

# **Global Entrepreneurship Monitor**

## **GEM 2002**

**Special Seminar  
&  
Press Release**

**14 November 2002**

## **GEM 2002**

### **Singapore Research Team**

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### Introduction to GEM

- Initiated in 1999 by leading scholars from Babson College and London Business School, with strong support from Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation
- Fourth annual GEM cross-national assessment of the level of entrepreneurship.
- Ten countries in 1999, 21 in 2000, 28 in 2001 and 37 in 2002.
- Expect to increase to about 50 countries in 2003.
- For Singapore, this is our 3<sup>rd</sup> year of participation.
- Centre for Entrepreneurship (CET) was invited to carry out the Singapore Country Study since 2000.
- Jointly funded by National University of Singapore (NUS) and Singapore Economic Development Board (EDB).

### GEM Participating Countries 1999 – 2002

Country	GEM 1999	GEM 2000	GEM 2001	GEM 2002
Argentina		X	X	X
Australia		X	X	X
Belgium		X	X	X
Brazil		X	X	X
C Taipei				X
Canada	X	X	X	X
Chile				X
China, P				X
Croatia				X
Denmark	X	X	X	X
Finland	X	X	X	X
France	X	X	X	X
Germany	X	X	X	X
H Kong				X
Hungary			X	X
Iceland				X
India		X	X	X
Ireland		X	X	X
Israel	X	X	X	X
Italy	X	X	X	X

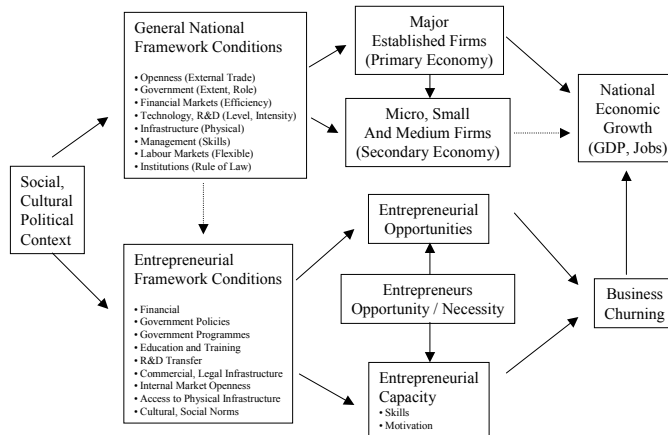
### GEM Participating Countries 1999 – 2002 (Con't)

Country	GEM 1999	GEM 2000	GEM 2001	GEM 2002
Japan	X	X	X	X
Korea		X	X	X
Mexico			X	X
N Zealand			X	X
Netherlands			X	X
Norway		X	X	X
Poland			X	X
Russia			X	X
S Africa			X	X
Singapore		X	X	X
Slovenia				X
Spain		X	X	X
Sweden		X	X	X
Switzerland				X
Thailand				X
UK	X	X	X	X
US	X	X	X	X
<b>TOTAL</b>	<b>10</b>	<b>21</b>	<b>28</b>	<b>37</b>

### Major Objectives of GEM 2002

- Measure and benchmark the level of entrepreneurial activity among different countries
- Examine the factors that may have led to some countries having higher levels of entrepreneurship than others
- Identify what can be done to enhance the national level of entrepreneurial activity

## GEM Conceptual Model



## GEM Research Methodology & Data Sources

GEM employs 3 approaches:

- Extensive Population Surveys
  - ✓ Between 2,000 to 15,000 adults were selected in each country for a random sampling survey using a common survey instrument via telephone. (Sample size for Singapore: 2005)
  - ✓ The results of the analysis are drawn from the responses of the working age group (18 to 64 years old).
  - ✓ This year, a total of over 113,000 individuals in 37 countries were surveyed by GEM. The estimated combined labor force of these 37 countries was 2.4 billion.

## **GEM Research Methodology & Data Sources**

- Country Experts Interviews
  - ✓ Each GEM national research team interviewed 30 – 70 national key informants using a common structured questionnaire (36 for Singapore). The key informants include entrepreneurs, investors, government policy makers and venture support professionals.
  - ✓ The informants were asked to assess the environment for entrepreneurship in their country along NINE dimensions:
    - Financial Support
    - Government Policies
    - Government Programmes
    - Education and Training
    - Research and Development Transfer
    - Commercial and Professional Infrastructure
    - Barriers to Entry
    - Access to Physical Infrastructure
    - Cultural and Social Norms

## **GEM Research Methodology & Data Sources**

- Collection of Secondary National Social-Economic Data for each country
  - ✓ International benchmark Social-Economic data from World Bank, World competitiveness report
  - ✓ National sources of data on venture capital investment, firm formation, etc.

## How Entrepreneurial is Singapore?

### **GEM 2002 Singapore – Start-Up Prevalence Rate**

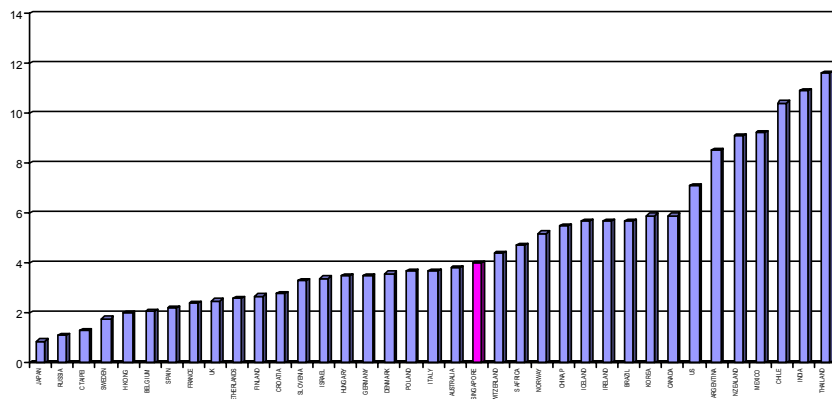
#### **\* Definition \***

- This variable attempts to measure the proportion of working age adults (age between 18 to 64 years old) in a country who is actively engaged in starting up a new business.
- To meet the criteria for this variable, the respondent had to fulfill each of the following criteria:
  - ✓ if they had done something – taken some action – to create a new business in the past year.
  - ✓ they expected to share ownership of the new firm and
  - ✓ the firm had not paid salaries for more than 3 months

## GEM 2002 Singapore – Start-Up Prevalence Rate

- In 2002, Start-up prevalence rate varies from 0.9% for Japan to 11.6% for Thailand.
- Singapore ranked 17th among the 37 countries with start-up prevalence rate of 4.0% for 2002, slightly lower than 4.2% in 2001 but higher than 2.3% in 2000.
- Worldwide, start-up prevalence rate has generally declined between 2001 and 2002, quite sharply in some cases.

