



GLOBAL  
ENTREPRENEURSHIP  
**INDEX**  
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**2018**

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# The Global Entrepreneurship Index 2018

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## About The Global Entrepreneurship and Development Institute

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The Global Entrepreneurship and Development Institute (The GEDI Institute) is the leading research organization advancing knowledge on the relationship between entrepreneurship, economic development, and prosperity. The Institute, headquartered in Washington D.C., was founded by leading entrepreneurship scholars from George Mason University, the University of Pécs,

Imperial College London and the London School of Economics. The Institute's flagship project is the Global Entrepreneurship Index (GEI), a breakthrough advance in measuring the quality and dynamics of entrepreneurship ecosystems at a national and regional level. The GEI methodology, on which the data in this report is based, has been validated by rigorous academic peer review and has been widely reported in the media, including in *The Economist*, *The Wall Street Journal*, *Financial Times*, and *Forbes*. The Institute's research has been funded by the European Union, The World Bank and major corporations and banks around the world.

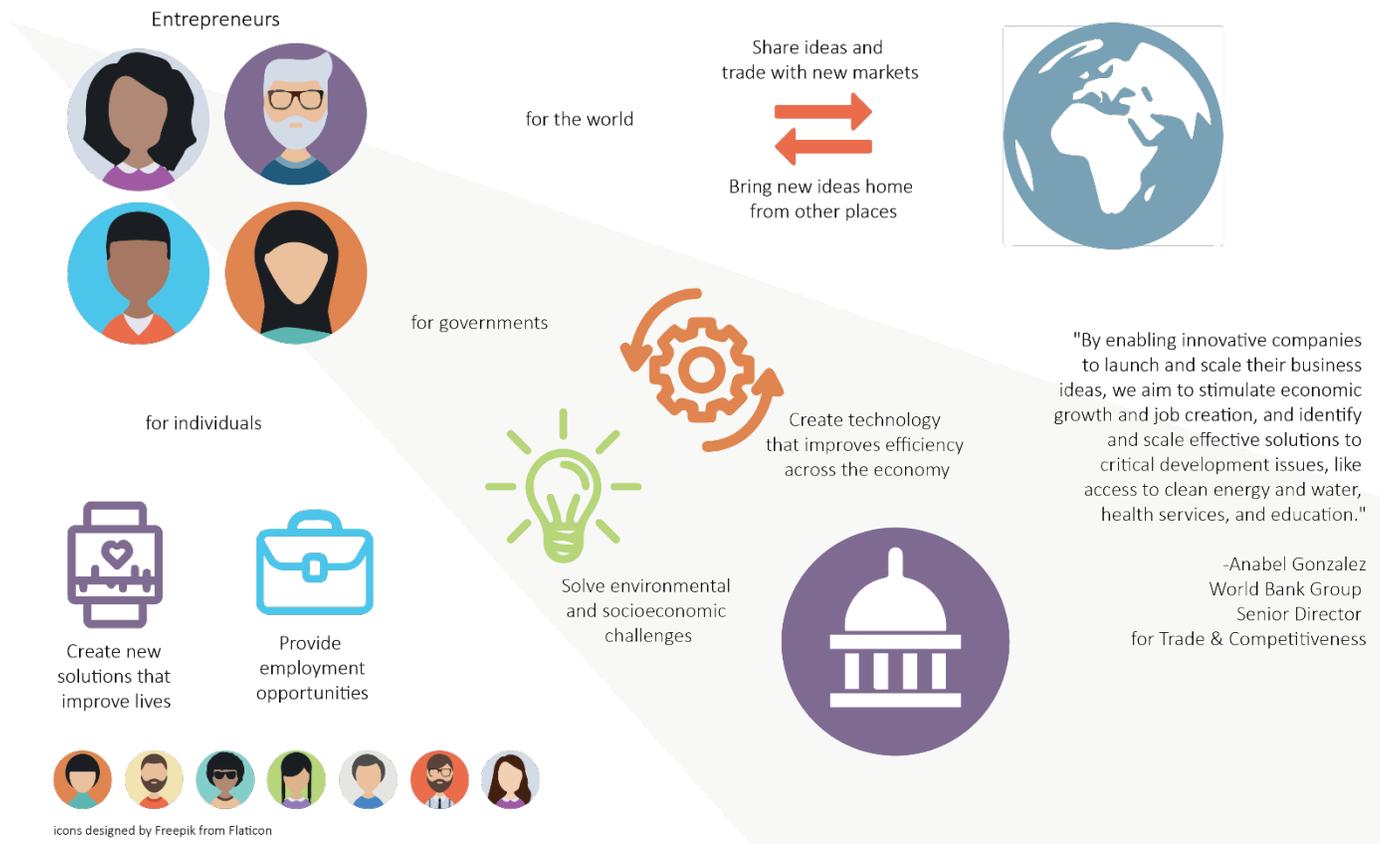
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# The 2018 Global Entrepreneurship Index: Executive Summary

