)
6			1.2% (-)
7			13.3% (+)
8		20.8% (-)	2.3% (0)
9			5.2% (-)
10			1.2% (+)
11		2.3% (+)	0% (0)
12			1.2% (-)
13			0% (+)
14	6.9% (0)	1.7% (0)	0.6% (0)
15			1.2% (-)
16			1.2% (+)
17		2.9% (-)	0.6% (0)
18			1.2% (-)
19			6.9% (+)
20		15% (+)	2.3% (0)
21			5.8% (-)
22			0.6% (+)
23	25.4% (-)	2.3% (0)	1.2% (0)
24			0.6% (-)
25			5.8% (+)
26		8.1% (-)	0.6% (0)
27			1.7% (-)
Total	100%	100%	100%

Note. n=173. (+) = growth, (0) = stable, (-) = decline. Year T=2007 (Wave 1). Reading example: 67.6% startups grew on T+1, 38.7% grew two years in a row, 18.5% grew three years in a row (Path 1). The total is subject to round results.

When redoing the study by only taking into account high-potential startups (n=38), the share of firms that achieved three years of consecutive growth raised to 26.3%, against 18.5% from the overall sample (Appendix B). This result confirms high-potential startups have capabilities to sustain growth over time, and should, accordingly, be policy-makers' primary focus (Mason & Brown, 2013).

Among the 33 (18.5% out of the sample) startups achieving three years of consecutive growth, particularities emerge compared to the overall sample. Startups developing, for instance, in the "Health, Education, Social Services," or "Finance" industries are more likely to sustain growth (Graph 4). As these industries are growing in Australia and considered as next waves, this finding confirms the influence of being in a growing industry as an external growth determinant (Davidsson, Achtenhagen, & Naldi, 2010).

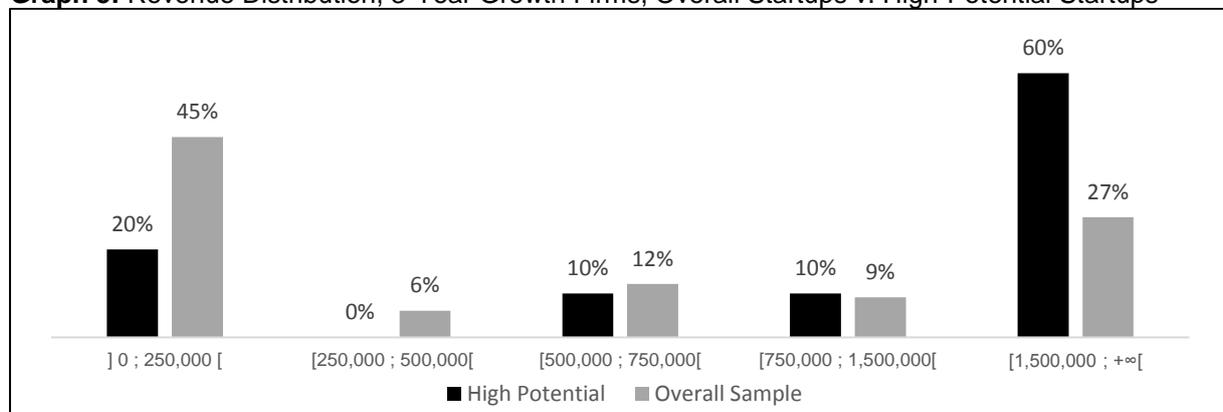
Graph 4: Distribution per Industries, 3-Year Growth Firms v. Overall Sample



Note. n(3-year growth startups)=33, including 10 high-potential startups, n(overall sample)=173.

In an attempt to define a revenue threshold to sustain growth, 64% of startups achieving three years of consecutive growth have a revenue below \$750,000, however, out of the ten high-potential startups, 70% have a revenue above this threshold (Graph 5).

Graph 5: Revenue Distribution, 3-Year Growth Firms, Overall Startups v. High-Potential Startups



Note. n(high-potential 3-year growth startup)=10, n(overall sample of 3-year growth startup)=33

To conclude, Australian startups face difficulties to sustain growth compared to other developed economies. Startups achieving three years of consecutive growth tend to be in growing industries (external determinant) and have revenue above \$750,000 (Graph 5). Yet, internal determinants also play an influence in startups' sustainability, which will be studied in the next study (Davidsson, et al., 2009).

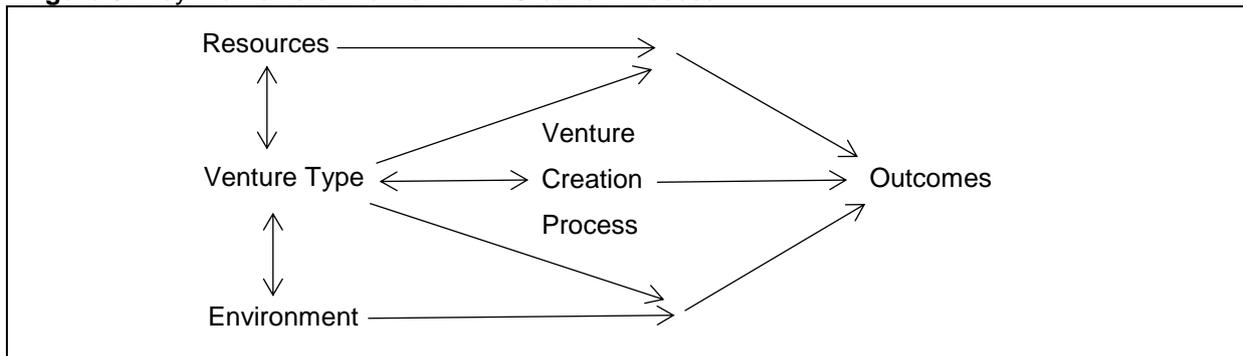
2.3 Second Study: Conditions of Startup Sustainability

RO2: *What are Australian startups' conditions to achieve sustainability?*

2.3.1 Background

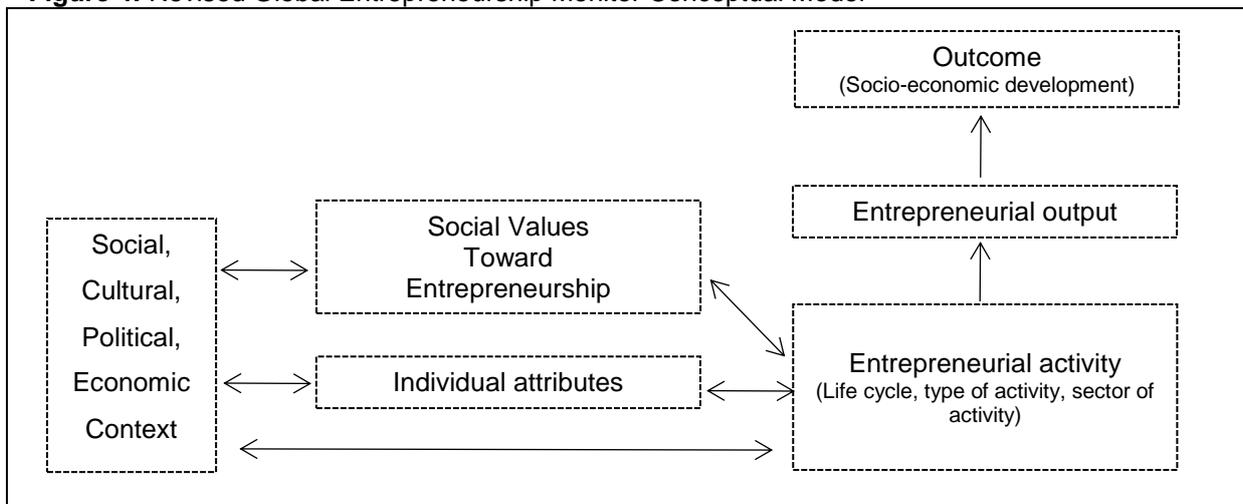
The development of a startup relies on several variables: its initial resources (investment, asset, labour); the individual attributes of its founders (education, experience, previous startups' outcome); and the influence of a broader socio-economic environment (Figures 3 and 4, section 1).

Figure 3: Key Elements of the New Firm Creation Process



Note. Source from Davidsson et al. (2009).

Figure 4: Revised Global Entrepreneurship Monitor Conceptual Model



Note. Adapted with minor change from Kelley et al. (2016).

The study of interaction between these variables will help answer the second research objective and define, accordingly, conditions of startup sustainability. To do so, a regression analysis between four variables (revenue, asset, labour, years of experience) will be conducted. This study will represent the influence of startup resources and individual attributes, toward startup development.

Let Y be the dependent variable, X_i the independent variables, β_i the regression coefficients (parameter vectors), and ε the condensed error term (noise). The regression model is as follows (Freedman, 2005).

$$\forall i \in \llbracket 1; 3 \rrbracket, (X_i, Y) \in \mathbb{R}^4, Y = f(X_1, X_2, X_3) = \beta_0 + \sum_{i=1}^3 (\beta_i X_i) + \varepsilon$$

As revenue is often used as an indicator of companies' performance, it is here assumed, to simplify the model, to be a proxy for sustainability (Venkatraman & Ramanujam, 1986). While the asset variable is expected to grow with revenue, the inclusion of the labour variable helps control the startup size effect on the model. As the revenue, asset and labour variables are prone to volatility, the logarithm function is added to smooth the variability, in coherence with other regression analyses made on similar variables (Cleveland & Loader, 1996; Senyard, Baker, Steffens, & Davidsson, 2014). The regression model becomes as follows.

Let Y be the amount of revenue, X_1 the amount of asset, X_2 the amount of labour (founder(s)' weekly hours), and X_3 the combined years of experiences of the startup founder(s) in the industry they operate.

$$\forall (X_1, X_2, Y) \in \mathbb{R}^{+*3}, \forall X_3 \in \mathbb{R}^+, \log(Y) = \beta_0 + \beta_1 \log(X_1) + \beta_2 \log(X_2) + \beta_3 X_3 + \varepsilon$$

2.3.2 Sample Definition

To be eligible to participate in the study, startups had to report a positive revenue, labour and asset, in the randomly-chosen third wave, and a number of years of experience superior or equal to zero to capture all possibilities, in the first wave. The latter variable was mostly collected at this period. As the exclusive conditions are spread out across two different waves separated by two years, it helps confirm the startups were not discontinued over the period, and were, accordingly, sustainable.