## Start-Up Prevalence Rate 2002

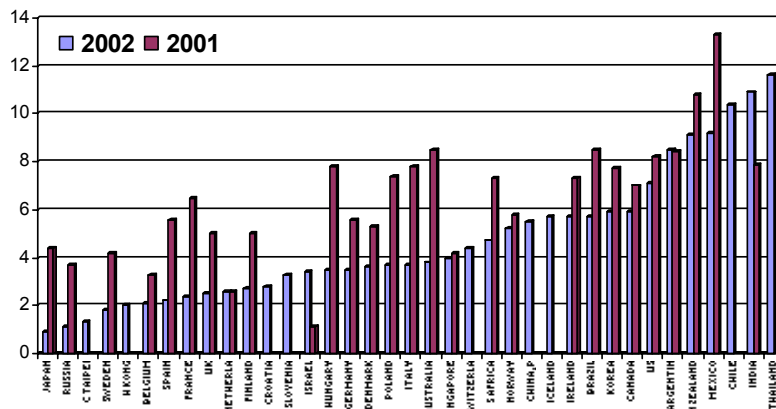


Source: GEM 2002 Master Dataset

## GEM 2002 - Start-Up Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
THAILAND	11.6	1	POLAND	3.7	20
INDIA	10.9	2	DENMARK	3.6	21
CHILE	10.4	3	GERMANY	3.5	22
MEXICO	9.2	4	HUNGARY	3.5	23
N ZEALAND	9.1	5	ISRAEL	3.4	24
ARGENTINA	8.5	6	SLOVENIA	3.3	25
US	7.1	7	CROATIA	2.8	26
CANADA	5.9	8	FINLAND	2.7	27
KOREA	5.9	9	NETHERLANDS	2.6	28
BRAZIL	5.7	10	UK	2.5	29
IRELAND	5.7	11	FRANCE	2.4	30
ICELAND	5.7	12	SPAIN	2.2	31
CHINA,P	5.5	13	BELGIUM	2.1	32
NORWAY	5.2	14	H KONG	2.0	33
S AFRICA	4.7	15	SWEDEN	1.8	34
SWITZER	4.4	16	C TAIPEI	1.3	35
<b>SINGAPORE</b>	<b>4.0</b>	<b>17</b>	RUSSIA	1.1	36
AUSTRALIA	3.8	18	JAPAN	0.9	37
ITALY	3.7	19	<b>OVERALL MEAN</b>	<b>4.7</b>	

## Start-Up Prevalence Rate 2002 vs 2001



Source: GEM 2002 Master Dataset

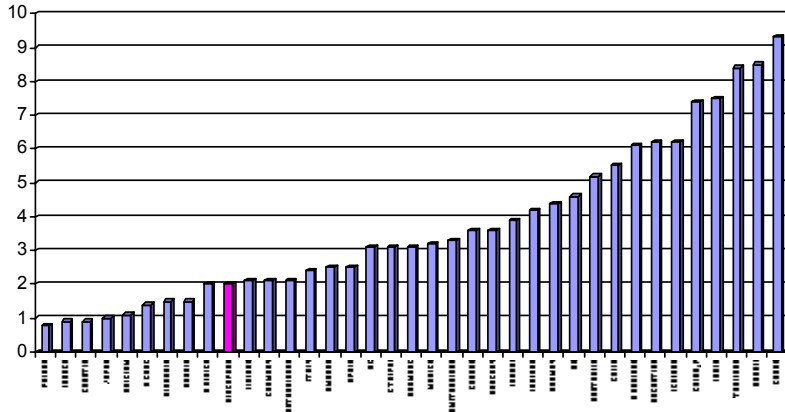
**GEM 2002 Singapore – New Business Prevalence Rate****\* Definition \***

- This variable attempts to measure the proportion of working age adults (age between 18 to 64 years old) in a country who are currently running a new business (as opposed to trying to start one).
- To meet the criteria for this variable, the respondent had to fulfill each of the following criteria:
  - ✓ they are currently managing a new business.
  - ✓ they personally owned all or part of the new business.
  - ✓ the firm was started in year 1999 or later (this meant that the business was, at most, 42 months old in Jun 2002).

**GEM 2002 Singapore – New Business Prevalence Rate**

- New business prevalence rate varies from 0.8% for Poland to 9.3% for Korea.
- Singapore ranked 28th among the 37 countries with new business prevalence rate of 2.0% for 2002, slightly lower than 2.3% in 2001 but higher than 1.9% in 2000.
- Globally, new business prevalence rate increased in several countries (India, Brazil, Korea, Argentina) but declined in most others.

## New Business Prevalence Rate 2002

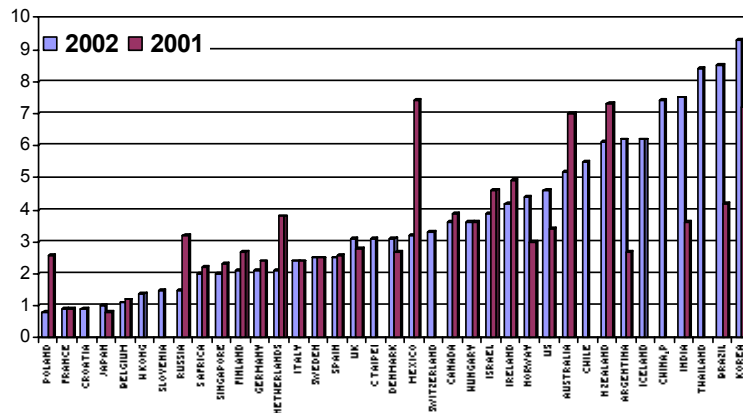


Source: GEM 2002 Master Dataset

## GEM 2002 – New Business Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
KOREA	9.3	1	C TAIPEI	3.1	20
BRAZIL	8.5	2	UK	3.1	21
THAILAND	8.4	3	SPAIN	2.5	22
INDIA	7.5	4	SWEDEN	2.5	23
CHINA,P	7.4	5	ITALY	2.4	24
ICELAND	6.2	6	NETHERLANDS	2.1	25
ARGENTINA	6.2	7	GERMANY	2.1	26
N ZEALAND	6.1	8	FINLAND	2.1	27
CHILE	5.5	9	SINGAPORE	2.0	28
AUSTRALIA	5.2	10	S AFRICA	2.0	29
US	4.6	11	RUSSIA	1.5	30
NORWAY	4.4	12	SLOVENIA	1.5	31
IRELAND	4.2	13	H KONG	1.4	32
ISRAEL	3.9	14	BELGIUM	1.1	33
HUNGARY	3.6	15	JAPAN	1.0	34
CANADA	3.6	16	CROATIA	0.9	35
SWITZER	3.3	17	FRANCE	0.9	36
MEXICO	3.2	18	POLAND	0.8	37
DENMARK	3.1	19	<b>OVERALL MEAN</b>	<b>3.7</b>	

### New Business Prevalence Rate 2002 vs 2001



Source: GEM 2002 Master Dataset

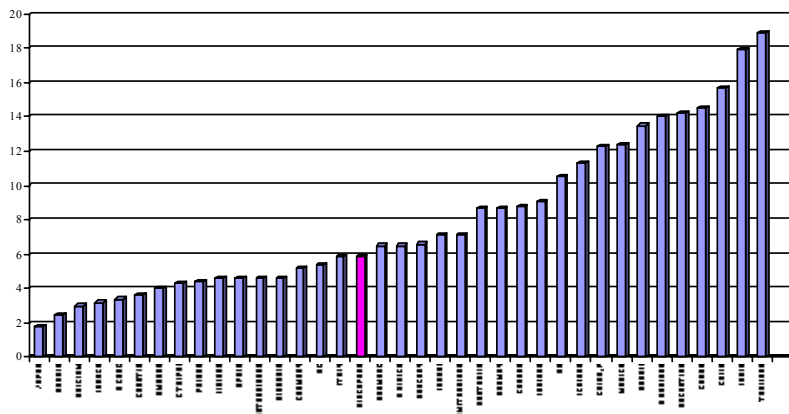
### GEM 2002 Singapore – Total Entrepreneurial Activity (TEA) \* Definition \*

- TEA is the sum of
  - ✓ (1) the propensity of individuals involving in the start-up process (nascent entrepreneurs) (start-up prevalence rate) and
  - ✓ (2) the propensity of individuals engaging as owner-managers of firms less than 42 months old (new business prevalence rate)
- Those that qualified for both are counted only once.