## Why does entrepreneurship matter? How do entrepreneurs contribute?

Entrepreneurs improve economies and people’s lives by creating jobs, developing new solutions to problems, creating technology that improves efficiency, and exchanging ideas globally. Many of the conditions that help entrepreneurs also help the economy as a whole, providing even broader gains from supporting entrepreneurship.



## What is the Global Entrepreneurship Index?

The Global Entrepreneurship Index is a composite indicator of the health of the entrepreneurship ecosystem in a given country.

The GEI measures both the quality of entrepreneurship and the extent and depth of the supporting entrepreneurial ecosystem. We’ve identified the 14 components that we believe are important for the health of entrepreneurial ecosystems, identified data to capture each, and used this data to calculate three levels of scores for a given country: the overall GEI score, scores for Individuals and Institutions, and pillar level

scores (which measure the quality of each of our 14 components). The questions that we seek to answer using the variables we’ve selected for each pillar are:

| Component of the entrepreneurship ecosystem <sup>1</sup> | What does it measure?  |
|--|--|
| Pillar 1: Opportunity Perception                         | Can the population identify opportunities to start a business and does the institutional environment make it possible to act on those opportunities? |
| Pillar 2: Startup Skills                                 | Does the population have the skills necessary to start a business based on their own perceptions and the availability of tertiary education?         |