2.2.3 Results

The regression model shows a high R^2 compared to the standard in cross-sectional studies (Table 2) (Giles, 2013). As a result, the overall study is likely significant. The asset and labour variables are strongly significant (p -value <0.001), and the years of experience variable is significant (p -value <0.01). The four regression coefficients are all positive, confirming a positive relationship between the variables and sustainability. As a result, the study proves startups having higher level of initial investment in resources (asset and labour) are more likely to be successful. In addition, founder(s)' industry experience (about 13.5 years) is found to affect the performance of a startup positively (Graph 6). Yet, this relationship is not exclusive. A visual investigation of the data indicates that in few cases, startups can still be sustainable even though its founders have, for instance, no earlier industry experience.

Table 2: Regression Results

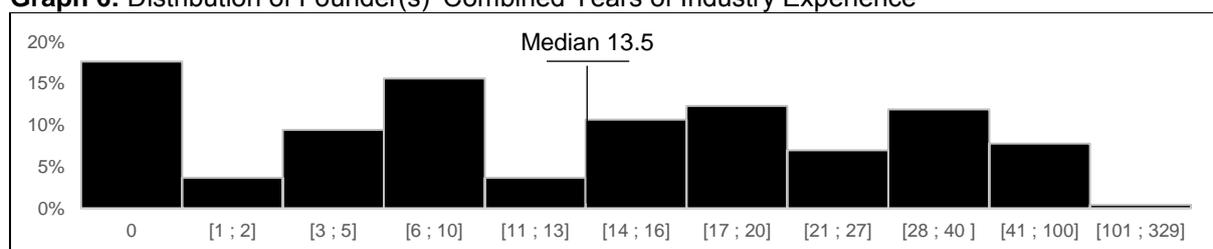
Variables	P-Value
Asset (X_1)	6.24×10^{-19} ***
Labour (X_2)	5.56×10^{-14} ***
Years of Experience (X_3)	0.002**

Regression Coefficients	Value
β_0	2.07
β_1	0.87
β_2	0.37
β_3	<0.01

Regression Statistics	Value
R^2	0.57
Significance F	1.74×10^{-43}

Note. $n=244$. *** p -value <0.001 , ** p -value <0.01 .

Graph 6: Distribution of Founder(s)' Combined Years of Industry Experience



Note. $n=244$. Frequency distributed on an 11-intervale percentile basis.

Extensions from the three variables studied further define the conditions of startup sustainability. Firstly, the access to asset is conditioned by startups' ability to access finance (fund investments, government grants). Additionally, assets provide benefits outside of their direct purpose. SMEs in Australia that have higher shares of tangible assets out of total assets have easier access to long-term debt, which might facilitate their development (Cassar & Holmes, 2003).

Secondly, the influence of labour on sustainability does not only depend on its quantity (weekly hours), but also on its quality (efficiency, technicity, experience, level of education) (PwC, 2013). Startups need easy access to technical and educated workforces (knowledge asset), otherwise they might be required to outsource skilled employees, increasing, accordingly, their hiring costs (Startup Muster, 2015).

Thirdly, founders' years of industry experience provide more than knowledge of marketplaces. Their experiences enable startups to broaden their local networks to gain access to critical resources and potential clients (Barringer, Jones, & Neubaum, 2005). This advantage ultimately strengthens startups' sustainability, by limiting their risk of "liability of newness" against larger and older firms having more experiences (Stinchcombe, 1965).

To conclude, the sustainability conditions for Australian startups are: access to finance to build assets; access to sufficient labours (quantity) and skilled employees (quality); and a few years of industry experience (ideally 13.5 years) from their founder(s). Policy-makers can enable these conditions depending on their involvement, which will be studied in the next study.

2.4 Third Study: Policy-Makers' Startup Focus

RO3: What are Australian policy-makers' action and focus to support startup sustainability?

2.4.1 Background

High-potential startups have greater socio-economic outcomes than regular small firms (Shane, 2009). As they create more jobs and wealth, they reduce welfare costs and increase tax collection, which is in policy-makers' interests (Henrekson & Johansson, 2010). Yet, since they have broader growth ambitions and are more innovative, they take more risks, which decreases, in the meantime, their chance of sustainability (OECD, 2010; StartupAUS, 2015). As a result, high-potential startups are recommended to be the primary focus of policy-makers (Mason & Brown, 2013) .

This focus is extended to the industries policy-makers decide to support. Some industries see low startup sustainability because of their mature cycle. (Davidsson, et al., 2009). For instance in Australia, startups entering the maturing retail industry with low barriers of entry face low survival rates (Davidsson, et al., 2009). Consequently, Australian policy-makers have been recommended to support selected growing-industries to fuel new drivers of economic growth, such as "International Education," "Finance," "Agribusiness," "Healthcare," "Tourism," or "Information and Communications Technology (ICT)" (Baghai, Redhill, Richardson, & Vorster, 2014; PwC, 2013).

To answer the third research objective, the study will analyse Australian policy-makers' current focus between regular and high-potential startups. Comparison between industries currently supported against expectedly supported will assess policy-makers' efficiency. Lastly, the causes of startup discontinuation will be evaluated and compared to policy-makers' type of support to showcase areas of improvement.

2.4.2 Sample Definition

The CAUSEE survey collected these variables in Wave 5. To be eligible, startups had to answer the questions regarding government support. Out of the eligible sample, 22% were high-potential startups.

2.4.3 Results

Findings show overall Australian policy-makers are already focusing on high-potential startups: 64% of them received government support (grant, advice, mentoring or tax concessions) against 9% of regular startups (Graph 7). Yet, the overall government support is inconsistent between industries. Some industries are over-supported such as "Customer Service," "Manufacturing," and "Construction" whereas they do not represent attractive growing industries or next drivers of economic growth for Australia (Baghai, Redhill,

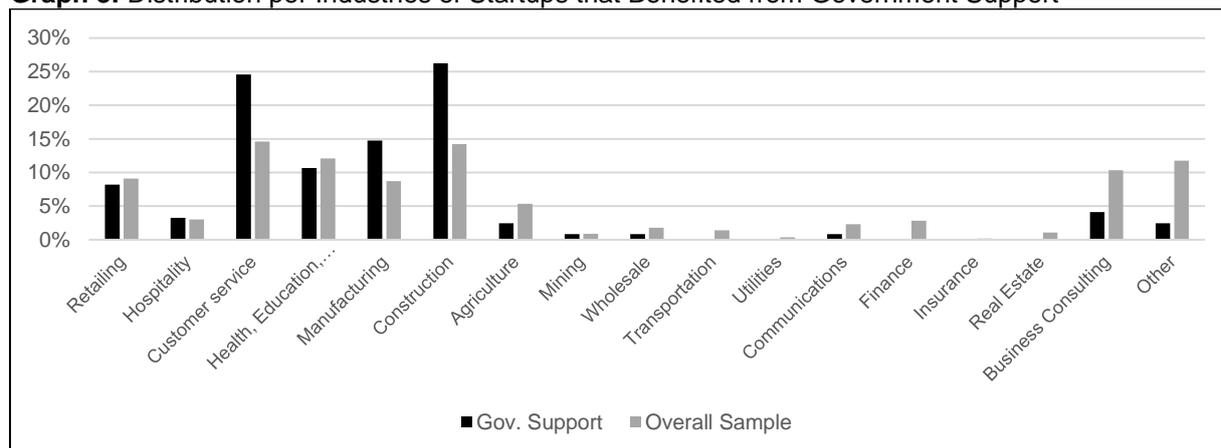
Richardson, & Vorster, 2014). High-potential industries such as “Health and Education” or “Hospitality (Tourism)” do not appear either optimally supported (Graph 8). These results confirm Australian policy-makers might be misusing subsidies in former attractive but now low-growing industries, to the detriment of current growing-industries (Baghai, Redhill, Richardson, & Vorster, 2014).

Graph 7: Share of Startups that Benefited from Government Support



Note. n(high-potential startups)=122, n(regular startups)=433.

Graph 8: Distribution per Industries of Startups that Benefited from Government Support



Note. n(gov. support)=122, n(overall sample)=562.

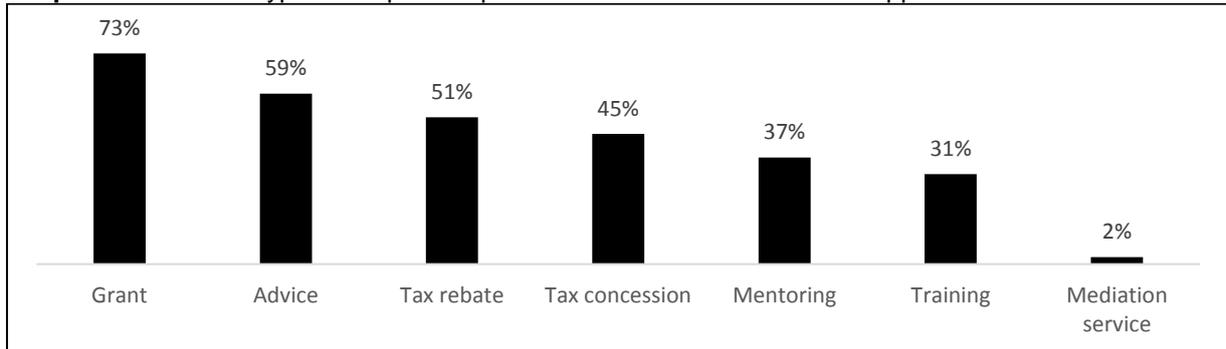
Discontinued startups that were, accordingly, not sustainable, mainly faced: (a) obstacles that could not be overcome, whether financial, technical or managerial; (b) a change in the founder(s)' personal life; or (c) a profit too low to prosper (Graph 9). In an attempt to help startups' sustainability, Australian policy-makers provide mainly: (a) grants to help bootstrap startups and to financially support long-term projects having high development costs; (b) punctual advice; and (c) tax concessions to relieve startups at their early-development stages (Graph 10). Findings show, however, that mentoring, as a continuous form of guidance, accounts for little among policy-makers' supports (Graph 10). Yet, it may help startups overcome larger obstacles such as strategic organisational transitions (Eby, 1997).

