

Copyright © 2001 The authors.

This is the author's version of the work. It is posted here with the permission of the publisher for your personal use. No further distribution is permitted. If your library has a subscription to these conference proceedings, you may also be able to access the published version via the library catalogue.
Regional differences in business start-up rates in Australia: implications for future research and public policy.

Professor Kevin Hindle
Director of Entrepreneurship Research
Australian Graduate School of Entrepreneurship
Swinburne University of Technology
Melbourne, Australia
Tel: +61 3 9214 8732
Email: khindle@swin.edu.au

Susan Rushworth
Research Project Officer
Australian Graduate School of Entrepreneurship
Swinburne University of Technology
Melbourne, Australia
Tel: +61 3 9214 5871
Email: srushworth@swin.edu.au

Paper presented in the refereed stream of the ANZAM 2001 conference
5th - 8th December 2001
UNITEC and Massey University
Auckland, New Zealand
Regional differences in business start-up rates in Australia: implications for future research and public policy.

ABSTRACT

The Global Entrepreneurship Monitor (GEM) project in Australia provided both data and theoretical framework for this investigation of regional differences in entrepreneurial activity within Australia and the factors that might underlie such differences.

This study found that entrepreneurial activity as measured by participation in business start-ups varied significantly between 11 defined regions of Australia. Factors found to be associated with high start-up activity were personal acquaintance with someone who had recently started a business (strong and statistically significant) and the perception of good opportunities for starting a business locally (indicative only). Participation rate by age range across region varied widely. Sample size precluded more in-depth analysis.

The study indicates a need for a research program designed to produce data and analysis that might be constructively shared by those who wish to foster entrepreneurship in Australia.

Regional differences in business start-up rates in Australia: implications for future research and public policy.

OBJECTIVES AND RATIONALE OF THE STUDY

Background

At the broad level of differentiation, State governments within the Australian federal system spend a great deal of taxpayer money in promoting and even creating points of difference between themselves and other states in the hope of attracting business investment. At the very specific level of interest to this paper, the creation of new ventures – support for entrepreneurship – periodically becomes a key component of governments’ stimulation endeavours. This is certainly so in the last couple of years. A count of the state and federal government programs contained in the publication Commonwealth and State Government Programs Supporting Innovation in Firms At October 1999, (DISR 1999), reveals 148 programs. Of these 23 programs (listed in Appendix A) are classifiable under the specific heading of start-up support.

The State government offerings within this raft of programs are often aimed at stimulating entrepreneurship and innovation in one region rather than another. However, many of the benefits ultimately touted as ‘regional advantages’ may or may not be relevant to entrepreneurial start-up. In the absence of quality research, we simply do not know. While significant sums are spent on creating and advertising entrepreneurship fostering programs, almost nothing is spent in support for structured, dispassionate research in the area. The author of this study was unable to find any publication either written by or commissioned by any State government that had ever even asked – let alone attempted to answer – the fundamental, dispassionate, generic question:

‘What regional factors are associated with higher levels of entrepreneurial start-up?’

This study made a start by asking three main questions.

1. Do entrepreneurial start-up rates in the major regions of Australia differ significantly?
2. If significant differences are observed, what regional factors are associated with higher levels of entrepreneurial start-up?

3. In the interests of improved public policy, what should be done to move beyond the limited volume and utility of current data and develop an empirically-based theory of the factors and forces, which make one region of a nation more entrepreneurial than another?

The primary question, though purely empirical, is very important to the formation of public policy aimed at fostering entrepreneurship in Australia. It has never been asked or answered in any objective, quantitative manner prior to this study. The second question was designed to use available, appropriate measurements to explain differences if any were observed. The third question was aimed at providing the basis for better research and better public policy. The ultimate answer to this third question requires the outline of an adequately funded research design to produce data and analysis that might be constructively shared by all who wish to foster entrepreneurship in Australia. It would be especially helpful to State Governments whose history in this area is one of good intentions based on ad hoc research or no research. The absence of an empirically grounded theory has contributed to the production of programs whose likelihood of success is a lot lower than it otherwise could and should be.