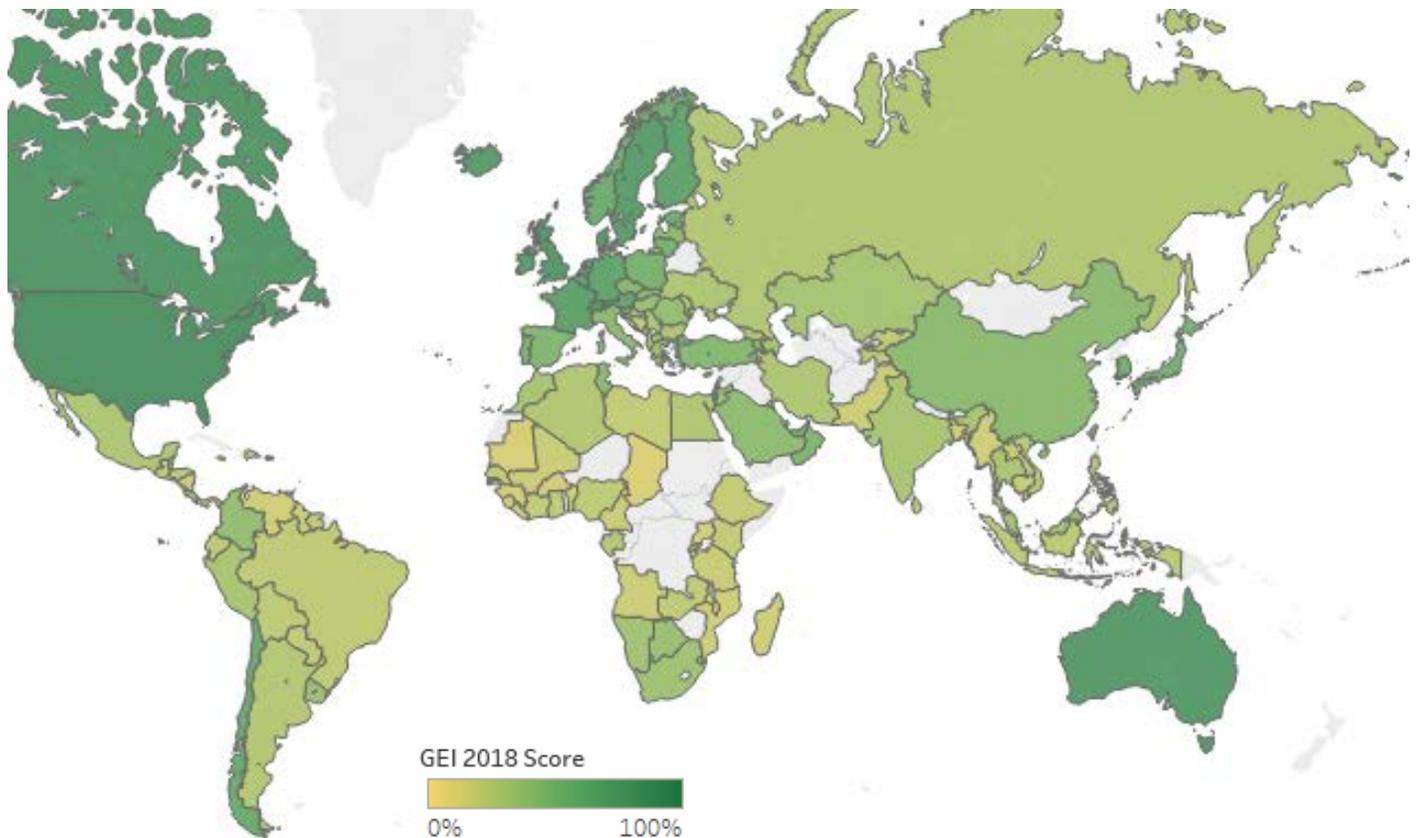
<sup>1</sup> For more detail on the contents of these pillars, see “The Global Entrepreneurship Index 2018: in depth” section of this report. For additional detail on our methodology, see the 2018 GEI Technical Annex, available at [www.thegei.org](http://www.thegei.org).

| Component of the entrepreneurship ecosystem <sup>1</sup> | What does it measure?   |
|--|---|
| Pillar 3: Risk Acceptance                                | Are individuals willing to take the risk of starting a business? Is the environment relatively low risk or do unstable institutions add additional risk to starting a business? |
| Pillar 4: Networking                                     | Do entrepreneurs know each other and how geographically concentrated are their networks?  |
| Pillar 5: Cultural Support                               | How does the country view entrepreneurship? Is it easy to choose entrepreneurship or does corruption make entrepreneurship difficult relative to other career paths?            |
| Pillar 6: Opportunity Perception                         | Are entrepreneurs motivated by opportunity rather than necessity and does governance make the choice to be an entrepreneur easy?  |
| Pillar 7: Technology Absorption                          | Is the technology sector large and can businesses rapidly absorb new technology?  |

| Component of the entrepreneurship ecosystem <sup>1</sup> | What does it measure?  |
|--|--|
| Pillar 8: Human Capital                                  | Are entrepreneurs highly educated, well trained in business and able to move freely in the labor market?                     |
| Pillar 9: Competition                                    | Are entrepreneurs creating unique products and services and able to enter the market with them?                              |
| Pillar 10: Product Innovation                            | Is the country able to develop new products and integrate new technology?  |
| Pillar 11: Process Innovation                            | Do businesses use new technology and are they able access high quality human capital in STEM fields?                         |
| Pillar 12: High Growth                                   | Do businesses intend to grow and have the strategic capacity to achieve this growth?   |
| Pillar 13: Internationalization                          | Do entrepreneurs want to enter global markets and is the economy complex enough to produce ideas that are valuable globally? |
| Pillar 14: Risk Capital                                  | Is capital available from both individual and institutional investors?   |

### What do this year's results show?

The map below shows the overall GEI score for each of the 137 countries in the 2018 Global Entrepreneurship Index