## GEM 2002 Singapore – Total Entrepreneurial Activity (TEA)

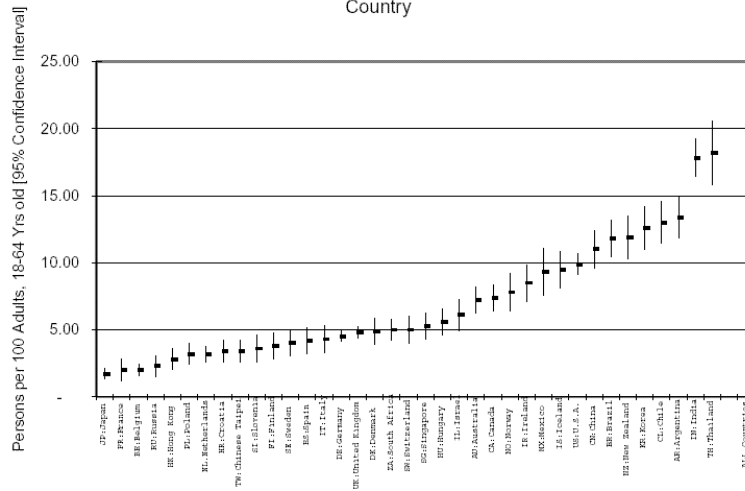
- TEA varies from 1.8% for Japan to 18.9% for Thailand. Singapore ranked 21st among the 37 countries with TEA of 5.9% for 2002, slightly lower than 6.6% in 2001 but higher than 4.2% on 2000.
- Globally, TEA has declined more significantly (about 25%) between 2001 and 2002 for the 21 countries covered in both 2001 and 2002
- Consequently, Singapore's ranking in 2002 (21<sup>st</sup> out of 37) improved compared to 2001 (27<sup>th</sup> out of 29)

## Total Entrepreneurial Activity 2002



Source: GEM 2002 Master Dataset

Figure 1 - Total Entrepreneurial Activity [Prevalence] Prevalence 2002: By Country



**GEM 2002 - TEA Prevalence Rate & Rank**

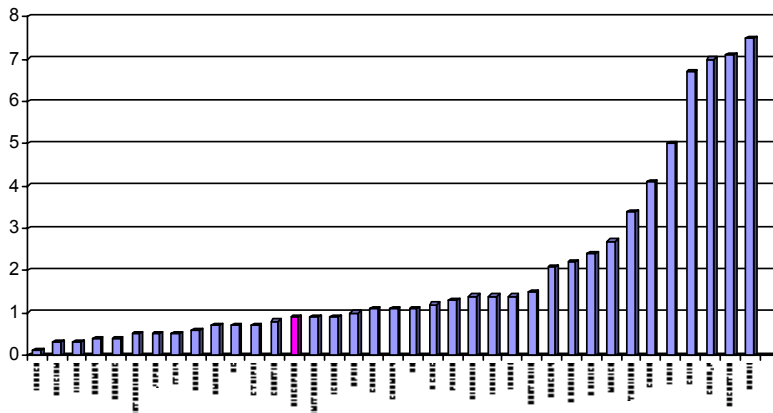
Country	Rate (%)	Rank	Country	Rate (%)	Rank
THAILAND	18.9	1	DENMARK	6.5	20
INDIA	17.9	2	<b>SINGAPORE</b>	<b>5.9</b>	<b>21</b>
CHILE	15.7	3	ITALY	5.9	22
KOREA	14.5	4	UK	5.4	23
ARGENTINA	14.2	5	GERMANY	5.2	24
N ZEALAND	14.0	6	SLOVENIA	4.6	25
BRAZIL	13.5	7	NETHERLANDS	4.6	26
MEXICO	12.4	8	SPAIN	4.6	27
CHINA,P	12.3	9	FINLAND	4.6	28
ICELAND	11.3	10	POLAND	4.4	29
US	10.5	11	C TAIPEI	4.3	30
IRELAND	9.1	12	SWEDEN	4.0	31
CANADA	8.8	13	CROATIA	3.6	32
NORWAY	8.7	14	H KONG	3.4	33
AUSTRALIA	8.7	15	FRANCE	3.2	34
SWITZER	7.1	16	BELGIUM	3.0	35
ISRAEL	7.1	17	RUSSIA	2.5	36
HUNGARY	6.6	18	JAPAN	1.8	37
S AFRICA	6.5	19	<b>OVERALL MEAN</b>	<b>8.0</b>	



**GEM 2002 Singapore – Necessity / Opportunity TEA**

- Necessity TEA varies from 0.1% for France to 7.5% for Brazil.
- Singapore ranked 24th among the 37 countries with necessity TEA of 0.9% for 2002, lower than 1.2% in 2001.
- Opportunity TEA varies from 1.2% for Japan to 15.3% for Thailand.
- Singapore ranked 19th among the 37 countries with opportunity TEA of 4.9% for 2002, slightly lower than 5.1% in 2001.
- Globally, necessity entrepreneurship accounted for about 1/3 of total entrepreneurship; in Singapore, it accounted for only 16%
- Globally, both necessity & opportunity TEAs have declined in most countries between 2001 and 2002.

**Necessity TEA Rate 2002**

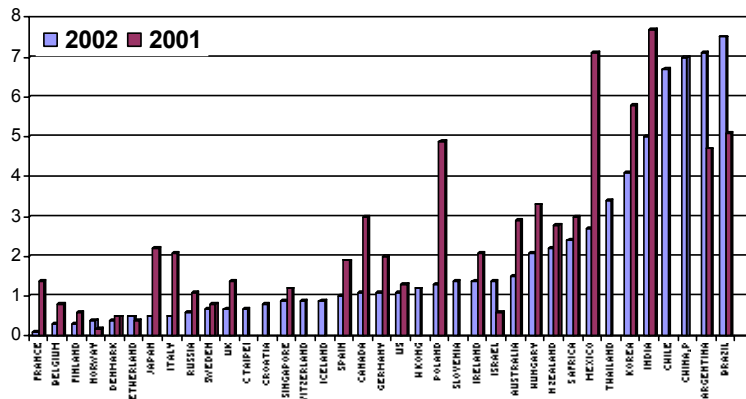


Source: GEM 2002 Master Dataset

## GEM 2002 – Necessity TEA Prevalence Rate & Rank

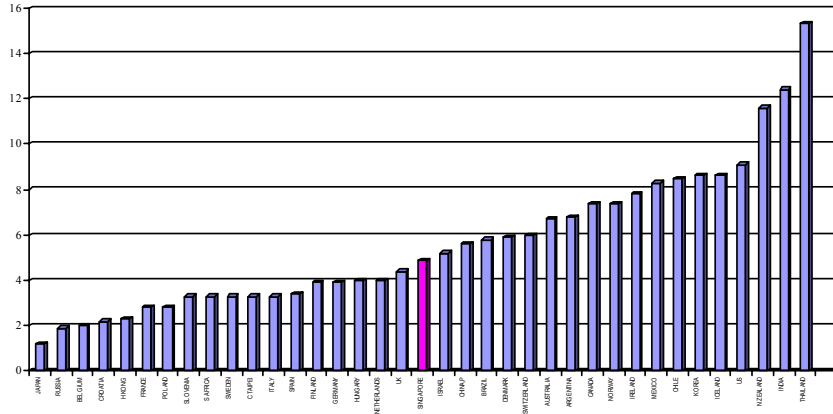
Country	Rate (%)	Rank	Country	Rate (%)	Rank
BRAZIL	7.5	1	CANADA	1.1	20
ARGENTINA	7.1	2	SPAIN	1.0	21
CHINA,P	7.0	3	ICELAND	0.9	22
CHILE	6.7	4	SWITZERLAND	0.9	23
INDIA	5.0	5	<b>SINGAPORE</b>	<b>0.9</b>	<b>24</b>
KOREA	4.1	6	CROATIA	0.8	25
THAILAND	3.4	7	C TAIPEI	0.7	26
MEXICO	2.7	8	UK	0.7	27
S AFRICA	2.4	9	SWEDEN	0.7	28
N ZEALAND	2.2	10	RUSSIA	0.6	29
HUNGARY	2.1	11	ITALY	0.5	30
AUSTRALIA	1.5	12	JAPAN	0.5	31
ISRAEL	1.4	13	NETHERLANDS	0.5	32
IRELAND	1.4	14	DENMARK	0.4	33
SLOVENIA	1.4	15	NORWAY	0.4	34
POLAND	1.3	16	FINLAND	0.3	35
H KONG	1.2	17	BELGIUM	0.3	36
US	1.1	18	FRANCE	0.1	37
GERMANY	1.1	19	<b>OVERALL MEAN</b>	<b>1.9</b>	