Does research matter? Much of the regional variety in start-up support programs probably amounts to desirable diversity. Much of the regional duplication in start-up support programs probably amounts to desirable commitment to common necessities – programs supporting basic entrepreneurship education for example. However, there is little doubt that much of both the variety and duplication of government-supported program activity in the important areas of entrepreneurship and innovation is likely to be both inefficient and ineffective. Observers of government entrepreneurship fostering programs over the last twenty years in Australia often complain about the propensity of new administrations to re-invent broken wheels. Even worse, effective programs often die: babies are thrown out with bath water as the new minister or the new government seeks – with the best will in the world – to do things better. Accordingly, the best aspects of programs that worked well are not shared and enshrined.

In summary, the evidence shows that the history of government initiatives to foster entrepreneurship in Australia is a history of ad-hocism, driven by the lack of high-quality, nationally-focused research on the issue of regionality as a key ingredient in the entrepreneurial process. A small nation in a global marketplace needs to think very carefully about the entrepreneurial clustering it seeks to foster. Such thinking ought to extend to the research upon which entrepreneurial support programs are based. A good collective research base is likely to be an aid to effective and constructive program differentiation, not an impediment to it.

What Australia needs is a well-researched mix of state and federal programs: some universal (such as programs designed to enhance entrepreneurial education) and some peculiarly tailored to support sensible regional clustering based on relevant distinctive competence (such as unique resources like the barrier reef or rainforests for biotechnology initiatives). What the nation does not need is an ever-proliferating potpourri of programs based on hypotheses in the absence of facts.

So, in light of demonstrable need, this paper took a first, tentative step. It made use of existing credible, quantitative, national data, to begin to assess what regional factors are associated with higher levels of entrepreneurial start-up in Australia. The data was collected for the Yellow Pages® Global Entrepreneurship Monitor Australia 2000 (Hindle and Rushworth 2000) - known colloquially as GEM Australia 2000. One ingredient of GEM Australia was a population survey whose data had not previously been used to investigate regional issues.
The Larger Context: a Brief Overview of the GEM Australia Project

For a long time, the national and international importance of entrepreneurship has been suspected, but it has not been measured at the national and international levels in a way that provides consistent data and reliable insight. The Global Entrepreneurship Monitor (GEM) project was conceived to address this. GEM refers to both a set of linked, international research projects and a set of documents that report project results. Internationally, the GEM project brings together some of the world’s leading scholars in entrepreneurship to study the complex relationships between entrepreneurship (with a special emphasis on start-up activity), economic growth and national prosperity. In 2000 the study covered 21 countries, including Australia for the first time.

Every year, each participating country conducts its own independent investigation: but - and this is the key - every national research team uses exactly the same methods and measures in exactly the same way. This permits direct comparison between nations. Each national team consists of a university-based team with special capacity in entrepreneurship research, and a sponsorship support infrastructure given the substantial costs involved in data collection and analysis. Every year, each country produces a national report and GEM’s central coordinating team produces an international Executive Report. This global report summarises the results from all nations and synthesises the most important overall findings from an international perspective. All reports are available as PDF files from www.entreworld.org/gem2000.

The Australian GEM research team is based at the Australian Graduate School of Entrepreneurship at Swinburne University of Technology. The principal national sponsor is Yellow Pages® (owned by online media, search and directories company, Pacific Access). Financial support in the first year was also received from the Department of Communications, Information Technology and the Arts. Acknowledgment of many sources of help received during this year’s project is provided at the end of the GEM document (Hindle and Rushworth 2000: 59-60).

Limitations

The GEM Australia 2000 study (Hindle and Rushworth 2000) was based on an aggregate national perspective: seeing Australia in the context of the world. From a global point of view, the nation is the unit of analysis and all research design is dominated by the motive of facilitating national comparisons. Hence, in the basic GEM population survey for each nation, any regional data generated in the national survey process is simply a ‘bonus prize’ dependent upon the demographic data collected by the omnibus survey vehicle that hosts the GEM questionnaire.

In Australia, as will be seen, some useful but limited regional data was collected. Most importantly, the AC Nielsen telephone omnibus design breaks Australia into 11 distinct regions and the majority of respondents were assignable to a specific region. However, the sample size of 2,089, while excellent for GEM’s nationally oriented investigative purposes, soon has its limitations when one seeks to do cross-tabulations of activities with relatively low occurrences in regions of relatively low population.