- Globally, GEI scores have improved by 3% on average since last year's Index.
- In the 2018 GEI, the **Asia-Pacific region** on average scores best (and is improving) in Product Innovation. The region is also strong in Human Capital
- **Europe** shows stable high scores in Technology Absorption and Internationalization, and region's average score on Startup Skills has recently climbed into the same league.
- The **Middle East and North Africa** region demonstrates strength in Product Innovation and Risk Capital.
- **North America's** strongest areas are Opportunity Perception and Risk Acceptance
- **South / Central America and the Caribbean** is strongest in the areas of Startup Skills and Product Innovation
- **Sub-Saharan Africa** shows greatest strength in Opportunity Perception.
- Globally, we've seen a **22% increase in Product Innovation scores** since the 2017 GEI, and an **11% increase in Startup Skills scores** since the 2017 GEI. This suggests that the global population is becoming more educated and identifying more opportunities to create new products.
- **Small declines** (less than 2%) since the 2017 GEI were seen across five areas: **Cultural support, Human capital, Competition, Internationalization and Risk**

**Capital.** This indicates that the overall environment has in some ways become slightly less friendly to entrepreneurship.

The conclusion – certain aspects of being an entrepreneur have become a bit harder, but entrepreneurs are more than meeting this challenge with new skill acquisition and improvements in innovation capacity.

The table below shows the rank of each country in the 2018 Index:

| Country                | Rank .. | GEI | Country              | Rank .. | GEI |
|------------------------|---------|-----|----------------------|---------|-----|
| Albania                | 83      | 24% | Germany              | 15      | 66% |
| Algeria                | 80      | 25% | Ghana                | 93      | 21% |
| Angola                 | 123     | 14% | Greece               | 48      | 37% |
| Argentina              | 85      | 24% | Guatemala            | 108     | 18% |
| Armenia                | 88      | 23% | Guinea               | 130     | 13% |
| Australia              | 5       | 75% | Guyana               | 116     | 16% |
| Austria                | 14      | 66% | Honduras             | 107     | 19% |
| Azerbaijan             | 62      | 30% | Hong Kong            | 13      | 67% |
| Bahrain                | 35      | 45% | Hungary              | 50      | 36% |
| Bangladesh             | 134     | 12% | Iceland              | 7       | 74% |
| Barbados               | 55      | 34% | India                | 68      | 28% |
| Belgium                | 17      | 64% | Indonesia            | 94      | 21% |
| Belize                 | 63      | 30% | Iran                 | 72      | 27% |
| Benin                  | 128     | 13% | Ireland              | 8       | 74% |
| Bolivia                | 97      | 20% | Israel               | 16      | 65% |
| Bosnia and Herzegovina | 95      | 21% | Italy                | 42      | 41% |
| Botswana               | 52      | 35% | Jamaica              | 89      | 22% |
| Brazil                 | 98      | 20% | Japan                | 28      | 52% |
| Brunei Darussalam      | 53      | 34% | Jordan               | 49      | 37% |
| Bulgaria               | 69      | 28% | Kazakhstan           | 64      | 30% |
| Burkina Faso           | 129     | 13% | Kenya                | 109     | 18% |
| Burundi                | 135     | 12% | Korea                | 24      | 54% |
| Cambodia               | 113     | 18% | Kuwait               | 39      | 43% |
| Cameroon               | 121     | 15% | Kyrgyz Republic      | 100     | 20% |
| Canada                 | 3       | 79% | Lao PDR              | 112     | 18% |
| Chad                   | 137     | 9%  | Latvia               | 44      | 40% |
| Chile                  | 19      | 59% | Lebanon              | 59      | 32% |
| China                  | 43      | 41% | Liberia              | 119     | 16% |
| Colombia               | 47      | 38% | Libya                | 104     | 19% |
| Costa Rica             | 56      | 33% | Lithuania            | 29      | 51% |
| Croatia                | 54      | 34% | Luxembourg           | 20      | 58% |
| Cyprus                 | 32      | 48% | Macedonia            | 66      | 29% |
| Czech Republic         | 38      | 43% | Madagascar           | 125     | 14% |
| Côte d'Ivoire          | 105     | 19% | Malawi               | 133     | 12% |
| Denmark                | 6       | 74% | Malaysia             | 58      | 33% |
| Dominican Republic     | 82      | 24% | Mali                 | 118     | 16% |
| Ecuador                | 96      | 20% | Mauritania           | 136     | 11% |
| Egypt                  | 76      | 26% | Mexico               | 75      | 26% |
| El Salvador            | 114     | 17% | Moldova              | 92      | 21% |
| Estonia                | 23      | 55% | Montenegro           | 60      | 31% |
| Ethiopia               | 110     | 18% | Morocco              | 65      | 29% |
| Finland                | 12      | 68% | Mozambique           | 124     | 14% |
| France                 | 10      | 69% | Myanmar              | 127     | 14% |
| Gabon                  | 79      | 25% | Namibia              | 61      | 31% |
| Gambia, The            | 117     | 16% | Netherlands          | 11      | 68% |
| Georgia                | 77      | 26% | Nicaragua            | 122     | 15% |
|                        |         |     | Nigeria              | 101     | 20% |
|                        |         |     | Norway               | 21      | 57% |
|                        |         |     | Oman                 | 33      | 47% |
|                        |         |     | Pakistan             | 120     | 16% |
|                        |         |     | Panama               | 70      | 28% |
|                        |         |     | Paraguay             | 106     | 19% |
|                        |         |     | Peru                 | 67      | 28% |
|                        |         |     | Philippines          | 84      | 24% |
|                        |         |     | Poland               | 30      | 50% |
|                        |         |     | Portugal             | 31      | 49% |
|                        |         |     | Puerto Rico          | 41      | 42% |
|                        |         |     | Qatar                | 22      | 55% |
|                        |         |     | Romania              | 46      | 38% |
|                        |         |     | Russia               | 78      | 25% |
|                        |         |     | Rwanda               | 91      | 21% |
|                        |         |     | Saudi Arabia         | 45      | 40% |
|                        |         |     | Senegal              | 103     | 19% |
|                        |         |     | Serbia               | 74      | 26% |
|                        |         |     | Sierra Leone         | 132     | 12% |
|                        |         |     | Singapore            | 27      | 53% |
|                        |         |     | Slovakia             | 36      | 45% |
|                        |         |     | Slovenia             | 25      | 54% |
|                        |         |     | South Africa         | 57      | 33% |
|                        |         |     | Spain                | 34      | 45% |
|                        |         |     | Sri Lanka            | 90      | 22% |
|                        |         |     | Suriname             | 111     | 18% |
|                        |         |     | Swaziland            | 86      | 24% |
|                        |         |     | Sweden               | 9       | 73% |
|                        |         |     | Switzerland          | 2       | 80% |
|                        |         |     | Taiwan               | 18      | 59% |
|                        |         |     | Tajikistan           | 99      | 20% |
|                        |         |     | Tanzania             | 115     | 16% |
|                        |         |     | Thailand             | 71      | 27% |
|                        |         |     | Trinidad & Tobago    | 81      | 24% |
|                        |         |     | Tunisia              | 40      | 42% |
|                        |         |     | Turkey               | 37      | 45% |
|                        |         |     | Uganda               | 131     | 13% |
|                        |         |     | Ukraine              | 73      | 27% |
|                        |         |     | United Arab Emirates | 26      | 53% |
|                        |         |     | United Kingdom       | 4       | 78% |
|                        |         |     | United States        | 1       | 84% |
|                        |         |     | Uruguay              | 51      | 35% |
|                        |         |     | Venezuela            | 126     | 14% |
|                        |         |     | Vietnam              | 87      | 23% |
|                        |         |     | Zambia               | 102     | 20% |

The 3% improvement in GEI scores over last year could add

## \$7 trillion to global GDP

because institutions that support entrepreneurs also positively impact the economy as a whole.