Graph 9: Reasons for Startups Discontinuation



Note. n=119. Share of importance weighed by a Likert Scale, see Appendix A.

Graph 10: Share of Type of Help Startups Benefited from Government Support



Note. n=122.

Policy-makers' action, however, have to be relativised. Although policy-makers can enable sustainability by improving growth conditions, they cannot replace the aggregate actions of the business world (Baghai, Redhill, Richardson, & Vorster, 2014). In other words, policy-makers' direct support at the firm's level (micro-level) are not an exclusive condition to drive sustainability. This consequence is highlighted in the study results – among the sample of discontinued startups, 19% received government support but 17% did not (Graph 11).

Graph 11: Share of Discontinued Startups per Support Received



Note. n(gov. support)=122, n(no gov. support)=440.

To conclude, Australian policy-makers have the right primary focus on high-potential startups, however, high-growth industries are inefficiently supported. Mentoring efforts could also help startups overcome obstacles, which represent the main reason for their discontinuity.

2.5 Key Findings

The three studies thoroughly described the Australian startup sustainability context, as well as the involvement of policy-makers. Results summarised below (Table 3) will be used to tailor recommendations to Australian policy-makers in the next section.

Table 3: Key Findings Summary

1. Australian Startup's Growth Pattern

- Difficulties to sustain growth or reviving from decline.
- Low startup performance achieving three consecutive yearly growth, those that do are in growing industries.
- High-potential startups have higher sustainability.
- 70% of high-potential startups have revenue above \$750,000.

2. Conditions of Australian Startup Sustainability

- Assets, labour (quantity and quality), and founder's experience (including networks) are significant to drive sustainability.
- The median of combined founder(s)' years of industry experience is 13.5.

3. Australian Policy-Makers' Startup Focus

- Policy-makers focus overall on high-potential startups.
- Some low-growth industries are artificially supported at the expense of growing industries.
- Obstacles not being overcome are the main reason for startup discontinuation.
- Policy-makers' type of direct support are grants, and punctual advice over mentoring.
- Policy-makers' support is not an exclusive condition for achieving sustainability.

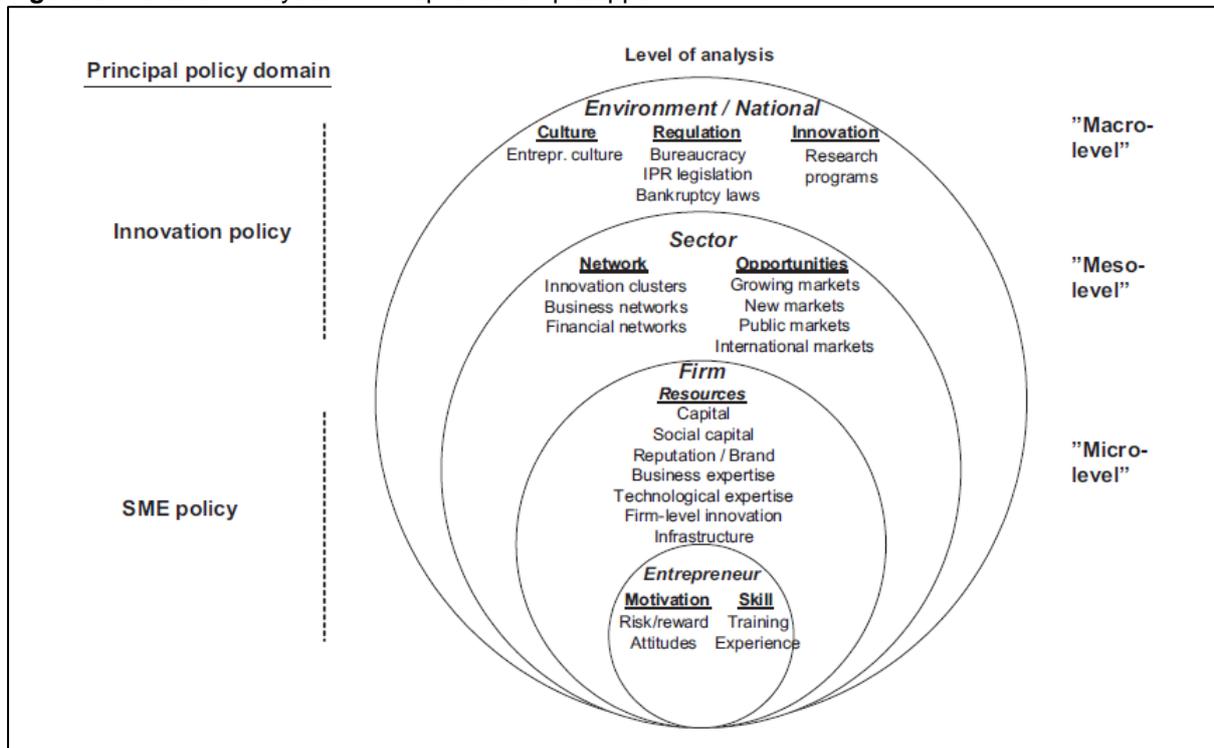
Note. Source from sections 2.2, 2.3 and 2.4.

3. Recommendations

3.1 Introduction to Australian Startup Policies

The existing Australian startup policies are discussed and divided into three broad dimensions to help identify areas of improvements (Figure 5).

Figure 5: Level of Analysis in Entrepreneurship Support



Note. Source from Autio, Kronlund, and Kovalainen (2007).

3.1.1 Macro-Level

Policy-makers enable startup sustainability through: (a) sound business conditions from the overall business laws; (b) skilled workforces from national curriculum policies to match education with business needs; (c) efficient infrastructures to enable communication and access to markets; and (d) a positive entrepreneurship culture to encourage taking risk (ACARA, 2015; Australian Government, 2014; Kelley, Herrington, & Singer, 2016; OECD, 2012).

Australia is already ranked 10th worldwide for ease of doing business, however, the *Corporations Act 2001* (Cth) is criticised for increasing a culture of fear of failure because of the liability faced when discontinuing a startup (Euromonitor International, 2015; StartupAUS, 2015). In terms of infrastructure, Australia's slow broadband network in remote areas is blamed for limiting startup growth, which the National Broadband Network (NBN) policy is planning to resolve (Australian Government, 2015b; Kruger & Cacioppe, 2014).

3.1.2 Meso-Level

Policy-makers enable sustainability by supporting specific industries or firms with special treatments, such as tax benefits. Australian startups already take advantage of one of the most generous tax incentive in the world to encourage early-stage investments (Dias, 2016a; PwC, 2016). Innovation policies help build innovation clusters, linking universities with public and private sectors, which is partly overviewed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) that plan to make Australia an entrepreneur's nation (Baghai, Redhill, Richardson, & Vorster, 2014). State governments also play a local role in enhancing startup ecosystems. Queensland and Victoria governments are, for instance, heavily investing in startup hubs (Dias, 2016b; Mumby, 2016).

3.1.3 Micro-Level

Policy-makers support startups directly through SME policies by providing grants, advice, or public procurement contracts (Global Entrepreneurship Monitor, 2014; Startup Muster, 2015). At the regional level, startups are supported by state governments. The "Startup Queensland Fund" offers, for instance, grants up to \$25,000 (Queensland Government, 2016b). At the national level, the federal government oversees the Entrepreneur's Programme flagship initiative (former Commercialisation Australia and COMET) that supports high-potential startups with extensive network access, mentoring, and grants up to \$1,000,000 (Autio, Kronlund, & Kovalainen, 2007; Australian Government, 2016b; StartupAUS, 2015). Yet, the programme has seen half of its fund cut in the last few years (StartupAUS, 2015).

Other federal initiatives have proven unsuccessful. The "Innovation Investment Fund" as a venture capital scheme closed down in 2014 because bureaucracy processes were too restraining and too few startups were funded (Autio, Kronlund, & Kovalainen, 2007; Clune, 2014). The "Commercial Ready Program" targeting high-potential technology firms closed down in 2007 after three years of existence because it supported too many startups that would have prospered without public assistance (Autio, Kronlund, & Kovalainen, 2007; Cheever, 2011). Although, short program lifecycles might highlight policy-makers learn from previous mistakes, policies still suffer from changes of government (potentially every four years), which increases their temporality (Autio, Kronlund, & Kovalainen, 2007).

The difficulty for policy-makers remains to develop SME policies coherent with broader policies (at the meso-level and macro-level) that might diverge from one another (OECD, 2010). Furthermore, policy-makers face the challenge to identify high-potential startups against regular startups, and have difficulties to select startups that *actually* require support to be sustainable (Autio, Kronlund, & Kovalainen, 2007; Senyard, Davidsson, Gordon, &

Steffens, 2009). Consequently, the recommendations addressed in the next section will take these drawbacks into account.

3.2 First Recommendation: Entrepreneur’s Programme Amendment (Micro-Level)

3.2.1 Overview

The program offers great support nationally to high-potential startups and is therefore critical to the overall Australian startup sustainability (Merrick, 2016). Divided into three subprograms, it assists innovative startups at their nascent, commercialisation and internationalisation stages (Table 4). Startups need to participate in the three subprograms to be granted a further \$20,000 grant for mentoring services (Australian Government, 2016b). While the program aims to target high-potential startups, it is criticised to instead mainly support SMEs, which highlights room for eligibility improvements (Maritz, 2015).