Furthermore, in this particular instance the respondent’s region was not captured for 266 respondents. Comparison of quota per region with actual numbers sampled per region indicates an under-sample of about 170 for the Brisbane region. Consequently, the effective sample size for analysis is 1,823 rather than 2,089 and that results for the Brisbane region are less representative than for other regions.

PREVIOUS RESEARCH

There is limited published research on entrepreneurial activity, let alone differences in activity between regions of the same country. Easily available measures of business
activity do not readily distinguish between entrepreneurial ventures and other business activity. Thus obtaining a meaningful measure of the level of entrepreneurial activity in a country or region is a problem in itself, before even addressing the factors that underlay any differences between regions.

The most comprehensive and best-established research project is the Entrepreneurial Research Consortium (ERC) coordinated by Professor Paul Reynolds of Babson College, USA. Conceived in 1992 and with several years spent on developing and refining, the project is now operational in the USA, Sweden, Norway and the Netherlands. The objective of the ERC is to improve understanding about the factors that stimulate start-ups and the factors that improve or impede their chances of success and influence whether they achieve high growth. It operates by identifying and studying nascent entrepreneurs at the time they are launching new ventures and following them up at 12-month intervals over a period of at least two years.

Details of the project can be found on the ERC web site at http://projects.isr.umich.edu/psed together with an overview paper on the US study, which reports that start-up activity is higher in regions that have a higher than average population in the 25-44 age range (Reynolds, 1999).

The method used to identify those involved in starting a business in the GEM study is borrowed from the ERC and has been a major factor in the GEM project's rapid expansion since its 1999 launch.

Of the 21 nations that participated in GEM in 2000, only Germany has attempted any analysis of regional differences. For this purpose, they increased the sample size of their adult population survey to just over 7,000 and their GEM 2000 report devotes a chapter to analysis of regional differences. Their analysis was mostly at the level of the 16 federal states but further analysis was carried out on six regional planning areas selected from the total of 97 because they are dominated by large cities.

The report found that entrepreneurial activity differed markedly between federal states, with a 7-fold difference between the most and least active states. It also found that the planning areas dominated by large cities exhibited a higher level of start-up activity than other planning areas within the same state did. Western Germany overall had significantly more start-up activity than Eastern Germany.

In terms of factors associated with high levels of regional activity, the report found that wide perception of good business opportunities and a tolerance for differences in standard of living were associated with high levels of start-up activity (Sternberg, Otten and Tamasy, 2000).

THEORETICAL FRAMEWORK: THE GEM STUDY

The GEM study provides a suitable theoretical framework for investigation of regional differences in entrepreneurial activity. Although GEM operates at a national level where the unit of analysis is the country, the analysis can equally well be applied at regional level. The theoretical framework of GEM is as follows:

Fundamental Questions

1. Does the level of entrepreneurial activity vary between countries, and, if so, to what extent? (The extent measurements largely depend on comparing data on start-up rates measured in national quantitative surveys).

2. Does the level of entrepreneurial activity affect a country's rate of economic growth and prosperity?

3. What makes a country entrepreneurial?
Theoretical Model

Most studies of economic performance focus on the ‘primary economy’ of large, established firms and industries, and the ‘secondary economy’ of small and medium size enterprises. The focus is on established enterprise. Emerging enterprise, start-ups and new firms - the entrepreneurial sector - is missing. The GEM model adds it in. The GEM project seeks to examine the strength and influence of the entrepreneurial sector of the economy; that is, new firm creation and growth. Both sectors are influenced by the General National Framework Conditions - factors such as tax regime, extent of government intervention and advancement of technology etc.

In addition to this, there is a set of factors that specifically influences the entrepreneurial sector. These are termed the Entrepreneurial Framework Conditions. The GEM conceptual model identifies these as: Financial Support; Government Policy; Government Programs; Education and Training; Research and Development Transfer; Commercial and Professional Infrastructure; Market Openness; Access to Physical Infrastructure, and Cultural and Social Norms. These nine conditions combine with the existence of new venture opportunities (plus perception of their existence, which may not be the same thing), and the capacity and motivation of the population to capitalise on such opportunities to influence the rate of new firm creation and growth.