### Asia-Pacific

has improved by

▲ **4.0%**

on average over last year's GEI score



Australia leads at 75%

**Quick win:** The Asia-Pacific region would see the quickest gains by improving **Risk Acceptance:** improving risk tolerance and reducing country risk factors

### Europe

has improved by

▲ **3.4%**

on average over last year's GEI score



Switzerland leads at 80%

**Quick win:** The European region would see the quickest gains by improving **Networking:** supporting the geographic and social networks that connect entrepreneurs

### The Middle East and North Africa

has improved by

▲ **2.9%**

on average over last year's GEI score



Israel leads at 65%

**Quick win:** The MENA region would see the quickest gains by improving **Competition:** reducing barriers to entry for new firms

### North America

has improved by

▲ **2.5%**

on average over last year's GEI score



United States leads at 84%

**Quick win:** The North American region would see the quickest gains by improving **High Growth:** supporting the willingness and ability of new firms to grow and scale

### South / Central America & the Caribbean

has improved by

▲ **4.6%**

on average over last year's GEI score



Chile leads at 59%

**Quick win:** The South / Central America & Caribbean region would see the quickest gains by improving **Process Innovation:** increasing the use of new technology and presence of STEM workforce

### Sub-Saharan Africa

has improved by

▲ **1.5%**

on average over last year's GEI score



Botswana leads at 35%

**Quick win:** The Sub-Saharan Africa region would see the quickest gains by improving **Startup Skills:** improving access to the education and skills that support careers in entrepreneurship

## Regional results: Asia – Pacific

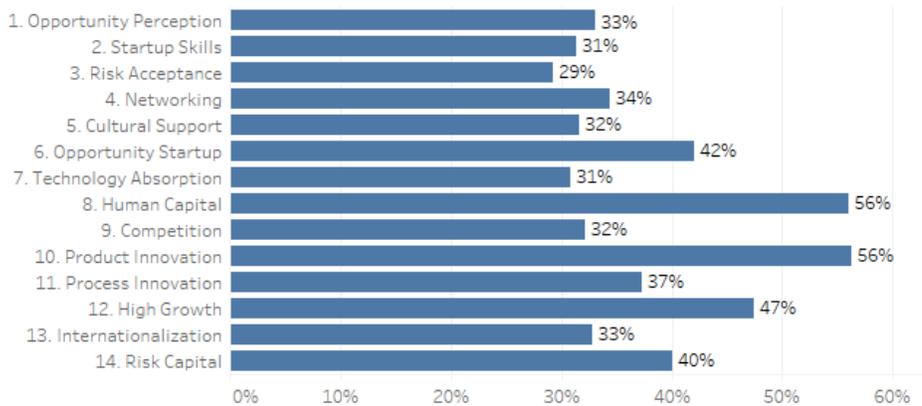
### GEI ranks within the Asia - Pacific region



### Regional ranks and scores

|    | GEI               |     |
|----|-------------------|-----|
| 1  | Australia         | 75% |
| 2  | Hong Kong         | 67% |
| 3  | Taiwan            | 59% |
| 4  | Korea             | 54% |
| 5  | Singapore         | 53% |
| 6  | Japan             | 52% |
| 7  | Bahrain           | 45% |
| 8  | Turkey            | 45% |
| 9  | China             | 41% |
| 10 | Brunei Darussalam | 34% |
| 11 | Malaysia          | 33% |
| 12 | Azerbaijan        | 30% |
| 13 | Kazakhstan        | 30% |
| 14 | India             | 28% |
| 15 | Thailand          | 27% |
| 16 | Georgia           | 26% |
| 17 | Philippines       | 24% |
| 18 | Vietnam           | 23% |
| 19 | Armenia           | 23% |
| 20 | Sri Lanka         | 22% |
| 21 | Indonesia         | 21% |
| 22 | Tajikistan        | 20% |
| 23 | Kyrgyz Republic   | 20% |
| 24 | Lao PDR           | 18% |
| 25 | Cambodia          | 18% |
| 26 | Pakistan          | 16% |
| 27 | Myanmar           | 14% |
| 28 | Bangladesh        | 12% |

### Regional component averages



The Asia-Pacific region shows greatest strength in Human Capital and Product Innovation – on average, countries in the Asia-Pacific region have highly educated populations that are well trained in business and able to move freely in the labor market. They are also producing products that are new to customers and integrating new technology.

The region’s lowest scores on average are in the area of Risk Acceptance. If countries in the region improve their overall risk profile as well as the populations’ attitudes

towards taking risks, it is likely that the entrepreneurship ecosystems in the Asia-Pacific region will gain ground.