Table 4: Entrepreneur Programme’s Subprograms, Support and Eligibility

Subprogram	Eligibility Criteria	Type of Support
Accelerating Commercialisation	<ul style="list-style-type: none"> ▪ Owner of a novel idea. ▪ Expect to sell overstate/oversea. ▪ 50% of the project can be funded by the startup. 	<ul style="list-style-type: none"> ▪ Pre-launch advice. ▪ Grant up to \$1,000,000.
Business Management (Business Evaluation Supply Chain Facilitation Growth Services Tourism Partnerships)	<ul style="list-style-type: none"> ▪ Operate in a growth sector*. ▪ Business up and running for 3+ years. ▪ Annual turnover or annual expenditure >\$1,500,000, or >\$750,000 for Northern Australia or remote areas. 	<ul style="list-style-type: none"> ▪ Managerial advice for strategy, growth, supply chain or process improvements.
Innovation Connections	<ul style="list-style-type: none"> ▪ Operate in a growth sector. ▪ Annual turnover or annual expenditure >\$1,500,000, or >\$750,000 for Northern Australia or remote areas. 	<ul style="list-style-type: none"> ▪ Innovation Facilitators’ advice to tap into new market and identify gap preventing growth. ▪ Grant up to \$50,000.

Note. * Growth sectors are stated as: “Advanced Manufacturing,” “Food and Agribusiness,” “Media Technologies and Pharmaceuticals,” “Mining Equipment, Technology or Services,” “Oil, Gas and Energy.” Source from the Australian Government (2016a; 2016b; 2016c).

3.2.2 Eligibility Amendments

Revenue

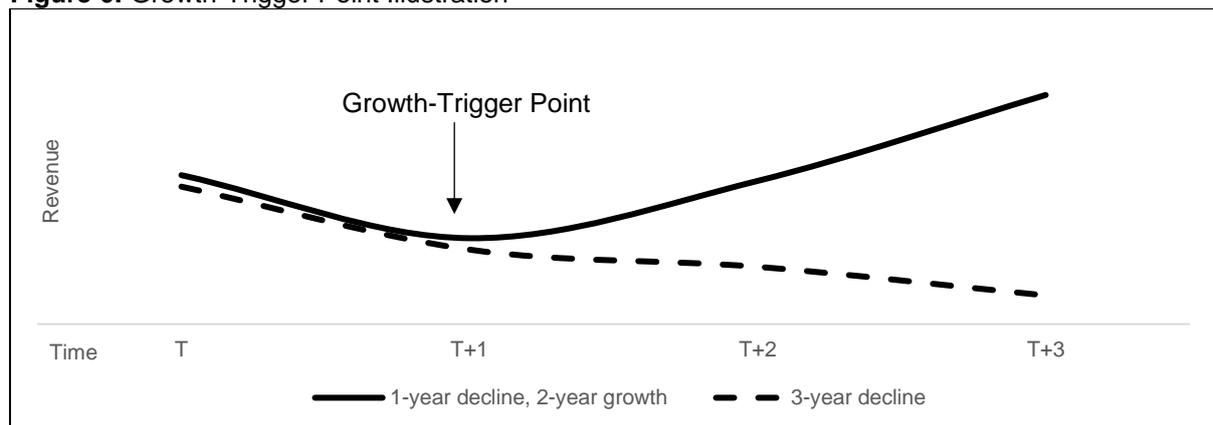
The annual turnover requirement is consistent with the first study's findings, as most high-potential startups achieving three years of consecutive growth have revenue over \$1,500,000 (Graph 5). Yet, the study also shows that some high-potential startups still

achieve sustainability while being in a lower revenue bracket, which could be the case if they are in early-development stages. As a result, the policy leaves behind startups and misses therefore an opportunity. The overall revenue threshold should then be decreased to \$750,000. By doing so, however, policy-makers might be concerned that regular startups would slip through the net. To lower the risk of false positives (regular startups considered as high-potential), a growth pattern criteria is added below.

Growth Pattern

Startups' growth pattern can be used as an indicator of sustainability potential. Three-year growth startups can naturally be considered as having high potential. Yet, the first study also highlights Australian startups face greater difficulty to manage downturns compared to other developed economies. A first decline followed by two years of growth might showcase a growth-trigger point, which Mason and Brown (2013) recognise as a key criteria to identify high-potential startups (illustration in Figure 6). The eligibility criteria should then include this characteristic to support startups that might need help in the future.

Figure 6: Growth-Trigger Point Illustration



Note. Adapted from Mason and Brown (2013) explaining a growth-trigger point can be the result of a new product delivered, a venture capital raised, or the acquisition of a recent technology.

Years of Experience

The second study shows founders' industry experience (ideally 13.5 years) plays a significant role in improving their startup prospects. To ensure high-potential startups are indeed selected, a further eligibility criteria could, accordingly, include this characteristic. Yet, the networking advantage found in founders' experience can also be facilitated in incubators or startup hubs (PwC, 2013). In order to limit the number of high-potential startups left behind, the eligibility criteria should therefore incorporate this inclusive condition, in case founder(s) have no earlier industry experience but are part of a startup hub.

Industry

The first and third studies show a great imbalance between industries that should be supported and the ones actually supported. This observation is extended to the Entrepreneur Programme’s eligibility criteria that still includes low-growing industries or former Australian growth drivers, such as: “Manufacturing”, “Mining” and “Oil” (Table 5). An amendment of the industry criteria by adding growing industries from the first study and the literature will ensure the policy includes high-potential startups and focus on Australia’s future growth drivers (Table 5).

Table 5: Summary of Entrepreneur Programme’s Eligibility Amendments v. Actuals

Amendments	Actuals
<ul style="list-style-type: none"> ▪ Operate in a growth sector: <ul style="list-style-type: none"> ○ Health ○ Finance ○ Communications (ICT) ○ Agribusiness ○ Gas ○ Tourism, Hospitality ○ International Education ▪ Annual turnover >\$750,000. ▪ Business up and running for 3+ years, with 3 years of consecutive growth or 2 years of consecutive growth after a first decline. ▪ Combined years of founder(s) experience in the industry the startup operate >13.5 years, or participate in an incubator or startup hub providing networking opportunities. 	<ul style="list-style-type: none"> ▪ Operate in a growth sector: <ul style="list-style-type: none"> ○ Health (pharmaceuticals) ○ Mining ○ Media Technologies (~ICT) ○ Agribusiness ○ Oil, Gas, Energy ○ Advanced Manufacturing ▪ Annual turnover or annual expenditure >\$1,500,000, or >\$750,000 for Northern Australia or remote areas. ▪ Business up and running for 3+ years.

Note. ~ part of the ICT industry. To simplify, eligibility criteria are merged from the three subprograms. If not amended, the criteria remains the same (see Table 4). Source for the list of amended growing industries from Baghai, Redhill, Richardson, and Vorster (2014), and PwC (2013).

3.2.3 Application Amendments

The Entrepreneur’s Programme might be hard for startups to apply to. The application process requires participants to fill a 17-page paper form, going back and forth to appendices (Appendix C). Converting the application into an online form could solve the issue by adding pop-up tips and advice at each question, which could not have been included in a paper form because of the space taken (Lines, Patel, & Hone, 2004).

In addition, the program follows a reactive approach – startups get aware of the program and then apply. Yet, Finland showed a proactive approach can also be successful – policy-makers directly contact startups that might need support (Autio, Kronlund, & Kovalainen,

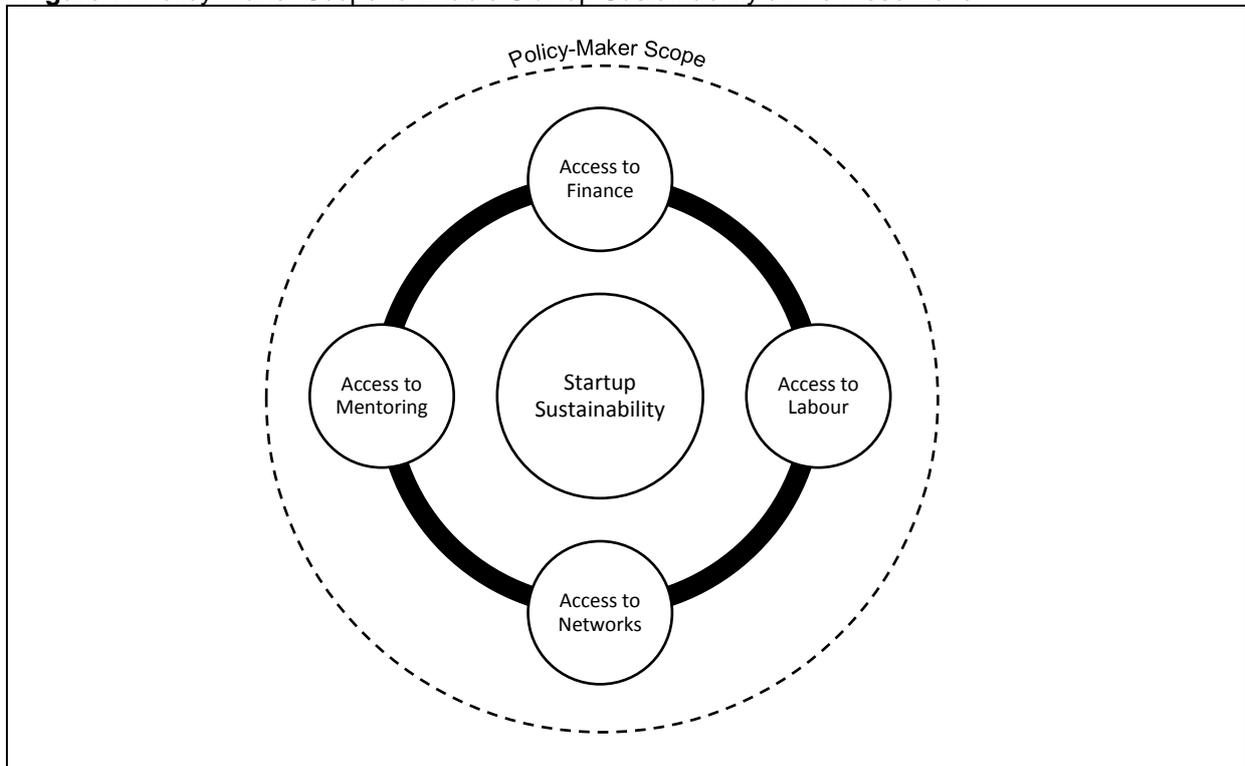
2007). The federal government should therefore identify high-potential startups that might need support, based on their growth pattern, industry and activities. This type of data can be retrieved from private-enterprise databases such as Orbis. Both a reactive and proactive approach will then ensure high-potential startups are supported. Yet, it is to be noted that policy-makers might encounter resistance, as some startups may remain reluctant to use government support because of the fear of losing control or independency (Bennett & Robson, 2003).