The international GEM 2000 Executive Report (Reynolds et al 2000) describes the model in greater detail. Figure 1 illustrates it.

![Figure 1 - The complete GEM conceptual model](image)

**Fundamental Methods**

- An adult population survey randomly sampling 2,000 typical adults. (This is the data base that was used for the investigation reported in this paper).
- Face-to-face interviews with about 36 experts (approximately four experts in each of the nine entrepreneurial framework conditions described above).
- The use of selected national economic data, measured in standard units, from reliable international sources including the Organisation for Economic Cooperation and Development (OECD) and World Bank.
Using the GEM Model for the Purposes of this Study.

The adult population survey portion of GEM provided the data for this study. It produced eight variables directly germane to its first two questions:

**THIS STUDY’S QUESTION 1:** Do entrepreneurial start-up rates in the major regions of Australia differ significantly?

- Cross-tabulating responses to the relevant GEM question permits calculation of the number and percentage (start-up rate) of entrepreneurial start-up participants in each region.

**THIS STUDY’S QUESTION 2:** If significant differences are observed, what regional factors are associated with higher levels of entrepreneurial start-up?

As discussed, the GEM research model is deeply concerned with both entrepreneurial capacity and entrepreneurial opportunity. Two useful measures relevant to entrepreneurial capacity are:

- age distribution and
- acquaintance with an entrepreneur (the questionnaire asked whether, in the past two years, the respondent had been personally acquainted with someone who had started a business).

The GEM questionnaire produced data for five variables important to the perception of opportunity. The authors of the German GEM regional study (Sternberg, Otten and Tamasy 2000: 32-37) used these variables extensively in their analysis, calling them, collectively, measures of the ‘climate for start-ups’.

This study used the same variables. They are:

- Belief in community preference for similar living standards.
- Belief that fear of failure deters business start-up.
- Belief in good business opportunities locally in next six months.
- Belief that there is community resentment of those becoming wealthy by starting a new business.
- Belief that there is community respect for those starting a new business

**METHOD**

Population, Sampling and Data Collection

The method employed for GEM Australia 2000 was a telephone survey of adults, carried out as part of an existing omnibus survey. The survey was conducted in June 2000 by AC Nielsen, whose methodology divides Australia into 11 geographic regions (represented by variable `auregion`). 2,089 respondents were surveyed in total.

To measure participation in new venture creation the key question asked was:

‘You are, alone or with others, currently trying to start a new business, including any type of self-employment.’

This variable `bstart` is NOT the variable used to represent start-up participation in the GEM report. That variable is based on `bstart`, but is subject to three further filtering questions:

- respondent must be actively involved in the start-up;
- respondent must have an ownership stake in the business; and
- start-up must have paid wages no longer than 3 months (includes never).

Variable `bstart` was chosen in preference for two reasons:
1. It includes more respondents, which makes the sample size by region more significant and therefore allows deeper analysis.

2. It provides a better assessment of the overall impact of start-ups by including people who are actively involved, but will not have an ownership stake. Dividing the number of ‘yes’ respondents by the total number of respondents representing a region delivers an objective measure of independent start-up activity by region.

**Analytical Method and Techniques**

Statistical analysis attempted to answer the first two of the three primary questions of this study:

1. **Do entrepreneurial start-up rates in the major regions of Australia differ significantly?**

2. If significant differences are observed, what regional factors are associated with higher levels of entrepreneurial start-up?

For question 1 the two hypotheses tested were:

- **H₀**: entrepreneurial start-up rate does not differ between regions.
- **H₁**: entrepreneurial start-up rate differs between regions.

A cross-tabulation and chi-square analysis of the variable `bstart` with the variable `auregion` was used to analyse the pattern of regional start-up activity and indicate whether or not the differences displayed were statistically significant.

For question 2, a two-stage approach was used:

**Step 1:** If and only if the evidence supported **H₁** for question one, the following hypotheses were investigated for each of the two ‘capacity’ and five ‘opportunity’ variables (previously discussed in the theoretical framework section of the paper).

- **H₀**: prevalence of the variable does not differ between regions.
- **H₁**: prevalence of the variable differs between regions.

