

Global Entrepreneurship Monitor
Westpac GEM Australia 2005:
Comparing the innovative propensity of Australian private
business owners with other GEM high-income nations

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The GEM Australia project is based on annual research – principally the annual GEM Australia national population survey - that presents its results using a matrix approach which breaks *total entrepreneurial activity* into six components (*participation, motivation, innovation, growth, finance* and *entrepreneurial capacity*). Each component is discussed in its own data report with respect to three stages of owner-operated business: *start-ups* (businesses actively starting and no more than three months old); *young firms* (from four to 42 months old) and *established firms* (owner operated businesses greater than 42 months old)¹.

The series of analysis and commentary papers uses the information revealed in the six data reports – and information from other sources – to present deeper analysis and insight. This paper is an overview with three aims: (1) it summarises the six data reports; (2) it presents a summary portrait of entrepreneurial activity in Australia in the calendar year 2005 and (3) it seeks to draw out the key issues latent in data of the 2005 GEM Australia population survey. The key issues are discussed with reference to three principal audiences: the research community; policy makers and owner-operators of Australian businesses. This overview can be read independently of the six data reports and the range of other documents and materials which comprise the multi-faceted GEM project. However, for further and deeper information, we refer readers to these other documents.

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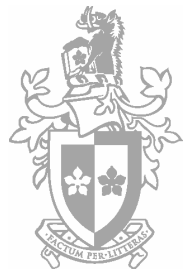
At an international level, the [GEM Global Executive Report](#) provides the global context for the Australian research by presenting key findings of differences found in comparing the entrepreneurial activity of nations taking part in the GEM project. This year, 35 nations were represented. A full description of the [GEM Global Research Methodology](#) can be found in the [How GEM Works](#) section of the [GEM Australia website](#).

Key Words: Innovation, Technology, Customer Novelty, Differentiation, International Comparison, Policy Issues

¹ Readers should be aware that the Global Executive team and other countries use different terms to describe these business stages in their respective reports. Please refer to [GEM Global Research Methodology](#) section for a description of these differences.

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Aim of this paper: To compare and contrast the Australian private business owner's propensity for innovation with those from other high-income GEM participating nations in 2005.

INTRODUCTION

Knowing the rate of business ownership participation is not extremely helpful until these rates are put into some form of context. The Global Executive team reports on participation by segregating the contributing countries into clusters based upon income – measured in Gross Domestic Product (GDP) per capita – and growth rate based upon annual change in GDP. These clusters are shown in Table 1 below, (reproduced from Minniti, 2006: 15). This analysis places Australia in the high income and low growth cluster and allows comparison with like or similar countries. Furthermore the Global Executive team also analysed the differences in participation rates, (referred to by them as prevalence rates) between the two clusters of all three stages of participation and found that the two groups had significant differences. Readers are referred to the [GEM Executive Report](#) for more information on these findings. Given this basis for comparative context, this paper examines a major attribute of entrepreneurship: innovation. We can examine how much of Australian business participation is truly innovative and how do we compare with similar nations in terms of the innovative propensity of our private businesses.

The questions addressing innovation in the GEM survey utilise the perceptions of business owners (and potential business owners) on three aspects that are commonly considered to reflect uniqueness of the business offering. The responses to this type of questioning portrays how the business owners are positioning their products and services in the market and reflects their attitudes toward entering a market and growing the business. In essence it addresses the propensity of private sector business owners to innovate and behave entrepreneurially.

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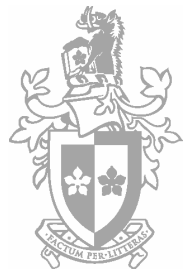