To conclude, this micro-level policy has room for improvement. Eligibility and application amendments will contribute to sustain more efficiently high-potential startups. Yet, the amended policy will only work if it is coherent on a broader level. PwC (2013) reminds that the startup ecosystem (at the meso-level) must, first, be ready in order not to waste government support, which will be addressed in the next recommendation.

3.3 Second Recommendation: Startup Ecosystem Improvements (Meso-Level)

The second study shows access to finance, labour and network are key conditions for startup sustainability. Additionally, the third study highlights mentoring, as a type of government support, is underused. As a result, the overall Australian startup ecosystem plays an important role in startups' success but has room for improvement (Figure 7).

Figure 7: Policy-Maker Scope to Enable Startup Sustainability at the Meso-Level



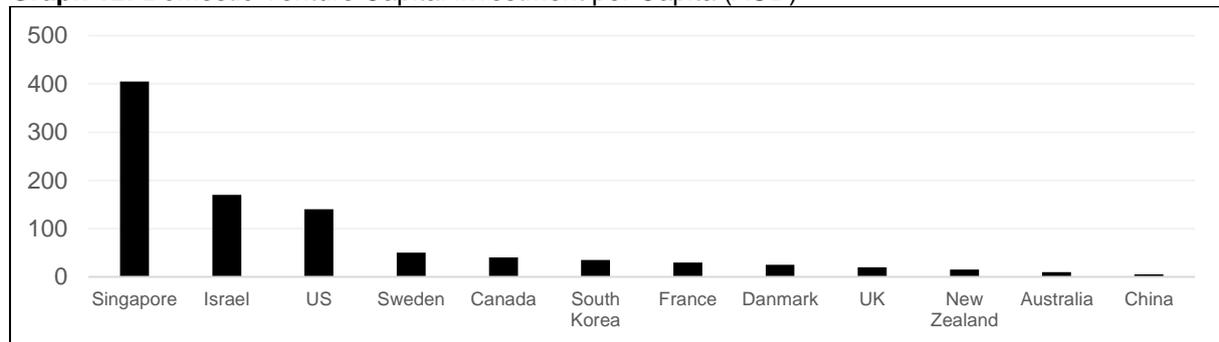
Note. Adapted from sections 1, 2.3 and 2.4.

3.3.1 Access to Finance

Innovative startups face difficulties when raising investment funds (OECD, 2010). As their products are technologically based, their risk of failure is increased with their product obsolescence attributes (OECD, 2010). While the tax environment in Australia is already advantageous for early-stage investors, and crowd-sourcing as a type of investment is being implemented, other initiatives could encourage investors willing to share this risk (Dias, 2016a; Parliament of Australia, 2016). In Singapore, the National Research Foundation (NRF) tops up private venture capital investments, and government stakes can then be bought back within three years (Tech Startups Special Report, 2014) This way, venture capitals can reduce by half the risk they take, while policy-makers limit their risk as venture capitals have more time and resources to conduct thorough research to select high-potential startups. A similar approach in Australia would help balance the venture capital gap between other developed economies, and ultimately contribute to startup sustainability (Graph 12).

Yet, policy-makers will need large funds to invest as such, which could come from transfers of current subsidies in low-growing industries (Baghai, Redhill, Richardson, & Vorster, 2014).

Graph 12: Domestic Venture Capital Investment per Capita (AUD)



Note. Source from StartupAUS (2015).

3.3.2 Access to Labour

To develop their product, startups require different skilled employees. In Australia, technical ICT skills are rare. Yet, they are critical since they increase productivity through all industries as a growth-enabler (Baghai, Redhill, Richardson, & Vorster, 2014). While the federal government is rolling out an amended curriculum for secondary-level students to increase ICT awareness, little focus is placed on universities, whereas they play a key role in building these skills (ACARA, 2015; Spike Innovation, 2015). Most Australian universities do not have startup incubators to encourage students to try their ideas; entrepreneurship classes are often targeted to Business students, leaving behind Science, Technology, Engineering and Mathematics (STEM) students; academics teaching these units often have limited entrepreneurship experience, and tend to focus on small firms rather than high-potential startups (Spike Innovation, 2015).

To tackle the issue, state governments under the coordination of the federal government should partner with universities to encourage ICT and entrepreneurship skills to STEM students. Academics' limited startup experience can be compensated by public and private cooperation (Global Entrepreneurship Monitor, 2014). This method is already successful for Stamford University – the CS183C unit that teaches how startups scale up utilises entrepreneurs as guest lecturers at each lectures (Hoffman, 2015). By sharing their experiences from real world success, they provide the knowledge foundation for startup sustainability (StartupAUS, 2015).

Yet, application of these policies would take some years before being effective. As a result, and to compensate the current lack of skilled workforce, a temporary entrepreneur visa should be developed for high-potential startups between the G20 members, in continuation with state governments' initiatives to attract oversea talent in their region

(Global Entrepreneurship Monitor, 2014; Queensland Government, 2016a). Australia is already considered as a desirable country to work in, and could therefore take this opportunity to attract talent from other developed economies, without negatively affecting the current Australian workforce (Papademetriou & Sumption, 2013).

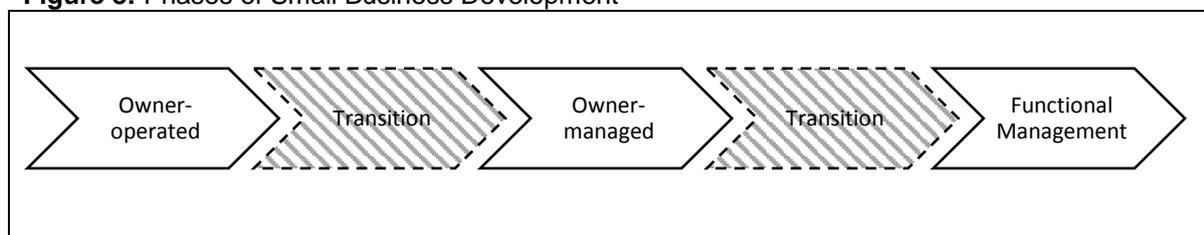
3.3.3 Access to Network

Networks are facilitated in incubators and startup hubs by bringing entrepreneurs with the same ambitions to mutually benefit each other's (Kruger & Cacioppe, 2014; PwC, 2013). While state governments develop these networks regionally, no national coordination is currently undertaken (Startup Muster, 2015). Yet, incubators have a high influence in socio-economic development. In the United States, every US\$1,000 invested in startup incubators creates an additional US\$30,000 in tax collections and six jobs (StartupAUS, 2015). The federal government should then develop a national incubator to coordinate regional hubs, which will give entrepreneurs access to market knowledge and cooperation, despite their actual geographic location (StartupAUS, 2015).

3.3.4 Access to Mentoring

High growth comes with sustainability challenges. Throughout their development, startups pass through three organisational stages (Figure 8). As transitions from one stage to another might take years to complete and internally disrupt startups, they represent a high risk of sustainability failure (Mount et al., 1993). Companies successfully capitalising on these transitions had sufficiently planned for change and, accordingly, controlled growth, instead of suffering from it (Mount et al., 1993). Mentoring from experienced entrepreneurs as a long-term support throughout transitions can efficiently limit this risk. Yet, the third study finds mentoring is underused in Australia. As a result, policy-makers should promote this type of support over punctual advice, by cooperating with private sectors to select experienced mentors.

Figure 8: Phases of Small Business Development



Note. Adapted from Mount et al. (1993).

To conclude, meso-level policy amendments will help improve the startup ecosystem and enable an efficient use of policy-makers' micro-level supports toward sustainability, summarised below (Table 6).

Table 6: Recommendation Summary

Dimension	Policy-Maker	Recommendation
Micro-Level	Federal Government	Entrepreneur's Programme <ul style="list-style-type: none"> ▪ Amend Eligibility Criteria: <ul style="list-style-type: none"> ○ Growth sector ○ Annual turnover ○ Growth pattern ○ Industry experience or participation in a networking community ▪ Amend Application Process: <ul style="list-style-type: none"> ○ Convert paper form to online form ○ Start proactive approach to support high-potential startups
Meso-Level	Federal & State Governments	Access to Finance <ul style="list-style-type: none"> ▪ Top up selected venture capital investments.
	State Government	Access to Labour <ul style="list-style-type: none"> ▪ Encourage ICT skill development at universities. ▪ Encourage private sector cooperation with universities.
	Federal Government	<ul style="list-style-type: none"> ▪ Develop a temporary entrepreneur visa between G20 members.
	Federal Government	Access to Network <ul style="list-style-type: none"> ▪ Create a national network of startup hubs and incubators by coordinating regional hubs.
	Federal & State Governments	Access to Mentoring <ul style="list-style-type: none"> ▪ Favour mentoring instead of punctual advice.

Note. Source from sections 3.2 and 3.3.

3.4 Overall Limitations and Future Research Directions

3.4.1 Data Collection

The CAUSEE phone-interview format limits the sample size because it is time consuming and expensive (Malhotra, 2006). Yet, interviewers help obtain sensitive information from respondents needing to be reassured when sharing confidential company information, such as: revenue (actual and expected), profit, or expenses (Malhotra, 2006). Data collected might also suffer from imprecisions as question formats allowed interviewers to enter estimates, rather than actual data, without informing analysts about the precision collected (Appendix A). Future researches could then study the impact on results depending on the data precision collected (actual or estimate). Additionally, some answers might differ because of respondents' different frames of reference (Schwarz, 1999). For instance, when asking about labour's quantity (weekly hours), respondents could have included formal and informal hours (Martin & Polivka, 1995) (Appendix A). Future researches could then further detail questions to avoid this issue.