## Necessity TEA Rate 2002 vs 2001



Source: GEM 2002 Master Dataset

## Opportunity TEA Rate 2002

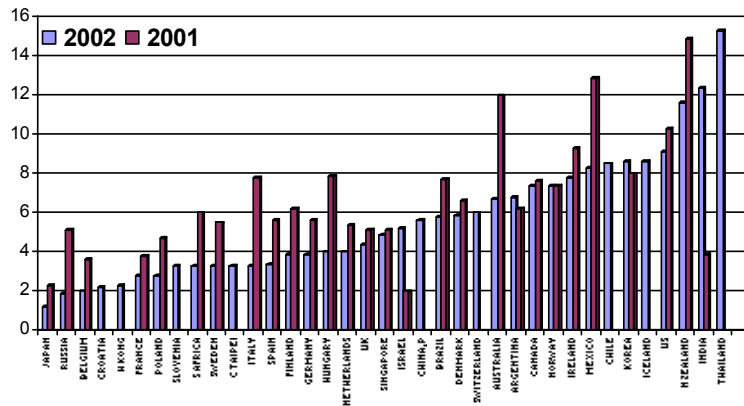


Source: GEM 2002 Master Dataset

## GEM 2002 – Opportunity TEA Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
THAILAND	15.3	1	UK	4.4	20
INDIA	12.4	2	NETHERLANDS	4.0	21
N ZEALAND	11.6	3	HUNGARY	4.0	22
US	9.1	4	GERMANY	3.9	23
ICELAND	8.6	5	FINLAND	3.9	24
KOREA	8.6	6	SPAIN	3.4	25
CHILE	8.5	7	ITALY	3.3	26
MEXICO	8.3	8	C TAIPEI	3.3	27
IRELAND	7.8	9	SWEDEN	3.3	28
NORWAY	7.4	10	S AFRICA	3.3	29
CANADA	7.4	11	SLOVENIA	3.3	30
ARGENTINA	6.8	12	POLAND	2.8	31
AUSTRALIA	6.7	13	FRANCE	2.8	32
SWITZERLAND	6.0	14	H KONG	2.3	33
DENMARK	5.9	15	CROATIA	2.2	34
BRAZIL	5.8	16	BELGIUM	2.0	35
CHINA,P	5.6	17	RUSSIA	1.9	36
ISRAEL	5.2	18	JAPAN	1.2	37
<b>SINGAPORE</b>	<b>4.9</b>	<b>19</b>	<b>OVERALL MEAN</b>	<b>5.6</b>	

### Opportunity TEA Rate 2002 vs 2001

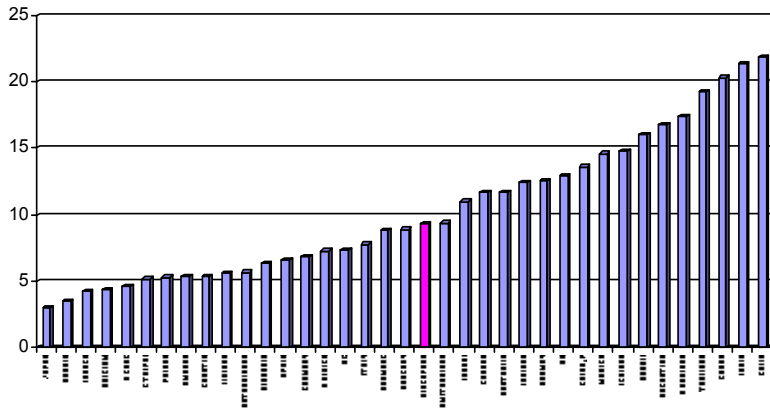


Source: GEM 2002 Master Dataset

### GEM 2002 Singapore - Male / Female 18-64 TEA Prevalence Rate

- Male TEA varies from 3.0% for Japan to 21.9% for Chile.
- Singapore ranked 18th among the 37 countries with male TEA of 9.3% for 2002, slightly lower than 9.7% in 2001 but still much higher than 5.8% in 2000.
- Female TEA varies from 0.6% for Japan to 18.5% for Thailand.
- Singapore ranked 29th among the 37 countries with female TEA of 2.7% for 2002, lower than 3.6% in 2001 and similar to 2.7% in 2000.
- Globally, men are 50% more likely to be entrepreneurs than women; in Singapore, however, men are 3 times more likely than women.

### Male 18-64 TEA Rate 2002

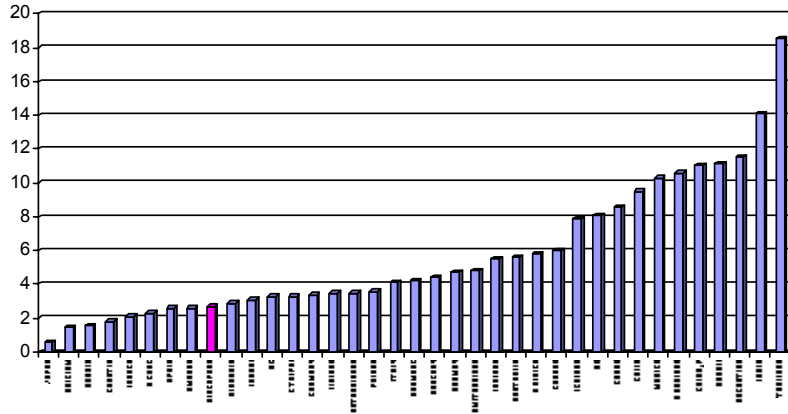


Source: GEM 2002 Master Dataset

### GEM 2002 – Male 18 – 64 TEA Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
CHILE	21.9	1	DENMARK	8.8	20
INDIA	21.4	2	ITALY	7.8	21
KOREA	20.3	3	UK	7.4	22
THAILAND	19.3	4	S AFRICA	7.3	23
N ZEALAND	17.4	5	GERMANY	6.9	24
ARGENTINA	16.8	6	SPAIN	6.6	25
BRAZIL	16.0	7	SLOVENIA	6.4	26
ICELAND	14.8	8	NETHERLANDS	5.7	27
MEXICO	14.6	9	FINLAND	5.6	28
CHINA,P	13.6	10	CROATIA	5.4	29
US	12.9	11	SWEDEN	5.4	30
NORWAY	12.6	12	POLAND	5.3	31
IRELAND	12.4	13	C TAIPEI	5.2	32
AUSTRALIA	11.7	14	H KONG	4.6	33
CANADA	11.7	15	BELGIUM	4.4	34
ISRAEL	11.0	16	FRANCE	4.3	35
SWITZERLAND	9.4	17	RUSSIA	3.5	36
SINGAPORE	9.3	18	JAPAN	3.0	37
HUNGARY	8.9	19	<b>OVERALL MEAN</b>	<b>10.3</b>	