Table 1 – Country Clusters

Country cluster 1 – Middle income, high growth			Country cluster 2 – High income, low growth		
	2005 Real GDP per capita	2005 % Real GDP growth		2005 Real GDP per capita	2005 % Real GDP growth
Argentina	4,380	6	Australia	33,629	2.6
Brazil	4,124	3.7	Austria	39,292	2.1
Chile	6,272	6.1	Belgium	37,730	2.1
China	1,411	4.0	Canada	34,028	2.8
Croatia	7,801	3.8	Denmark	49,182	2.2
Hungary	10,978	3.7	Finland	39,098	3.1
Jamaica	3,388	2.5	France	35,727	2
Latvia	6,559	7.3	Germany	35,075	0.8
Mexico	6,771	3.7	Greece	21,017	3
Slovenia	17,606	4	Iceland	52,063	5.4
South Africa	4,698	4	Ireland	50,303	4.8
Thailand	2,665	5.6	Italy	31,874	1.2
Venezuela	4,627	4.6	Japan	37,566	0.8
			Netherlands	38,320	1.5
			New Zealand	26,291	2.8
			Norway	61,852	3.7
			Singapore	26,481	4
			Spain	27,074	2.8
			Sweden	42,392	3
			Switzerland	52,879	1.2
			United Kingdom	38,098	2.6
			United States	41,917	3.6
N = 13			N = 22		
Average GDP per capita, current prices, in USD = 6,252			Average GDP per capita, current prices, in USD = 38,722		
Average real GDP growth 2005 = 4.5%			Average real GDP growth 2005 = 2.6%		
Source: World Economic Outlook Database (July 2005), http://www.imf.org					





THREE ASPECTS OF INNOVATIVE PROPENSITY

In GEM, innovation is examined at the global level from three perspectives: (1) novelty or newness of product/service to customer; (2) differentiation from competitors and (3) incorporation of new technologies. So, we are able, for 2005 data, to make some comparisons with the international averages. To achieve this, an analysis of difference was conducted using a two sample chi-square test.

The two sample chi-square test allows the comparison of two groups with different sample sizes using nominal data from the same measures. The difference in sample sizes in this case is problematic because there is likely to be a difference revealed just due to the extreme sample size variation. To overcome this we have taken the distribution of responses from the combined country cluster sample (where $n=5,847$ for early-stage businesses and $6,845$ for established businesses) and used this as a predictor of the Australian national sample response distribution, (where $n=194$ for the early-stage businesses and 223 for established businesses). The null hypothesis is that no significant difference will be found between the distribution of responses of the Australian sample and the clustered country sample. A significant difference of better than a 5% confidence level ($\text{sig.} < 0.05$) suggests grounds to reject the null hypothesis and accept that a difference between the samples is likely to have occurred with a better than 95% probability that it is not purely due to chance.

In this analysis Australia was compared with the average of the group within which Australia was clustered; that is the high-income countries (high income countries are those with relatively high GDP per capita and relatively low growth rates; (see Minniti 2006). A comparison with the middle income, high growth countries is not discussed. Ideally an analysis of this nature might make a comparison with the best performing countries. However currently, the GEM Executive team does not provide this level of information. Each of the three aspects of innovation is now discussed in turn.

PRODUCT/SERVICE NOVELTY

Figure 3 overlays a line graph of the Australian rating on the bar graphs produced by the Executive team for the high and middle income country clusters. Australia falls within the high income cluster and therefore our statistical comparison has been conducted using the mean of the high income countries as our benchmark. Here, it can be seen that our early stage businesses demonstrate a lower propensity to provide new or novel products/services to customers than the mean and the difference is shown to be statistically significant. On the other hand, our established business owners, while showing a slightly lower propensity toward newness to customer are not significantly different to the mean.