3.4.2 First Study

As the study compares findings from two different datasets, results may not be directly comparable due to differences in methodology (startups being less than 4 years old at time T in the first study v. startups being 2 years old in Davila et al.'s (2015) study), sample size available (n=173 v. n=158,000), and economic conditions – the second and third wave results might have been affected by the beginning of the global economic crisis (sections 2.1.2, 2.1.3) (Gruenhagen, et al., 2016). Yet, it provides a relevant basis of comparison because of similarities in research objectives and focus. Additionally, the two studies only follow startups' growth over three years, but little research analysed outcomes after this period (OECD, 2010). As a result, future researches could study larger sample sizes on a longer longitudinal basis.

3.4.3 Second Study

Constrained by the time available to analyse large datasets, the regression model was simplified to study three independent variables on a single year basis. Yet, the literature shows the influence of other variables as growth determinants, such as: type of investment; startup's location and industry; profitability; age; use of digital technologies; organisational stage; or human resource practices (section 1.2.2). Additionally, the model does not take into account the innovation lag effect – time between the adoption of an innovation and its impact on growth that might take up to ten years – despite the longitudinal availability of the data (OECD, 2010; Symeonidis, 1996). Future researches could therefore incorporate more variables in the model and perform a time series regression with lagged explanatory variables on a longitudinal basis (Mendenhall & Sincich, 2014). For purposes of simplicity, the average years of experience was estimated through the median, which could also be improved in future researches with a quantile regression analysis (Davino, Furno, & Vistocco, 2013).

3.4.4 Project Approach

The overall report and recommendations are based on static analyses (at a time T), however, some variables such as “growing industries” are expected to vary over time (dynamic variable). There is indeed a tendency to overestimate the short-term effect of a technology within an industry, and underestimate its long-term outcome (World Bank, 2016). Consequently, future researches and policy-makers should continuously reassess if growing industry definitions are still relevant.

3.5 Conclusion

By thoroughly describing the Australian startup environment and distinguishing high-potential startups to small firms, this report highlighted Australian startup challenges toward sustainability. The analysis of Australian policy-makers' scope and support has ultimately helped tailor specific and actionable recommendations. Overall, this report filled the literature's knowledge gaps and represents a comparable basis to conduct further studies in this area. Lastly, it gives a relevant rationale to policy-makers to make informed decisions to support Australian startups, and ultimately accelerate Australia's shift toward a sustainable and knowledge-intensive economy.

Appendices

Appendix A: Interview Questions

Note. Source from QUT Business School, Australian Centre for Entrepreneurship, School of Management (2016).

Question for Revenue (Wave 1)

Q40 (Q2027) What were the business' sales in total dollars over the past 12 months approximately?

INTERVIEWER NOTE: PLEASE PROBE FOR A DOLLAR AMOUNT. ESTIMATE IS BETTER THAN DON'T KNOW. ENTER FULL AMOUNT (DO NOT SHORTEN TO THOUSANDS OR MILLIONS).

ENTER FULL \$ AMOUNT:

Don't Know - 999,999,999

Refused - 999,999,998

Question for Labour (Weekly hours) (Wave 3)

READ: I will now turn to some questions about what experiences and resources you and others contribute to this business.

ASK ALL (Except REDUCED)

D1. (W1-Q21) **SOLO TEXT:** How many hours per week do you currently work for this business?

PARTNER TEXT: How many hours per week do you and your partner combined currently work for this business?

TEAM TEXT: How many hours per week do you and all other owners combined currently work for this business?

INTERVIEWER NOTE: ESTIMATE IS BETTER THAN DON'T KNOW

RECORD NUMBER:

Don't Know - 8888

Question for Asset (Wave 3)

L40. Approximately what is the value of these fixed or capital assets worth?

INTERVIEWER NOTE: ESTIMATE IS BETTER THAN DON'T KNOW. ENTER FULL AMOUNT (DO NOT SHORTEN TO THOUSANDS OR MILLIONS).

ENTER FULL \$ AMOUNT:

Don't Know - 888888888

Refused - 999999999

Question for Years of Experience (Wave 1)

Q12 **NASCENT TEXT**
(Q321) SOLO TEXT: How many years of work experience, if any, have you had in the industry where this business will compete?
PARTNER TEXT: How many years of work experience, if any, have you and your partner combined had in the industry where this business will compete?
TEAM TEXT: How many years of work experience, if any, have you and all other owners combined had in the industry where this business will compete?
YOUNG FIRM TEXT
SOLO TEXT: Prior to starting this business, how many years of work experience, if any, did you have in the industry where this new business will compete?
PARTNER TEXT: Prior to starting this business, how many years of work experience, if any, did you and your partner combined have in the industry where this new business will compete?
TEAM TEXT: Prior to starting this business, how many years of work experience, if any, did you and all other owners combined have in the industry where this new business will compete?

INTERVIEWER NOTE: ESTIMATE IS BETTER THAN DON'T KNOW

RECORD YEARS:
Don't Know - 999999

Question for Industry (Wave 1)

ASK ALL
QB4 NASCENT TEXT: What industry is this business going to be in? **SINGLE RESPONSE**
(Q127) YOUNG FIRM TEXT: What industry is this business in? **SINGLE RESPONSE**

INTERVIEWER NOTE: READ OUT LIST IF RESPONDENT UNCLEAR.

1	Retailing
2	Hospitality (Restaurant, hotel/accommodation, bar or nightclub)
3	Customer of consumer service
4	Health, education or social services
5	Manufacturing
6	Construction
7	Agriculture
8	Mining
9	Wholesale
10	Transportation
11	Utilities
12	Communications
13	Finance
14	Insurance
15	Real Estate
16	Business consulting or service
17	Other

Note. Few startups changed the industry they operated in across the waves. As a result, in the first and third study, the latest industry reported between the first and fourth wave was the one taken into account in the results. Most high-potential startups reported their industry in the first wave, which was only taken into account for the first and third study.

Question for Discontinuity (Wave 5)

W5_1. You may recall that you have previously been interviewed about your business <INSERT MOST UPDATED BUSINESS NAME> as part of Queensland University of Technology's study of new business. We are now following up with a short, last interview and eager to hear what has happened in your case. Are you or anyone else still working on <INSERT MOST UPDATED BUSINESS NAME> or has it been terminated? [cf. A0] *Interviewer Note: change in business name and/or slight to moderate change in business focus = we regard it as the same.*

1	Still going
3	Discontinued
8	DO NOT READ OUT 'Don't know'
9	DO NOT READ OUT 'Refused'

Question for Government Support (Wave 5)

ASK ALL

W5_87. Did this business or its founders ever participate in or benefit from any government support for starting or running the business, including grants, advice, training, tax concessions, or the like?

1	Yes	
2	No (all informal)	
8	DO NOT READ OUT Don't know	
9	DO NOT READ OUT Refused	

Question for Government Type of Support (Wave 5)

ASK IF W5_87 = 1

W5_88- W5_94. Which of the following forms of support have you received through a government program or agency? (Read alternatives and record answer for each)

	Yes	No
W5_88. Grants	1	2
W5_89 Advice	1	2
W5_90. Training	1	2
W5_91. Mentoring	1	2
W5_92. Tax concessions	1	2
W5_93. Tax rebates / offsets	1	2
W5_94. Mediation services	1	2

Question for Reasons for Discontinuity (Wave 5)

X1-X5. I am now going to read out some possible reasons why you are no longer working on this business, For each of the statements could you say whether you completely disagree; partly disagree; are neutral; partly agree, or completely agree. You disengaged because... **READ ITEMS FROM LIST.**

	Completely disagree	Partly disagree	Neutral	Partly agree	Completely agree	DK	Refused
X1. Demand for your products or services looked less promising than previously thought	1	2	3	4	5	8	9
X2. Achieving high profitability looked less likely than previously thought	1	2	3	4	5	8	9
X3. You ran into obstacles that made it very difficult to keep the business going	1	2	3	4	5	8	9
X4. You found another job or business that looked more promising	1	2	3	4	5	8	9
X5. Disagreement among the owners made it difficult to continue	1	2	3	4	5	8	9
X6. Changes in your personal life made it difficult or impossible to continue	1	2	3	4	5	8	9

Note. The third study results regarding the reasons for discontinuity only took into account startups that answered the Likert Scale (from 1 to 5), excluding startups refusing to answer or not knowing. The share of importance weighed by the Likert Scales was computed as follows, taking for example the Obstacles (X3) variable:

Let $X_{i,n}$ be the likert scale (between 1 and 5) associated with the answer to the question X_i for the n^{th} startup: $\forall i \in \llbracket 1; 6 \rrbracket, \forall n \in \llbracket 1; 119 \rrbracket$, Importance of $X_3 = \frac{\sum_{n=1}^{119} X_{3,n}}{\sum_{n=1}^{119} \sum_{i=1}^6 X_{i,n}} = \frac{435}{1943} \approx 22\%$

Appendix B: First Study Results (High-Potential Startups Only)

Figure 1bis: Tree Diagram of Australian High-Potential Startups' Growth Path Sequences (Revenue Based)

Path no.	Frequency T+1	Frequency T+2	Frequency T+3
1			26.3% (+)
2		42.1% (+)	2.6% (0)
3			13.2% (-)
4			2.6% (+)
5	63.2% (+)	5.3% (0)	2.6% (0)
6			0% (-)
7			13.2% (+)
8		15.8% (-)	0% (0)
9			2.6% (-)
10			2.6% (+)
11		2.6% (+)	0% (0)
12			0% (-)
13			0% (+)
14	7.9% (0)	2.6% (0)	2.6% (0)
15			0% (-)
16			2.6% (+)
17		2.6% (-)	0% (0)
18			0% (-)
19			2.6% (+)
20		15.8% (+)	0% (0)
21			0% (-)
22			7.9% (+)
23	28.9% (-)	2.6% (0)	0% (0)
24			2.6% (-)
25			5.8% (+)
26		10.5% (-)	0.6% (0)
27			1.7% (-)
Total	100%	100%	100%

Note. n=38. The study repeats the first study, taking only into account startups defined as high-potential out of the sample defined in section 2.2.2. The total is subject to round results.

Appendix C: Entrepreneur's Programme Application

Note. Source from the Australian Government (2016a). Focus on the Accelerating Commercialisation subprogram.

Page 3: Eligibility

Part A. Eligibility

A.1. Eligibility Criteria

The following is provided as eligibility guidance for applications under Accelerating Commercialisation.