Again, the method of analysis was cross-tabulation and chi-square testing of region against each of the other seven ‘capacity’ and ‘opportunity’ variables.

**Step 2:** For those variables for which **H₁** above was supported, correlation between the start-up participation rate by region and the percentage of the population responding positively to the variable control question was analysed. This was done using aggregates of the variables by dividing the number of positive responses by the number of respondents in each region and correlating with the startup participation rate in each region. The hypotheses were:

- **H₀**: there is no significant correlation between the variable and level of start-up activity by region.
- **H₁**: the variable is significantly correlated with level of start-up activity by region.

The chosen test statistic for cross-tabs was Pearson’s chi-square ($\chi^2$) which tests the hypothesis that the row and column variables in a cross-tabulation are independent, without indicating strength or direction of the relationship. The chosen test statistic for correlations was Pearson’s correlation coefficient. For both tests significance level was set at $\alpha = 0.05$ - that is whenever the p-value of the test was less than 0.05, **H₁** was accepted.

All analysis was conducted using SPSS version 10.0.7.
RESULTS

Analytical Findings

QUESTION 1. ‘Do entrepreneurial start-up rates in the major regions of Australia differ significantly?

ANSWER: Yes it does. With a p-value of 0.007, the differences are strongly significant. Figure 2 illustrates the variation.

![Involvement in Start-up Activity by Region of Residence](image)

Figure 2 - Involvement in start-up activity by region of residence

QUESTION 2. ‘If statistically significant differences are observed, what regional factors are associated with higher levels of entrepreneurial start-up?

STEP 1: Which of the seven impact variables differ significantly with region?

ANSWER: Findings are summarised in Table 1. Four variables were found to vary significantly by region. These were:

- age distribution
- knowing an entrepreneur
- belief that there are good opportunities for starting a business in the region
- belief in community respect for those who start a business

![Table 1 - Summary results of the Pearson chi-square significance test for all variables.](image)

Table 1 - Summary results of the Pearson chi-square significance test for all variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Chi-square</th>
<th>Deg. Free</th>
<th>p-value</th>
<th>Support H&lt;sub&gt;1&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age distribution</td>
<td>46.909</td>
<td>22</td>
<td>0.002</td>
<td>✔</td>
</tr>
<tr>
<td>Acquaintance with an entrepreneur</td>
<td>36.083</td>
<td>11</td>
<td>0</td>
<td>✔</td>
</tr>
<tr>
<td>Perception of Opportunity Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belief in community preference for SIMILAR LIVING STANDARD</td>
<td>17.741</td>
<td>11</td>
<td>0.088</td>
<td>✗</td>
</tr>
<tr>
<td>Belief that FEAR OF FAILURE deters business startup</td>
<td>13.314</td>
<td>11</td>
<td>0.273</td>
<td>✗</td>
</tr>
<tr>
<td>Belief in good business OPPORTUNITIES in next six months</td>
<td>38.053</td>
<td>11</td>
<td>0</td>
<td>✔</td>
</tr>
<tr>
<td>Belief in community RESENTMENT of those</td>
<td>11.057</td>
<td>11</td>
<td>0.439</td>
<td>✗</td>
</tr>
</tbody>
</table>
becoming wealthy by starting a new business
Belief in community RESPECT for those starting a new business

28.057 11 0.003

STEP 2: Of the variables that differ significantly by region, are they significantly correlated with level of start-up participation by region?

This was attempted for only three of the four variables. Because age distribution involves three categories across 11 regions, the sample size in each cell is too small for meaningful analysis. (For example, the 25% participation rate for 'Late Adults' in WA represents only 3 people). Figure 3 illustrates the wide variation in participation rate for each age range / region combination.

![Participation in start-ups by age range across region of residence](image)

ANSWER: A strong and highly significant correlation was found between the proportion of the regional population who knew an entrepreneur and the regional start-up participation rate.

A weaker correlation was found between the proportion of the regional population who perceived good business opportunities in their region and the regional start-up participation rate. This was not statistically significant but was suggestive, especially as the German GEM team found such a relationship. Further analysis was carried out with two outliers discarded, first separately and then together. When both are discarded, the correlation becomes both strong and highly significant.