### Female 18-64 TEA Rate 2002



Source: GEM 2002 Master Dataset

### GEM 2002 – Female 18 - 64 TEA Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
THAILAND	18.5	1	ITALY	4.1	20
INDIA	14.1	2	POLAND	3.6	21
ARGENTINA	11.5	3	NETHERLANDS	3.5	22
BRAZIL	11.1	4	FINLAND	3.5	23
CHINA,P	11.0	5	GERMANY	3.4	24
N ZEALAND	10.6	6	C TAIPEI	3.3	25
MEXICO	10.3	7	UK	3.3	26
CHILE	9.5	8	ISRAEL	3.1	27
KOREA	8.6	9	SLOVENIA	2.9	28
US	8.1	10	SINGAPORE	2.7	29
ICELAND	7.9	11	SWEDEN	2.6	30
CANADA	6.0	12	SPAIN	2.6	31
S AFRICA	5.8	13	H KONG	2.3	32
AUSTRALIA	5.6	14	FRANCE	2.1	33
IRELAND	5.5	15	CROATIA	1.8	34
SWITZERLAND	4.8	16	RUSSIA	1.6	35
NORWAY	4.7	17	BELGIUM	1.5	36
HUNGARY	4.4	18	JAPAN	0.6	37
DENMARK	4.2	19	<b>OVERALL MEAN</b>	<b>5.7</b>	

## **GEM 2002 Singapore – Business Angel Prevalence Rate**

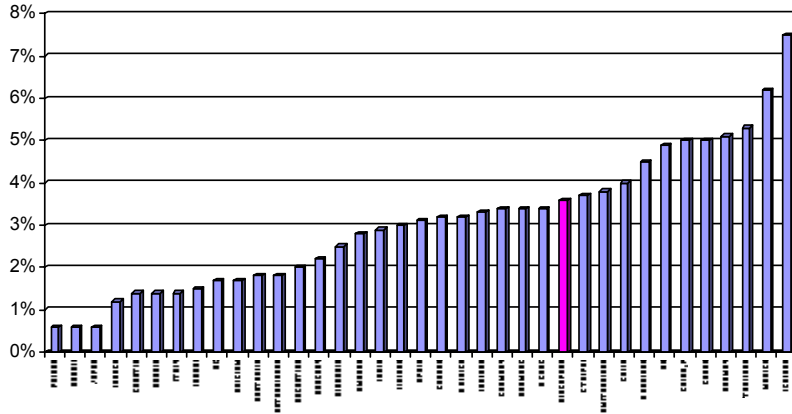
### **\* Definition \***

- To meet this criterion for operating as a business angel, individuals had to fulfill the following criterion:
  - ✓ they had in the past personally provided funds for a new business started by someone else – public traded shares or mutual funds excluded.

## **GEM 2002 Singapore – Business Angel Prevalence Rate**

- Business Angel Prevalence Rate varies from 0.6% for Poland to 7.5% for Iceland.
- Singapore ranked 12<sup>th</sup> among the 37 countries with business angel TEA of 3.6% for 2002, higher than 2.0% in 2001 and 1.3% in 2000.
- Globally, more countries experience decline in angel investment rate between 2001 and 2002 than increase.

### Business Angel Prevalence Rate 2002

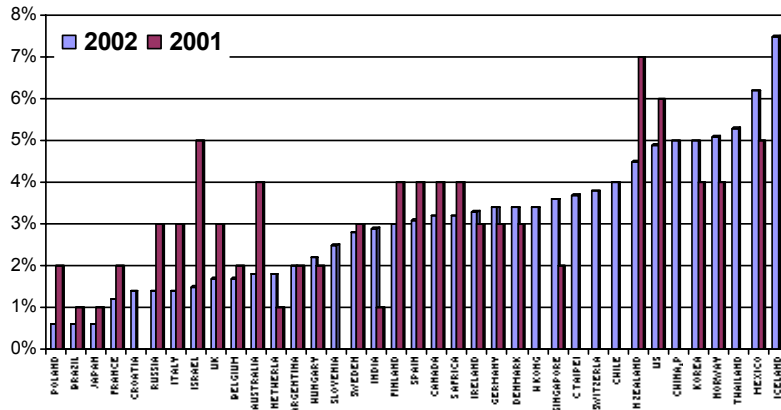


Source: GEM 2002 Master Dataset

### GEM 2002 – Business Angel Prevalence Rate & Rank

Country	Rate (%)	Rank	Country	Rate (%)	Rank
ICELAND	7.5	1	FINLAND	3.0	20
MEXICO	6.2	2	INDIA	2.9	21
THAILAND	5.3	3	SWEDEN	2.8	22
NORWAY	5.1	4	SLOVENIA	2.5	23
KOREA	5.0	5	HUNGARY	2.2	24
CHINA,P	5.0	6	ARGENTINA	2.0	25
US	4.9	7	NETHERLANDS	1.8	26
N ZEALAND	4.5	8	AUSTRALIA	1.8	27
CHILE	4.0	9	BELGIUM	1.7	28
SWITZER	3.8	10	UK	1.7	29
C TAIPEI	3.7	11	ISRAEL	1.5	30
SINGAPORE	3.6	12	ITALY	1.4	31
H KONG	3.4	13	RUSSIA	1.4	32
DENMARK	3.4	14	CROATIA	1.4	33
GERMANY	3.4	15	FRANCE	1.2	34
IRELAND	3.3	16	JAPAN	0.6	35
S AFRICA	3.2	17	BRAZIL	0.6	36
CANADA	3.2	18	POLAND	0.6	37
SPAIN	3.1	19	<b>OVERALL MEAN</b>	<b>3.0</b>	

### Business Angel Prevalence Rate 2002 vs 2001

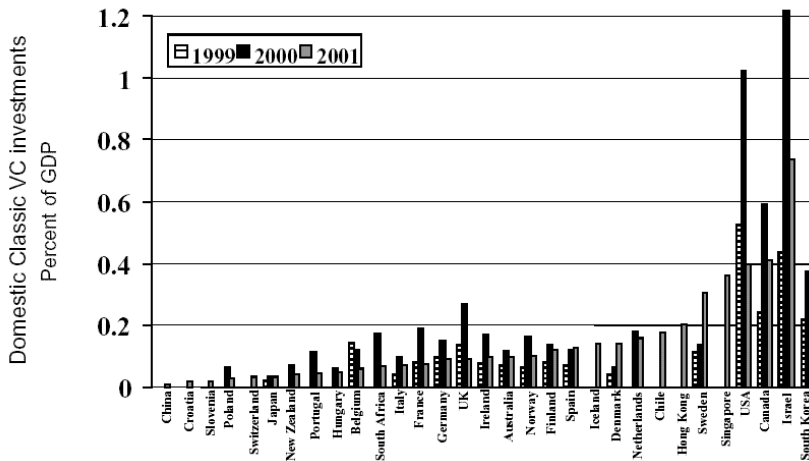


Source: GEM 2002 Master Dataset

### Venture Capital Investment in New Business

- Globally, a very small percentage of new businesses (1 in 10,000) received funding from formal Venture Capital (VC)
- For all GEM nations with data for 2000 and 2001, VC investment as % of GDP fell from 0.5% of GDP in 2000 to 0.2% in 2001. The Total amount of VC investment fell 53% over 2000 – 2001.

### Domestic Classic Venture Capital Invested (% of GDP) 1999 – 2001



Source: Reynolds, P.D. et al (2002). *Global Entrepreneurship Monitor: 2002 Summary Report*

### Venture Capital Investment / GDP in Singapore

	1999	2000	2001
Venture Capital (VC) Investments in Singapore Companies	S\$413 million (30.5%)	S\$601.3 million (26%)	S\$384.4 million (N.A.)
Gross Domestic Product (GDP)	S\$140.7 billion	S\$159.9 billion	S\$153.5 billion
VC Investment / GDP Ratio	0.30%	0.38%	0.25%
Average VC per investment	S\$3.17 million	S\$3.3 million	S\$5.4 million
No. of companies investment	130	182	73

Source: EDB

### Total Investment in New Business

- Overall in 2001, informal investment in all 37 GEM nations sum up to about US\$300 billions compared with less than US\$60 billions for VC.
- Informal investment was therefore 5 times more important than VC as a source of finance for new businesses.