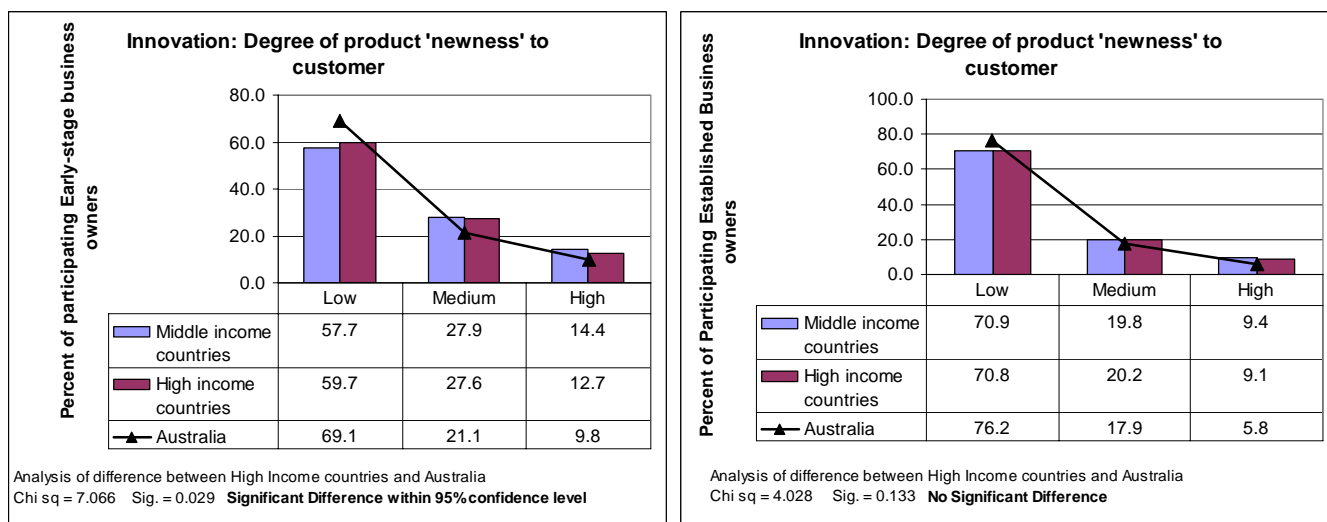
From either perspective, Australia cannot be ranked amongst the best performing countries. The kindest view of the data might permit us to say that, at best, we represent an average performance when compared with the 22 countries in the high income cluster. This, the most sanguine interpretation of the propensity of our private business owners to innovate, overlooks the fact that our early-stage businesses (start-ups and young businesses) are probably ranked among the lowest performers on this measure. The average to low score here seems to suggest that providing new and novel solutions to customers is not an Australian strong point in the private business sector.





The upside of this lower than average ranking is that the private business sector will generally avoid risk while the downside is that with that lower risk comes fewer growth opportunities. At a socio-economic level this also may translate to a retarded rate of diffusion of new knowledge and technologies into the local market by our own local businesses. This has significant implications for jobs and retained Australian capital, both human and financial.

Figure 3 – Comparing Australia’s Innovation Propensity: ‘Newness’ to customer



Early Stage Participants | Established Business Participants

Key: **High** = Products and services are new to all customers; **Medium** = Products and services are new to some customers; **Low** = Products and services are not new to any customers.

DIFFERENTIATION FROM COMPETITORS

In the Westpac GEM Australia 2004 report (Hindle & O'Connor 2005) we alluded to the possibility that the dominant mode of innovation in our private business sector was to differentiate from competitors. In Figure 4 we see this observation is repeated in 2005 and moreover in Australia we exceed the average of the high income cluster countries at a high level of confidence that suggests that the difference observed is unlikely to have occurred due to chance. Australia might be considered among the top nations that innovate on this measure.



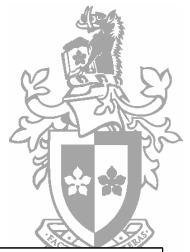
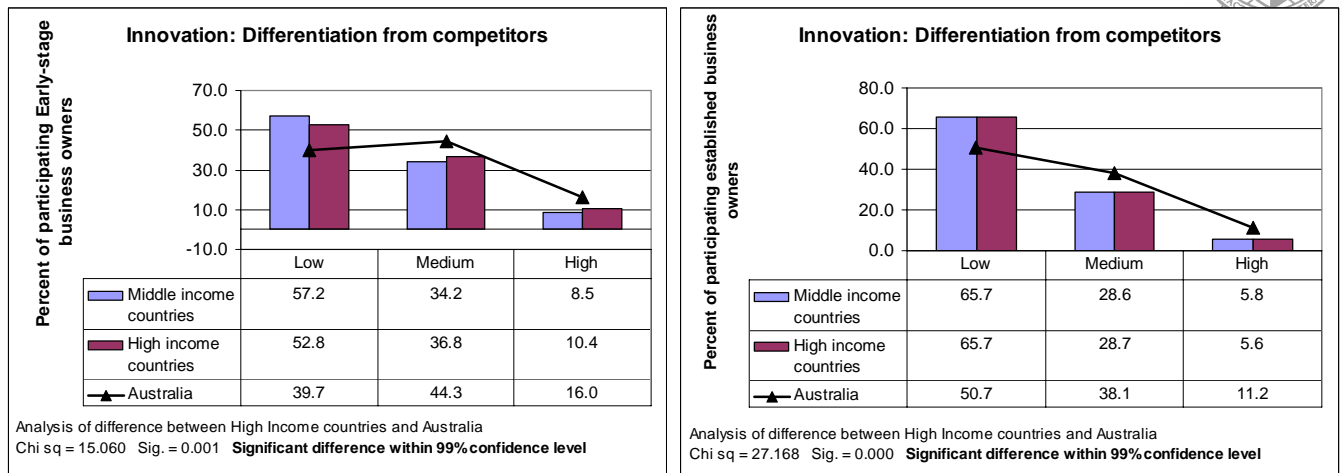