The two outliers identified were:
- ADELAIDE, which was an outlier in the strong correlation, found between knowing an entrepreneur and start-up participation.
- BRISBANE, which was similarly an outlier, but was also under-represented in the overall sample and therefore is not as representative as results for other regions.

No other significant correlations were found. Table 2 summarises the findings.

<table>
<thead>
<tr>
<th>Environment Variable</th>
<th>Pearson r</th>
<th>p-value</th>
<th>Support H₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3 - Participation in start-ups by age range across region of residence

ANSWER: A strong and highly significant correlation was found between the proportion of the regional population who knew an entrepreneur and the regional start-up participation rate.

A weaker correlation was found between the proportion of the regional population who perceived good business opportunities in their region and the regional start-up participation rate. This was not statistically significant but was suggestive, especially as the German GEM team found such a relationship. Further analysis was carried out with two outliers discarded, first separately and then together. When both are discarded, the correlation becomes both strong and highly significant.

The two outliers identified were:
- ADELAIDE, which was an outlier in the strong correlation, found between knowing an entrepreneur and start-up participation.
- BRISBANE, which was similarly an outlier, but was also under-represented in the overall sample and therefore is not as representative as results for other regions.

No other significant correlations were found. Table 2 summarises the findings.
All regions included
Acquaintance with an entrepreneur 0.678 0.022 ✔
Perception of good business opportunities 0.426 0.191 ✘
Respect in community for entrepreneurs -0.020 0.953 ✘

Brisbane excluded
Acquaintance with an entrepreneur 0.637 0.047 ✔
Perception of good business opportunities 0.533 0.113 ✘

Adelaide excluded
Acquaintance with an entrepreneur 0.813 0.004 ✔
Perception of good business opportunities 0.522 0.122 ✘

Both Brisbane and Adelaide excluded
Acquaintance with an entrepreneur 0.839 0.005 ✔
Perception of good business opportunities 0.705 0.034 ✔

Summary
The study’s primary question is answered in the affirmative. There are statistically significant differences in entrepreneurial start-up rates associated with different regions of Australia.

Two entrepreneurial capacity factors – age distribution and acquaintance with an entrepreneur – also differed significantly dependent upon the region in which survey respondents lived. So did two entrepreneurial opportunity factors – respect for those who start new businesses and optimism in the form of belief that the next six months would provide favourable conditions for a business start-up.

Regional prevalence rates did not differ significantly for belief that everyone should enjoy a similar standard of living or that fear of failure deterred start-up activity or in the level of resentment against those who make a lot of money by starting a new business.

High levels of participation in start-ups were associated with high levels of acquaintance with entrepreneurs. Perception of good business opportunities was indicated and may well be confirmed by a larger sample size. Age distribution of those participating in start-ups varied widely and significantly between regions, but a larger sample size would be needed to examine the nature of these relationships.

DISCUSSION AND IMPLICATIONS

Less than four percent of adults living in rural South Australia were involved in start-up activity. Well over 16 percent of adults in Brisbane had some degree of start-up involvement. Clearly, the range is large and comparisons are intriguing. Not many people would instantly have conjectured that rural Western Australia would have a higher start-up rate than metropolitan Sydney and Melbourne. Are the figures suspect?

One has to be very careful not to ‘over-read’ the results derived from the cross-tabulation for several reasons:

- at the 95% confidence interval, the percentage results should be read at plus or minus one percent given a sample size of 2,000.
- this preliminary study made no attempt to weight cases on the basis of expected age and sex profiles in the population.
- once you go beyond the basic cross-tabulation of region with start-up participation, many of the cells have expected counts of less than 5, which can make the chi-square test unreliable.

11
• the high number of respondents whose region was not stated and the low number of respondents from the Brisbane region reduce the effective sample size and introduce possible distortion.

Even with these limitations in mind, three findings are beyond doubt. Participation in entrepreneurial activity:

• varies significantly between regions of Australia;
• varies significantly with age range and this variation is significantly different across regions; and
• is positively correlated with the proportion of the population who personally know someone who has started a business.