### Summary of Level of Entrepreneurial Activity in Singapore (2000 – 2002)

	2002	2001	2000
Total Entrepreneurial Activity (TEA)	5.8	6.6	4.2
Necessity TEA	0.9	1.2	-
Opportunity TEA	4.9	5.1	-
Male 18 – 64 TEA	9.3	9.7	5.8
Female 18 – 64 TEA	2.7	3.6	2.7
Start-Up	4.0	4.2	2.3
New Business	2.0	2.3	1.9
Business Angel	3.6	2.0	1.3

*Source: GEM Master Dataset 2000 - 2002*

## Other Data Sources on Firm Formation in Singapore

### New Enterprise Formation Rate

- According to DOS, the number of new firm formation decreases by 8.9% from 36,457 in 2000 to 33,202 in 2001.
- However, these figures exclude individual self-employed and “free-lancing” activities that do not involve registration with the Registrar of Companies and Businesses (RCB).
- However, the first half-year of 2002 showed a slight increase compared to similar period in 2001

## Statistics on New Firm Formation in Singapore

	1998	1999	2000	2001	2002(1H)
	Number				
Companies	6,524	8,018	11,032	8,511	5,646
Business	23,346	26,586	25,425	24,691	12,410
Start-Ups	29,870	34,604	36,457	33,202	18,056

	1999	2000	2001
	% Change Over Previous Year		
Companies	22.9%	37.6%	-22.9%
Business	13.9%	-4.4%	-2.9%
Start-Ups	15.8%	5.4%	-8.9%

*Source: Singapore Department of Statistics*

### **GEM 2002 Singapore – Breakdown of Entrepreneurs by Age**

- Respondents in the age group of 25 – 34 years old displayed the highest level of entrepreneurial activity.
- 7.8% surveyed in this age group were involved in start-up activities as compared to the mean of 4.8% for all age groups.
- 2.4% surveyed in this age group are currently running new businesses as compared to the mean of 1.6% for all age groups.
- 5.6% surveyed in this age group are involved in angel investing as compared to the mean of 3.6% for all age groups.

### **GEM 2002 Singapore – Breakdown of entrepreneurs by Age – Con't**

- This age group also came in first in the overall TEA with 9.3% and 7.8% in opportunity TEA as compared to the means of 5.9% and 4.9% respectively for all age groups.
- In terms of necessity TEA, the age group of 35 – 44 years old displayed the highest level at 1.3% as compared to the mean of 0.8% for all age groups.

## GEM 2002 - Level of Entrepreneurial Activity in Singapore by Age

	% Involved in Start-Up	% Running New Business	% Business Angel
18 – 24 years old	4.1	1.5	0.8
<b>25 – 34 years old</b>	<b>7.8</b>	<b>2.4</b>	<b>5.6</b>
35 – 44 years old	4.6	1.4	4.1
45 – 54 years old	3.0	1.1	3.2
55 – 64 years old	0.6	1.2	0.6
<b>TOTAL</b>	<b>4.8</b>	<b>1.6</b>	<b>3.6</b>
	% TEA	% Opp TEA	% Nec TEA
18 – 24 years old	4.1	4.1	-
<b>25 – 34 years old</b>	<b>9.3</b>	<b>7.8</b>	1.1
<b>35 – 44 years old</b>	5.9	4.5	<b>1.3</b>
45 – 54 years old	4.6	4.0	0.8
55 – 64 years old	0.6	0.6	-
<b>TOTAL</b>	<b>5.9</b>	<b>4.9</b>	<b>0.8</b>

*Source: GEM 2002 Adult Population Survey*

## GEM 2002 Singapore – Breakdown of entrepreneurs by Education Level

- Respondents with education level of “Junior College” displayed the highest level of entrepreneurial activities.
- 7.2% and 4.4% of the respondents with “Junior College” level of education are involved in start-up or new businesses respectively as compared to the mean of 4.8% and 1.6% for all levels of education.
- Overall TEA is highest with 10.6% of the respondents with “Junior College” level of education as compared to the mean of 4.8% for all levels of education.

## GEM 2002 Singapore – Breakdown by Education Level – Con’t

- Necessity & opportunity TEA are also highest at the education level of “Junior College” with 2.6% and 8.0% respectively as compared to the means of 0.9% and 4.9% respectively for all education levels.
- In terms of business angels, respondents with education level of “Others” displayed the highest level with 6.8% as compared to the mean of 3.6% for all education levels.
- Globally, among all 37 GEM nations, graduates exhibited the highest entrepreneurial propensities, followed by post-secondary, in contrast to Singapore where post secondary showed highest propensities

## GEM 2002 - Level of Entrepreneurial Activity in Singapore by Education Level

	Start-Up	New Business	Business Angel	Overall TEA	Necessity TEA	Opportunity TEA
No Formal Education	5.3%	1.1%	2.9%	7.3%	1.0%	6.3%
Primary	6.4%	1.0%	3.0%	7.7%	1.5%	6.2%
Secondary	5.3%	1.5%	4.2%	5.3%	0.8%	4.4%
<b>Junior College</b>	<b>7.2%</b>	<b>4.4%</b>	3.8%	<b>10.6%</b>	<b>2.6%</b>	<b>8.0%</b>
Polytechnic	2.9%	0.8%	3.1%	4.2%	0.4%	3.5%
University & above	2.6%	1.4%	2.9%	4.1%	0.0%	4.1%
Others	4.8%	3.4%	<b>6.8%</b>	6.6%	0.0%	6.6%
<b>TOTAL</b>	<b>4.8%</b>	<b>1.6%</b>	<b>3.6%</b>	<b>5.9%</b>	<b>0.9%</b>	<b>4.9%</b>

Source: GEM 2002 Adult Population Survey

## GEM 2002 Singapore – Breakdown by Gender (Adult Population Survey)

- In terms of gender, males between the age group of 18 – 64 years old displayed *significant higher* level of entrepreneurial activities in all aspects as compared to the same age group of the female counterparts.
- The discrepancy in entrepreneurial propensities between men and women is much higher in Singapore than for average of 37 GEM nations

## GEM 2002 - Level of Entrepreneurial Activity in Singapore by Gender

	<b>Male</b> <b>(18 – 64 yrs old)</b>	<b>Female</b> <b>(18 – 64 yrs old)</b>	<b>TOTAL</b> <b>(18 – 64 yrs old)</b>
% Involved in Start-Up	<b>7.8</b>	1.9	<b>4.8</b>
% Running New Business	<b>2.4</b>	1.0	<b>1.7</b>
% Angel Investing	<b>4.9</b>	2.3	<b>3.6</b>
% TEA	<b>9.2</b>	2.7	<b>5.9</b>
% Opportunity TEA	<b>7.7</b>	2.3	<b>4.9</b>
% Necessity TEA	<b>1.3</b>	0.4	<b>0.9</b>

*Source: GEM 2002 Adult Population Survey*

## **GEM 2002**

### **National Environment for Entrepreneurship**

#### **\* Key Findings for Singapore \***

### **Informants Breakdown**

<b>GROUP</b>	<b>TOTAL</b>
ENTREPRENEUR	18
POLICY MAKER	4
INVESTOR	7
VENTURE SUPPORT	7
<b>TOTAL</b>	<b>36</b>

## 9 Dimensions of Entrepreneurial Environment

- Financial Support
- Government Policies
- Government Programmes
- Education and Training
- Research and Development Transfer
- Commercial and Professional Infrastructure
- Barriers to Entry
- Access to Physical Infrastructure
- Cultural and Social Norms