At the time of an application you must be one of the following:

- a non tax-exempt company¹ incorporated under the *Corporations Act 2001* (Cth) that is registered for GST and its trading activities
 - form a sufficiently significant proportion of its overall activities as to merit it being described as a trading corporation, or
 - are a substantial and not merely peripheral activity of the corporation;
- the commercialisation office of an Australian University or Publicly Funded Research Organisation (PFRO);
- an eligible partner entity that is a company, or
- an individual or researcher, partnership or unincorporated trustee who agrees to form a non tax-exempt company incorporated under the *Corporations Act 2001* (Cth) if your application for Accelerating Commercialisation funding is successful.

And you are able to satisfy the following:

- You have received Commercialisation Guidance²;
- You have a novel product, process or service you wish to commercialise and trade to customers external to the state or territory of your place of business³;
- You comply with the *Workplace Gender Equality Act 2012* (Cth).

If you are seeking grant funding, you must also satisfy the following:

- You meet the turnover limits specified in the Customer Information Guide;
- You have ownership, access to, or beneficial use of, any intellectual property that is the subject of, or is necessary to carry out your commercialisation project;
- You are able to demonstrate an ability to fund at least 50 per cent of the cost of the eligible project, other than from Government Grant Sources; and
- Your proposed expenditure is for an eligible commercialisation project as specified in the Customer Information Guide.

If you are seeking to join the Portfolio only, you must also satisfy the following:

- You have received Commercialisation Guidance²;
- You meet the turnover limits specified in the Customer Information Guide;
- You have a commercialisation strategy that aims to achieve at least one of the following:
 - Complete the development of a novel product, process or service;
 - Prove commercial viability of a novel product, process or service; or
 - Expand commercialisation of your novel product, process or service in existing markets or into new markets; and
- You have ownership, access to, or beneficial use of, any intellectual property that is the subject of, or is necessary to carry out your commercialisation project.

¹ Can be an incorporated trustee applying on behalf of a trust.

² Commercialisation Guidance is a range of services for which you may receive one or more of the following from AusIndustry or a Commercialisation Adviser:

- Feedback on your eligibility for other activities under Accelerating Commercialisation
- Referral to other Federal, State or Territory Government programmes;
- Referral to services provided under Business Management or Research Connections (other elements of the Entrepreneurs' Programme);
- Guidance and feedback on your proposed commercialisation project or commercialisation strategy;
- Guidance on the application process for other activities under Accelerating Commercialisation.

³ Place of business will be taken to be the business street address in your application form.

Part C. Project Details and Funding

C.1. Funding

What are you interested in applying for under Accelerating Commercialisation? Select one option only:

Grant Funding ► If yes, enter the amount of funding you are applying for below.
\$

Portfolio only.

C.2. Project Details

Are you developing a product, process or service?

Product Process Service

Briefly describe the novel product, process or service that you are intending to commercialise.

250 word limit

How is it novel or innovative? For example how it is different from existing products currently available?

250 word limit

What technology is core to the invention⁸? Select only one. Refer to [Appendix A](#) for definitions.

- Biotechnology
- Software
- Technology Systems and Hardware
- Manufacturing, engineering and design.

What is the target market for the novel product, process or service? Select all that apply. Refer to [Appendix A](#) for definitions.

- Automotive, aviation and marine
- Business, marketing, communications and finance
- Defence, security and safety
- Education and training
- Environment and water management
- Entertainment, tourism and sport/recreation
- Food and Agribusiness
- Infrastructure, Housing & Transport systems
- Mining equipment technology and services
- Medical technology and pharmaceuticals

⁸ This is the substance of the invention, not its intended use.

Acknowledgment

The significant financial support for the CAUSEE study that made this research possible is gratefully acknowledged. The CAUSEE data collection, documentation, and release were funded by The Australian Research Council (grants DP0666616 and LP0776845); the QUT Business School; industry partners BDO Australia and National Australia Bank, and the Australian Government Department of Industry, Innovation and Science.

References

- ACARA. (2015, December 01). The new Australian Curriculum: pathway to ICT success. Retrieved from Australian Curriculum Assessment and Reporting Authority: http://acara.edu.au/verve/_resources/20151201_Response_to_ICT_article.pdf
- ASIC. (2016, January). 2016 Company registration statistics. Retrieved from Australian Securities & Investments Commission: <http://asic.gov.au/regulatory-resources/find-a-document/statistics/company-registration-statistics/2016-company-registration-statistics/>
- Australian Government. (2014). *Australian Innovation System Report*. Retrieved from the Office of the Chief Economist, Department of Industry: <http://industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/Australian-Innovation-System/Australian-Innovation-System-Report-2014.pdf>
- Australian Government. (2015a). *Australian Industry Report*. Retrieved from the Office of the Chief Economist, Department of Industry: <http://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/AIR2015.pdf>
- Australian Government. (2015b). *Regional Telecommunications Review 2015: Unlocking the potential in regional Australia*. Retrieved from <http://www.rtirc.gov.au/wp-content/uploads/sites/2/2015/10/RTIRC-Independent-Committee-Review-2015-FINAL-Low-res-version-for-website.pdf>
- Australian Government. (2016a). Accelerating Commercialisation. Retrieved May 26, 2016, from the Department of Industry, Innovation, and Science: <https://www.business.gov.au/assistance/internal-assistance/accelerating-commercialisation>
- Australian Government. (2016b). Entrepreneurs' Programme. Retrieved May 26, 2016, from the Department of Industry, Innovation and Science:

<https://www.business.gov.au/assistance/internal-assistance/entrepreneurs-programme-summary#bm>

Australian Government. (2016c). Innovation Connections. Retrieved May 26, 2016, from the Department of Industry, Innovation and Science:

<https://www.business.gov.au/Assistance/Internal-Assistance/Innovation-Connections>

Autio, E., Kronlund, M., & Kovalainen, A. (2007). *High-Growth SME Support Initiatives in Nine Countries: Analysis, Categorization, and Recommendations*. Helsinki: MTI Publications.

Baghai, M., Redhill, D., Richardson, C., & Vorster, G. (2014). *Positioning for prosperity? Catching the next wave (Deloitte)*. Retrieved from

<http://www2.deloitte.com/au/en/pages/building-lucky-country/articles/positioning-for-prosperity.html>

Barringer, B. R., Jones, F. F., & Neubaum, D. O. (2005). A quantitative content analysis of the characteristics of rapid-growth firms and their founders. *Journal of Business Venturing, 20*(5), 663 - 687. doi:10.1016/j.jbusvent.2004.03.004

Bennett, R., & Robson, P. (2003). Changing Use of External Business Advice and Government Supports by SMEs in the 1990s. *Regional Studies, 37*(8), 795-811. doi:10.1080/0034340032000128721

Brñnback, M., Carsrud, A. L., & Kiviluoto, N. (2014). *Understanding the myth of high growth firms*. DE: Springer Verlag.

Cassar, G., & Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. *Accounting & Finance, 43*(2), 123-147. doi:10.1111/1467-629X.t01-1-00085

CAUSEE. (2016). Comprehensive Australian Study of Entrepreneurial Emergence. Retrieved from QUT: <https://www.qut.edu.au/research/research-projects/the-comprehensive-australian-study-of-entrepreneurial-emergence-causee>

Cheever, P. (2011, July 26). Why was the Commercial Ready Program shut down? A story of a damaging Tyranny of Distance. Retrieved from the Australian Institute for Innovation: <http://www.australianinstituteforinnovation.org.au/Why-was-the-Commercial-Ready-Program-shut-down-A-story-of-a-damaging-Tyranny-of-Distance/>

- Cleveland, W. S., & Loader, C. (1996). Smoothing by Local Regression: Principles and Methods. In *Statistical Theory and Computational Aspects of Smoothing* (pp. 10-49). Physica-Verlag HD.
- Clune, B. (2014, April 28). The Innovation Investment Fund branded a failure. *StartupSmart*. Retrieved from <http://www.startupsmart.com.au/advice/business-planning/the-industry-innovation-fund-branded-a-failure/>
- Cooper, A. C., Woo, C., & Dunkelberg, W. C. (1989). Entrepreneurship and the initial size of the firm. *Journal of Business Venturing*, 4(5), 317-332. doi:10.1016/0883-9026(89)90004-9
- Davidsson, P., & Delmar, F. (2006). High-growth firms and their contribution to employment: The case of Sweden. In F. Delmar, & J. Wiklund, *Entrepreneurship and the Growth of Firms* (pp. 156-178). Cheltenham: Elgar.
- Davidsson, P., & Wiklund, J. (2000). Conceptual and empirical challenges in the study of firm growth. In *The Blackwell Handbook of Entrepreneurship* (pp. 26-44). Oxford: Blackwell Business.
- Davidsson, P., Achtenhagen, L., & Naldi, L. (2010). Small firm growth. *Foundations and Trends in Entrepreneurship*, 6(2), 69-166. doi:10.1561/03000000029
- Davidsson, P., Steffens, P. R., Gordon, S. R., Garonne, C., & Senyard, J. M. (2009). *Business Creation Processes in Australia : What Start-Up Attempts Get Up and Running, and Why? - A Preliminary Assessment*. Retrieved from <http://eprints.qut.edu.au/>
- Davila, A., Foster, G., He, X., & Shimizu, C. (2015, February). The rise and fall of startups: Creation and destruction of revenue and jobs by young companies. *Australian Journal of Management*, 40(1). doi:10.1177/0312896214525793
- Davino, C., Furno, M., & Vistocco, D. (2013). *Quantile Regression: Theory and Applications*. Chichester, West Sussex: John Wiley & Sons.
- Dias, D. (2016a, March 18). "Bloody good": Australian startup community welcomes government's tax incentives package as "one of the most generous in the world. *StartupSmart*. Retrieved from <http://www.startupsmart.com.au/advice/legal/politics/peak-startup-advocates-welcome-bloody-good-early-stage-tax-incentives/>