Figure 4 – Comparing Australia’s Innovation Propensity: Competitor differentiation



Early Stage Participants | Established Business Participants

Key: **High** = No other competitors offer the same products/services; **Medium** = A few other competitors offer the same products/services; **Low** = Many competitors offer the same products/services.

The positive implication of this position is that, generally, the Australian private sector creates product and service choice through differentiation for the local market and businesses therefore give themselves the potential to survive in a competitive environment. On the negative side, this focus on competitor differentiation tends to reduce the potential for economies of scale and places pressure on business income. In Australia, with respect to developing the private sector to produce globally competitive businesses, these negatives possibly outweigh the positives. When this emphasis is considered in conjunction with the low propensity to produce novel solutions for customers, a conclusion might be that, in Australia, our businesses tend to fight for the same piece of pie. They don't expand markets by increasing the size or quality of the pie.

INCORPORATION OF NEW TECHNOLOGY

This particular measure of innovation uncovers some interesting distinctions between the two clusters of high and middle income countries. However, our discussion here is not to re-present the international findings: we refer the readers to the Global Executive report for 2005 (Minniti, 2006). Of principal interest in this paper is the relative Australian performance when compared to the high income cluster of countries.

Figure 5 below reveals that Australian early-stage businesses generally perform close to the average of the participating high income nations. On the other hand, the established businesses exhibit significantly lower performance, especially in the number of businesses that are utilising the very latest of technology developed within the last twelve months. On this issue Australia has only about a third as many business owners who claim to incorporate the latest technology when compared to that of the average for the high-income nations. Furthermore, this difference is highly statistically significant.



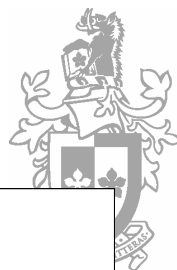
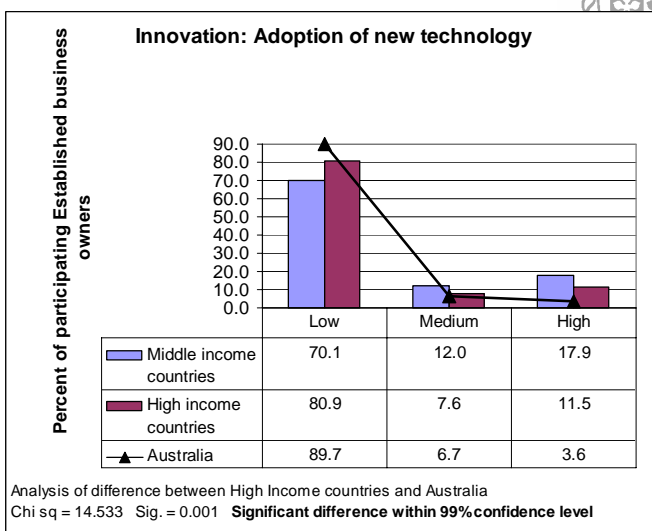
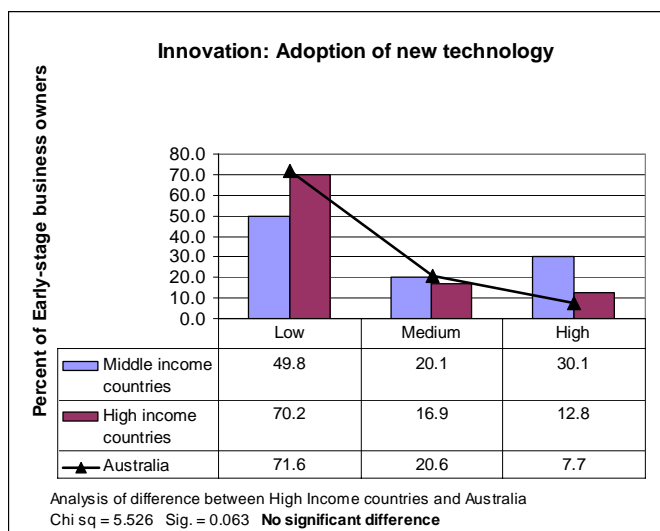