## GEM 2002

**Singapore's Entrepreneurial Environment Scoreboard**  
**(a) Entrepreneurship Environment Ratings by Country Informant**  
(Source: Country Expert Survey: Scale 1 = Low to 5 = High)

ITEM	Singapore	Mean	All GEM Countries	
	Score (Mean)		High Score (Ctry)	Low Score (Ctry)
Financial Support	3.27	2.86	3.93 (US)	1.46 (AR)
Government Policies	3.58	2.54	3.68 (CA)	1.54 (AR)
Government Programmes	3.42	2.64	3.41 (SG)	1.62 (AR)
Education & Training Effectiveness	2.66	2.32	3.13 (US)	1.62 (JP)
R&D Transfer Effectiveness	2.60	2.30	3.38 (TW)	1.75 (NL)
Commercial & Professional Infrastructure	3.34	3.16	4.20 (CA)	2.00 (JP)
Barriers to Entry	2.60	2.80	3.58 (TW)	2.36 (FR)
Access to Physical Infrastructure	4.42	3.86	4.79 (CA)	2.98 (HU)
Culture & Social Norms	2.76	2.81	4.51 (US)	1.89 (SE)

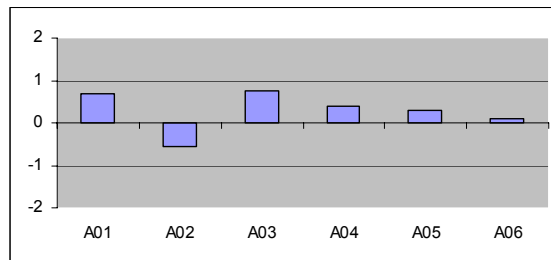
## Overall Assessment of Singapore's Environment for Entrepreneurship

- Overall, the rating of Singapore's environment for entrepreneurship was above the average for all GEM in all dimensions except for "Barriers to Entry" & "Social & Cultural Norm"
- Singapore was particularly highly rated for government policies and programs, and access to physical infrastructure
- Across the 9 dimensions, R&D transfer effectiveness, Barriers to entry, Social & Cultural norms and education & training received the lowest rating (less than 3 out of 5)

### Entrepreneurship Framework Conditions

#### (A) Financial Support

2002



A01 – In my country, there is enough equity funding available for new and growing firms.

A02 – In my country, there is enough debt equity for new and growing firms.

A03 – In my country, public subsidies have a major impact promoting firm creation and growth.

A04 – In my country, private individuals (other than founders) are an important source of financial support for new and growing firms.

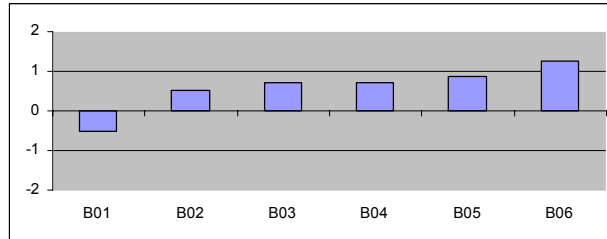
A05 – In my country, venture capitalists are an important source of private support for new and growing firms.

A06 – In my country, initial public offerings (IPO) are an important source of equity for new and growing firms.

**Entrepreneurship Framework Conditions**

(B) Government Policies

2002

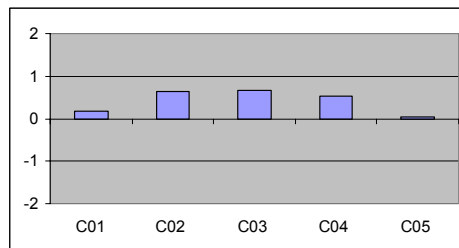


- B01 – In my country, government policies (eg public procurement) consistently favor new firms.
- B02 – In my country, the support for new and growing firms is a high priority for policy at the national government level.
- B03 – In my country, the support for new and growing firms is a high priority for policy at the local government level.
- B04 – In my country, new firms can get most of the required permits and licenses in about a week.
- B05 – In my country, the amount of taxed is NOT a burden for new and growing firms.
- B06 – In my country, taxes and other government regulations are applied to new and growing firms in a predictable and consistent way.

**Entrepreneurship Framework Conditions**

(C) Government Programmes

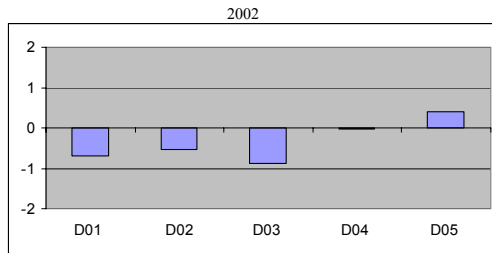
2002



- C01 – In my country, a wide range of government assistance for new and growing firms can be obtained through contact with a single agency
- C02 – In my country, science parks and business incubators provide effective supportive for new and growing firms.
- C03 – In my country, there are an adequate number of government programs for new and growing businesses.
- C04 – In my country, the people working for government agencies are competent and effective I supporting new and growing firms.
- C05 – In my country, almost anyone who need help from government programs for a new or growing business can find what they need.

**Entrepreneurship Framework Conditions**

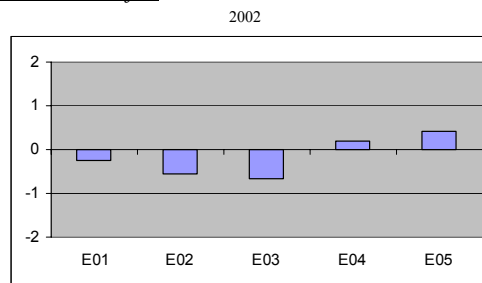
(D) Education and Training



- D01 – In my country, teaching in primary and secondary education encourages creatively, self-sufficiency, and personal initiative.
- D02 – In my country, teaching in primary and secondary education provides adequate instructions in market economic principles.
- D03 – In my country, teaching in primary and secondary education provides adequate attention to entrepreneurship and new firm creation.
- D04 – In my country, colleges and universities have enough courses and programs on entrepreneurship.
- D05 – In my country, the level of business and management education is truly world-class.

**Entrepreneurship Framework Conditions**

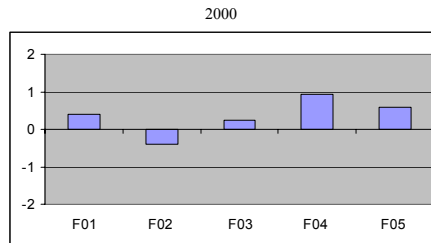
(E) Research and Development Transfer



- E01 – In my country, new technology, science, and other knowledge is effectively transferred from universities and public research centres to new and growing firms.
- E02 – In my country, new and growing firms have just as much access to new research and technology as large, established firms.
- E03 – In my country, new and growing firms can afford the latest technology.
- E04 – In my country, there are adequate government subsidies for new and growing firms to acquire new technology.
- E05 – In my country, the science and technology base effectively supports the creation of world-class new technology-based ventures in at least one area.