- Dias, D. (2016b, May 02). Queensland government announces \$8 million program to lure startups from around the world. *StartupSmart*. Retrieved from <http://www.startupsmart.com.au/advice/growth/innovation/queensland-government-embraces-startup-thinking-to-lure-in-entrepreneurs-and-innovators/>
- Eby, L. T. (1997). Alternative Forms of Mentoring in Changing Organizational Environments: A Conceptual Extension of the Mentoring Literature. *Journal of Vocational Behavior*, 51(1), 125-144. doi:10.1006/jvbe.1997.1594
- Euromonitor International. (2015, May). *Australia: Country Profile*. Retrieved from Passport GMID Database
- Euromonitor International. (2016, March 15). *Australia: Country Profile*. Retrieved from Passport GMID Database
- Freedman, D. A. (2005). *Statistical Models: Theory and Practice*. Cambridge University Press.
- Garnsey, E., Stam, E., & Heffernan, P. (2006). New firm growth: Exploring processes and paths. *Industry and Innovation*, 13(1), 1-20. doi:10.1080/13662710500513367
- Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *The Academy of Management Review*, 10(4), 696-706. doi:10.5465/AMR.1985.4279094
- Giles, D. (2013, May 02). Good Old R-Squared! [Web log post]. Retrieved from <http://davegiles.blogspot.com.au/2013/05/good-old-r-squared.html>
- Global Entrepreneurship Monitor. (2014). *Global Australia National Report*. Retrieved from <http://www.gemconsortium.org/report>
- Gruenhagen, J., Davidsson, P., Gordon, S., Salunke, S., Senyard, J., Steffens, P., & Stuetzer, M. (2016). *Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE). Handbook & User Manual, Version 7*. Brisbane: Australian Centre for Entrepreneurship Research (ACE) at QUT Business School.
- Hambrick, D. C., & Crozier, L. M. (1985). Stumblers and stars in the management of rapid growth. *Journal of Business Venturing*, 1(1), 31-45. doi:10.1016/0883-9026(85)90005-9
- Henrekson, M., & Johansson, D. (2010). Gazelles as job creators: a survey and interpretation of the evidence. *Small Business Economics*, 35(2), 227-244. doi:10.1007/s11187-009-9172-z

- Hoffman, R. (2015, September 14). *CS183C: Technology-enabled Blitzscaling: The Visible Secret of Silicon Valley's Success*. Retrieved from LinkedIn Pulse:
<https://www.linkedin.com/pulse/cs183c-technology-enabled-blitzscaling-visible-secret-reid-hoffman>
- Kangasharju, A. (2000). Growth of the smallest: Determinants of small firm growth during strong macroeconomic fluctuations. *International Small Business Journal*, 20(1), 28-43. doi:10.1177/0266242600191002
- Kelley, D., Herrington, M., & Singer, S. (2016). *GEM Global Entrepreneurship Monitor 2015/2016 Global Report*. Retrieved from <http://www.gemconsortium.org/report>
- Kruger, M., & Cacioppe, J. (2014). *Startup Ecosystem Report South East Queensland*. Retrieved from Boundlss: <http://www.boundlss.com/blog/seq>
- Lines, L., Patel, Y., & Hone, K. S. (2004). Online form design: Older adults' access to housing and welfare services. In *HCI and the Older Population Workshop* (pp. 21-22). Leeds, UK. Retrieved from
<http://www.dcs.gla.ac.uk/~stephen/workshops/utopia/workshop/proceedings.pdf>
- Malhotra, N. (2006). *Marketing research*. Frenchs Forest, NSW: Pearson Education Australia.
- Maritz, A. (2015, December 02). To deliver more high-growth startups Australia needs an entrepreneurship system. *The Conversation*. Retrieved from
<https://theconversation.com/to-deliver-more-high-growth-startups-australia-needs-an-entrepreneurship-system-51473>
- Martin, E., & Polivka, A. E. (1995). Diagnostics for Redesigning Survey Questionnaires Measuring Work in the Current Population Survey. *Public Opinion Quarterly*, 59(4), 547-567. doi:10.1086/269493
- Mason, C., & Brown, R. (2013). Creating good public policy to support high-growth firms. *Small Business Economics*, 40(2), 211-225. doi:10.1007/s11187-011-9369-9
- Mendenhall, W., & Sincich, T. (2014). *A second course in statistics: Regression analysis* (7th ed.). Frenches Forest, NSW: Pearson.
- Merrick, L. (2016, February 11). Top 7 Government Grants For Startups In 2016. Retrieved from Buzinga: <http://www.buzinga.com.au/buzz/government-grants-for-startups/>
- Mount, J., Zinger, J., & Forsyth, G. R. (1993). Organizing for development in the small business. *Long Range Planning*, 26(5), 111-120. doi:10.1016/0024-6301(93)90083-R

- Mumby, D. (2016, May 13). The Australian startup ecosystem is on the edge of a perfect storm. *StartupSmart*. Retrieved from <http://www.startupsmart.com.au/advice/funding/the-australian-startup-ecosystem-is-on-the-edge-of-a-perfect-storm/>
- NESTA. (2009, October). *The vital 6 per cent How high-growth innovative businesses generate prosperity and jobs*. Retrieved from: <https://www.nesta.org.uk/sites/default/files/vital-six-per-cent.pdf>
- OECD. (2010). *High-Growth Enterprises: What Governments Can Do to Make a Difference*. Paris: OECD Publishing. doi:10.1787/9789264048782-en
- OECD. (2012, October 04). *OECD Internet Economy Outlook 2012*. Paris: OECD Publishing. doi:10.1787/9789264086463-en
- Papademetriou, D. G., & Sumption, M. (2013). *Attracting and Selecting from the global talent pool—policy challenges*. Washington, DC: Migration Policy Institute. Retrieved from <http://www.w.w.migrationinformation.net/sites/default/files/publications/GlobalTalent-Selection.pdf>
- Parliament of Australia. (2016, February 22). Corporations Amendment (Crowd-sourced Funding) Bill 2015. Retrieved from Parliament of Australia: http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bld=r5588
- PwC. (2013, April). *The startup economy, Digital Pulse: How to support tech startups and accelerate Australian innovation*. Retrieved from <https://www.digitalpulse.pwc.com.au/wp-content/uploads/2013/04/PwC-Google-The-startup-economy-2013.pdf>
- PwC. (2016, May 04). *2016-17 Australian Federal Budget*. Retrieved from <http://www.pwc.com.au/tax/assets/federal-budget/2016-federal-budget-analysis.pdf>
- PwC Chair in Digital Economy. (2015). *Annual Report*. Retrieved from <https://drive.google.com/file/d/0B2VvNOXzJS3LZFN5YjZnM0p5ZU0/view?pref=2&pli=1>
- Queensland Government. (2016a). Startup Attraction – Hot DesQ. Retrieved May 29, 2016, from Advance Queensland: Jobs now, jobs for the future: <http://advance.qld.gov.au/entrepreneurs-startups/startup-attraction-hot-desq.aspx>

- Queensland Government. (2016b). Startup Queensland Fund. Retrieved May 29, 2016, from Advance Queensland: Jobs now, jobs for the future: <http://advance.qld.gov.au/entrepreneurs-startups/startup-qld.aspx>
- QUT Business School, Australian Centre for Entrepreneurship, School of Management. (2016, 15 March). *CAUSEE Dataset and documentation*. Retrieved from <http://eprints.qut.edu.au/49327/>
- Schwarz, N. (1999). Self-reports: how the questions shape the answers. *American psychologist*, 54(2), 93-105. doi:10.1037/0003-066X.54.2.93
- Senyard, J. M., Davidsson, P., Gordon, S. R., & Steffens, P. R. (2009). *The comprehensive Australian Study of entrepreneurial emergence (CAUSEE) high potential nascent entrepreneurs : some preliminary findings*. Retrieved from <http://eprints.qut.edu.au>
- Senyard, J., Baker, T., Steffens, P., & Davidsson, P. (2014). Bricolage as a Path to Innovativeness for Resource-Constrained New Firms: Bricolage as a Path to Innovativeness. *Journal of Product Innovation Management*, 31(2), 211-230. doi:10.1111/jpim.12091
- Shane, S. (2008). *The Illusions of entrepreneurship*. London: Yale University Press.
- Shane, S. (2009). Why Encouraging More People to Become Entrepreneurs Is Bad Public Policy. *Small Business Economics*, 33(2), 141 - 149. doi:10.1007/s11187-009-9215-5
- Simes, R., O'Mahony, J., & Lyster, C. (2013). *Connected Small Business How Australian small businesses are growing in the digital economy*. Retrieved from <https://www.deloitteaccesseconomics.com.au/uploads/File/Connected%20Small%20Business%20%20-%20final.pdf>
- Spike Innovation. (2015, October). *Boosting High-Impact Entrepreneurship in Australia: A role for universities*. Retrieved from the Office of the Chief Economist, Australian Government: <http://www.chiefscientist.gov.au/wp-content/uploads/Boosting-High-Impact-Entrepreneurship.pdf>
- Startup Muster. (2015). *Startup Muster 2015 Report*. Retrieved from <http://www.startupmuster.com/>
- StartupAUS. (2015, April). *Crossroads 2015: An action plan to develop a vibrant tech startup ecosystem in Australia*. Retrieved from <http://startupaus.org/wp-content/uploads/2015/04/Crossroads-2015.pdf>

Startups in Australia: From lucky to plucky. (2016). *The Economist*, 412(8967). Retrieved from <http://www.economist.com/news/business/21685462-entrepreneurial-prime-minister-calls-culture-innovation-lucky-plucky>

Stinchcombe, A. L. (1965). Social structure and organizations. In A. L. Stinchcombe, *Handbook of Organizations* (pp. 142-193). Chicago: Rand McNally.

Symeonidis, G. (1996). *Innovation, firm size and market structure: Schumpeterian*. Paris: OECD Publishing. doi:10.1787/603802238336

Tech Startups Special Report. (2014, January 18). *The Economist*, 410.

Venkatraman, N., & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. *The Academy of Management Review*, 11(4), 801-814. doi:10.5465/AMR.1986.4283976

World Bank. (2016). *World Development Report 2016: Digital Dividends*. Washington, DC: World Bank. doi:10.1596/978-1-4648-0671-1