Figure 5 – Comparing Australia’s Innovation Propensity: Adoption of new technology



Early Stage Participants | Established Business Participants

Key: **High** = Incorporates technology developed in the last twelve months; **Medium** = Incorporates technology developed between one and five years ago; **Low** = Incorporates technology that is five years or more old.

So, we can state quite firmly that, while on average Australia’s early-stage businesses are generally as much inclined to incorporate new technology as the average of the high income nations, Australian established businesses generally do poorly when compared on this measure internationally. The implication suggests that our rate of conversion from research to marketable products and services lags the majority of high income countries and Australia is at risk of losing ground in the knowledge economy stakes. Furthermore the difficulty of funding new technologies can be somewhat overcome with an established business that has trading history, access to markets and potentially a solid base of knowledge and experience. This advantage is less exploited in the established Australian SME sector than is the case for our high-income competitors.

POLICY ISSUE

The above findings portray the generality of Australian owner-operated businesses as those that do not tend to introduce new knowledge and technologies into the market unless prompted by the need to gain a distinction – potentially a shallow and short-term and low value distinction – from a competitor. In essence this suggests Australian businesses adopt strategies that follow, not lead.





This situation also potentially influences Australian investors to seek more proactive and technology hungry business interests from outside of Australia. With this cultural backdrop the 'home grown' entrepreneurs that emerge largely fail to recognise opportunities to lead the development of new markets. Similarly, local knowledge and technology producers are also forced to seek channels for the locally produced knowledge through international markets by courting international business interests. The result of either scenario, investors seeking new business champions or researchers searching new market channels, suggests that Australia will often face the position of buying back the new knowledge incorporated in new technologies at the value-added cost of a packaged new product or service infrastructure from overseas. This has and will continue to have a detrimental effect on Australia's balance of trade.

In Australia's current situation, we do not have a low labour cost advantage and our primary exports are resource commodities. The establishment of a knowledge economy should be a high priority. However, with a private sector reluctant to practice customer-oriented innovation, largely failing to adopt new technologies and, following the competition through lagged differentiation, the local receptacle for national investment in new knowledge is a pretty leaky vessel. It is important that the term 'knowledge economy' is placed into correct context. It is knowledge that is meant to support the economy not the economy that is to support the production of knowledge.

A major policy implication from this analysis echoes that of previous GEM Australia years, although now the case is building with statistical evidence. Australia must create incentives and motivated channels of commercialisation into local markets. Furthermore, the SME sector needs to be encouraged to focus on proactivity with customers – not reactivity to competitors - and provide leading edge solutions to build forward-thinking differentiation (that which incorporates product novelty and new technology) rather than follower competitive strategies. It is important for local markets to provide opportunities to build economies of scale as much as is possible in the limited market size that Australia offers. The real scale opportunities come from international markets, but domestic Australian commerce needs to provide both the breeding ground and international leverage for our SME sector to be truly entrepreneurial and globally significant.





REFERENCES

Hindle, K. and O'Connor, A., (2005), *Westpac GEM Australia, 2004*, Swinburne University of Technology, Melbourne.

Minniti, M., (2006), *Global Entrepreneurship Monitor 2005 Executive Report*, Babson College and London Business School, available at www.gemconsortium.org

RELATED RESEARCH ARTICLES

Hindle K.G. (2002) '[How entrepreneurial capacity transforms `small I' into `Big I' innovation](#)'. Telecommunications Journal of Australia, . 52 (3) Spring.

RELATED ISSUE PAPERS

O'Connor AJ. (2006) 'GA05IP-01 Entrepreneurship Participation: The search for a stable launch platform', Swinburne University of Technology, Melbourne.

RELATED DATA REPORTS

O'Connor A.J. & Hindle K. (2006) 'GA05DR-3 Data Report – Innovation' Swinburne University of Technology, available at www.gemaustralia.com.au.

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