**Entrepreneurship Framework Conditions**

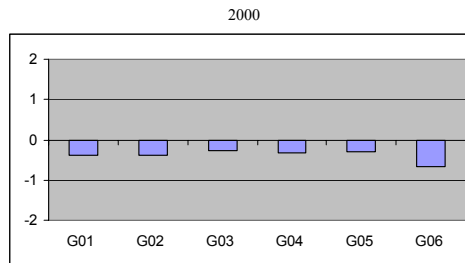
*(F) Commercial and Professional Infrastructure*



- F01 – In my country, there are enough subcontractors, suppliers, and consultants to support new and growing firms.
- F02 – In my country, new and growing firms can afford the cost of using subcontractors, suppliers and consultants.
- F03 – In my country, it is easy for new and growing firms to get high quality subcontractors, suppliers, and consultants.
- F04 – In my country, it is easy for new and growing firms to get good, professional legal and accounting services.
- F05 – In my country, it is easy for new and growing firms to get good banking services (checking accounts, foreign exchange transactions, letters of credit, and the like)

**Entrepreneurship Framework Conditions**

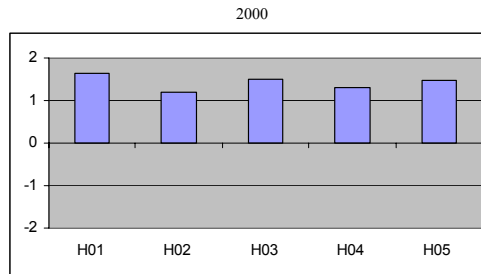
*(G) Barriers to Entry as an Issue*



- G01 – In my country, the markets for consumer goods and services change dramatically from year to year.
- G02 – In my country, the markets for business-to-business goods and services change dramatically from year to year.
- G03 – In my country, new and growing firms can easily enter new markets.
- G04 – In my country, the new and growing firms can afford the cost of market entry.
- G05 – In my country, new and growing firms can enter markets without being unfairly blocked by established firms.
- G06 – In my country, the anti-trust legislation is effective and well enforced.

**Entrepreneurship Framework Conditions**

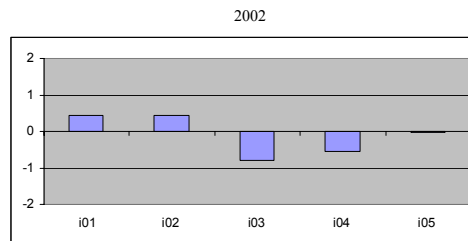
(H) Access to Physical Infrastructure



- H01 - In my country, the physical infrastructure (roads, utilities, communications, waste disposal) provides good support for new and growing firms.
- H02 - In my country, it is not too expensive for new or growing firms to get good access to communications (phone, Internet, etc.).
- H03 - In my country, new or growing firms can get good access to communications (telephone, internet, etc.) in about a week.
- H04 - In my country, new and growing firms can afford the cost of basic utilities (gas, water, electricity, sewer).
- H05 - In my country, new or growing firms can get access to utilities (gas, water, electricity, sewer) in about a month.

**Entrepreneurship Framework Conditions**

(I) Cultural and Social Norms



- i01- In my country, the national culture is highly supportive of individual success achieved through own personal efforts.
- i02- In my country, the national culture emphasises self-sufficiency, autonomy, and personal initiative.
- i03- In my country, the national culture encourages entrepreneurial risk-taking.
- i04- In my country, the national culture encourages creativity and innovativeness.
- i05- In my country, the national culture emphasises the responsibility that the individual (rather than the collective) has in managing her own life.

**GEM 2002 – Additional Indicators of Social & Cultural Attitudes of Singaporeans Towards Entrepreneurship**

- 27.6% of adult population surveyed know someone who has started a business, up from 20.1% in 2001
- 26.6% of those surveyed perceived to have the skills to start a business, up from 24.9% in 2001
- 16.6% of those surveyed between 18 – 64 years old perceived good business opportunities now, up from 16.2% in 2001
- However, these figures are all lower than the averages of GEM 37 nation of 38.2%, 41.3% and 29.6% respectively.
- In terms of fear of failure, 59.2% do not perceive fear as a deterrent, slightly lower than 63.1% from the year before and below GEM average of 67.2%.

**GEM 2002 - Indicators of Social & Cultural Attitudes of Singaporeans Towards Entrepreneurship**

	SG Score (Mean)	All GEM Countries		
		Mean	High Score (Ctry)	Low Score (Ctry)
Know someone who started a business	27.6%	38.2%	58.8% (CH)	12.9% (JP)
Have skills to start a business	26.6%	41.3%	66.8% (AR)	10.6% (JP)
Perceived good business opportunities now	16.6%	29.6%	51.2% (FI)	5.3% (JP)
Fear of failure is not a deterrent	59.2%	67.2%	80.8% (JP)	45.9% (TH)

Source:

- 1) GEM 2002 Adult Population Survey
- 2) GEM 2002 Master Dataset

### Indicators of Social & Cultural Attitudes of Singaporeans Towards Entrepreneurship (2000 – 2002)

Attitude Ratings (Adult Population)	2002	2001	2000
Know someone who started a business	27.6%	20.1%	25.3%
Have skills to start a business	26.6%	24.9%	-
Respect those who start a business	-	-	50.3%
Do not resent successful entrepreneurs	-	-	78.9%
Perceived good business opportunities now	16.6%	16.2%	20.5%
Fear of failure is not a deterrent	59.2%	63.1%	56.3%
Disparity in living standard acceptable	-	-	38.2%
Expects to be financially better off a year from now	-	28.9%	-
Expects business conditions to be better off a year from now	-	35.0%	-

Source: GEM Adult Population Survey (2000 – 2002)

### Changes in Rating of Singapore’s Environment for Entrepreneurship (2000 –2002)

- Overall, the rating of Singapore’s Environment for entrepreneurship appeared to have declined over the last 2 years (2000 – 2002), with the exception of government policies and access to physical infrastructure
- This may be the result of a less favourable economic environment in mid-2002 vs. mid-2001 when the interviews were carried out, and perhaps the fact that a higher proportion of informants are entrepreneurs in the 2002 study vs. earlier years

Table A: Singapore's Entrepreneurial Environment Scoreboard  
for years 2000-2002

Entrepreneurship Environment Ratings by Country Informant

(Source: Country Expert Survey; Scale 1 = Low to 5 = High)

ITEM	2002 Mean score	2001 Mean score	2000 Mean score	ITEM	2002 Mean score	2001 Mean score	2000 Mean score
Financial Support	3.27	3.57	3.60	Commercial and Professional Infrastructure	3.34	3.54	3.33
Government Policies	3.58	3.45	3.50	Barrier to Entry	2.60	3.59	3.80
Government Programmes	3.42	3.41	3.55	Access to Physical Infrastructure	4.42	4.46	4.57
Education and Training	2.66	2.84	2.65	Cultural and Social Norms	2.76	2.92	3.29
Research & Development Transfer	2.60	2.79	3.24				

## Conclusion

- Entrepreneurship propensity in Singapore in 2002 declined a little bit compared to 2001, whereas for all GEM nations with data for 2001 and 2002, a more significant decline (25%) was observed
- Consequently, Singapore's relative ranking in total entrepreneurship propensity (TEA) improved substantially from 27<sup>th</sup> out of 29 in 2001 to 21<sup>st</sup> out of 37 nations in 2002
- In terms of opportunity entrepreneurship, Singapore ranks even higher in 2002 (19<sup>th</sup> out of 37, up from 24<sup>th</sup> out 29 in 2001)
- Compared to the other 36 GEM nations, Singapore's environment for entrepreneurship was rated above average on most dimensions except social & cultural norms and barriers to entry. These are thus the two most important dimensions in need of improvement
- In addition, Singapore needs to improve in two other dimensions that were poorly rated: Education & Training (especially primary & secondary schools), & Research & Development Transfer

## **Conclusions (Contd)**

- Entrepreneurial propensity in Singapore appears to be low among university and polytechnics graduates. (For all 37 GEM nations, graduates had highest entrepreneurial propensity.) As graduates tend to account for a disproportionate share of high growth, knowledge based new business world-wide, more efforts need to be made to promote entrepreneurial interest among this group in Singapore
- Informal capital (angel investment) represents a much greater part of funding of new businesses than formal venture capital, worldwide as well as in Singapore
- While government policy attentions have tended to focus on promoting venture capital, more attention needs to be paid to the promotion of angel investment and other forms of capital