The last of these may seem so intuitively obvious as to be unworthy of note. Clearly the more people who are involved in start-ups in a community, the more members of that community can be expected to know such a person. But it is quite possible that personal acquaintance with someone who has started a business may stimulate an individual to his or her own start-up - in other words the causal direction of the relationship may be two-way. This is significant because raising the profile of community entrepreneurs is a relatively low-cost exercise that might prove to be highly effective.

There is evidence to suggest that the correlation between perception of business opportunities and participation in start-ups, which was found by the German team also applies in Australia. A larger sample size may be all that is needed to confirm it.

Equally interesting is the fact that while the German study found that high entrepreneurial activity was associated with low preference for equality of income this link was not supported by the Australian data. This demonstrates the need to understand our own environment before copying initiatives that seem to have worked elsewhere.

The final question of the study was:

“What should be done to move beyond the limited empirical data we have and develop a theoretically grounded explanation of the factors and forces which make one region of a nation more entrepreneurial than another?”

The simple answer is more research. What GEM supplies at the moment is a very useful start, but the study sample (i.e. those involved in start-up activity) is very small compared to the ‘control’ sample. An immediate and simple improvement would be to increase the overall sample size. Australia benefits from a high level of start-up activity compared with other nations (we ranked 3rd out of the 21 GEM 2000 participant countries). This means that we need only sample half as many of the general population to get as many start-up participants as a nation with lower entrepreneurial activity such as Germany. With a sample large enough for statistically valid analysis at region level, we can start to explore the meaning behind the variances with either supplementary questions to the annual GEM survey or additional, targeted small surveys in selected regions.

Australia is already a passive participant in the Entrepreneurial Research Consortium (ERC) mentioned earlier. The ERC study provides the perfect complement to the GEM study in that it studies entrepreneurial activity at the individual entrepreneur level - the micro level whereas GEM studies it at the macro level. ERC is a more expensive study since it focuses in depth on a much larger number of individuals, but it provides a hugely rich database for analysis. If Sweden, Norway and the Netherlands can operate such a study, there is no reason why it could not be done in Australia.

These two studies combine to give powerful insights into what are the factors behind successful entrepreneurial activity and how policy and initiatives can be designed to increase such activity. Beyond the value of the national data is the international context.
provided by comparable studies in other nations and the longitudinal nature of both projects which allow for trends to be identified and the effectiveness of policy initiatives to be measured. There is no lack of researchers in both public and private sector with the qualifications and motivation to make use of such a database.

If policy makers knew what factors mattered and their regions’ relative strength and weaknesses in those factors, they would be in a better position to offer effective programs and eliminate ineffective ones - such as rental support or one-off, short-term concessions.

It is no great surprise that quantified data on entrepreneurial activity and the factors behind it is lacking in Australia. Such has been the case in most countries and is the motivation behind setting up international projects such as GEM and ERC. But that is changing. Australia has recognised the importance of entrepreneurship and innovation with initiatives such as the National Innovation Summit in February 2000 and the suite of government initiatives announced early this year under the banner of "Backing Australia's Ability". It is time that we supported these initiatives more effectively with objective research data.

REFERENCES


APPENDIX A

Aboriginal Business Link Program (NSW);
Building on IT Strengths (CWLTH);
Business Development Program (CWLTH);
Canberra Youth Business Initiative Program (ACT);
Enterprise Centre Program (TAS);
Getting Started - A Business Assistance Scheme for Youth (NT);
International Women’s Day Business Grant Scheme (QLD);
Investment Ready Program (TAS);
New Enterprise Incentive Scheme (CWLTH and all States);
New Enterprise Loan Guarantee Scheme, (ACT);
New Future in Small Business (ACT);
Pre-Business Workshops (VIC);
Small business seminars and workshops (QLD);
Technology transfer/diffusion program (CWLTH);
Australian Industry Involvement (AII) Program (CWLTH);
Business Growth (NT);
Defence Industry Investment Recognition (DIIREC) Scheme (CWLTH);
Feasibility Study Fund (CWLTH);
Foundry Program (SA);
Centres of Expertise Program, (CWLTH);
Western Australian Innovation Support Scheme (WAISS) (WA);
Information Technology and Telecommunications Commercialisation (SA);
New Industries Development Program (NIDP) (NSW).