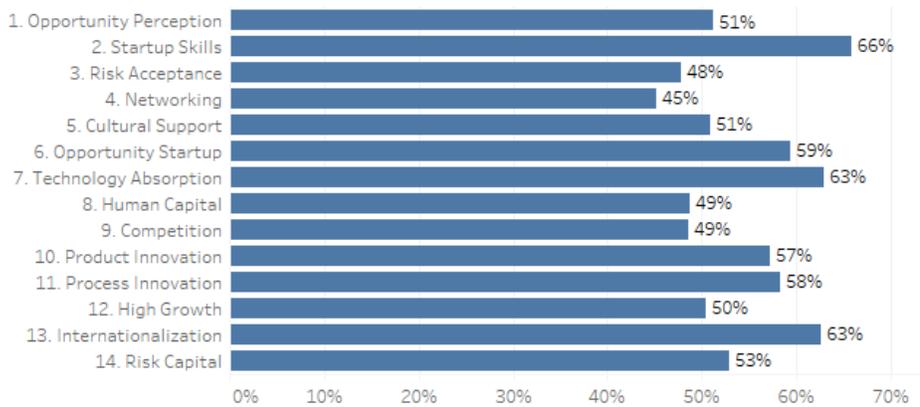
Tech giants dominate the region’s top ranks, while lower income, agriculture and manufacturing-dependent economies are found closer to the bottom. Emerging hotspots for the digital economy are found near the middle of regional ranks. China and South Korea saw the largest gains in the region on overall GEI score since the 2017 GEI.

## Regional results: Europe

### GEI ranks within the Europe region



### Regional component averages



European nations post high average scores on Startup Skills, owing to a legacy of broadly available tertiary education and a populace that largely possesses the skills necessary to start a business. The region's biggest weakness is in Networking, though it still scores above the global average in this area. Overall, Europe's scores are relatively balanced across all components of the GEI, suggesting that a broader mix of policy is likely to have a larger impact on overall performance than focusing on single policy area might.

### Regional ranks and scores

| Rank | Country                | GEI Score (%) |
|------|------------------------|---------------|
| 1    | Switzerland            | 80%           |
| 2    | United Kingdom         | 78%           |
| 3    | Denmark                | 74%           |
| 4    | Iceland                | 74%           |
| 5    | Ireland                | 74%           |
| 6    | Sweden                 | 73%           |
| 7    | France                 | 69%           |
| 8    | Netherlands            | 68%           |
| 9    | Finland                | 68%           |
| 10   | Austria                | 66%           |
| 11   | Germany                | 66%           |
| 12   | Belgium                | 64%           |
| 13   | Luxembourg             | 58%           |
| 14   | Norway                 | 57%           |
| 15   | Estonia                | 55%           |
| 16   | Slovenia               | 54%           |
| 17   | Lithuania              | 51%           |
| 18   | Poland                 | 50%           |
| 19   | Portugal               | 49%           |
| 20   | Cyprus                 | 48%           |
| 21   | Spain                  | 45%           |
| 22   | Slovakia               | 45%           |
| 23   | Czech Republic         | 43%           |
| 24   | Italy                  | 41%           |
| 25   | Latvia                 | 40%           |
| 26   | Romania                | 38%           |
| 27   | Greece                 | 37%           |
| 28   | Hungary                | 36%           |
| 29   | Croatia                | 34%           |
| 30   | Montenegro             | 31%           |
| 31   | Macedonia              | 29%           |
| 32   | Bulgaria               | 28%           |
| 33   | Ukraine                | 27%           |
| 34   | Serbia                 | 26%           |
| 35   | Russia                 | 25%           |
| 36   | Albania                | 24%           |
| 37   | Moldova                | 21%           |
| 38   | Bosnia and Herzegovina | 21%           |



Northern European nations are found in the region's top ranks, while Eastern European nations are found at the bottom. Seven of the GEI's top ten countries are in the European region. The United Kingdom, Bulgaria, Italy, Poland and Ireland all improved their overall GEI scores by at least 3.5 points over their 2017 GEI scores, placing them among the top ten biggest gains in score globally.

## Regional results: Middle East and North Africa

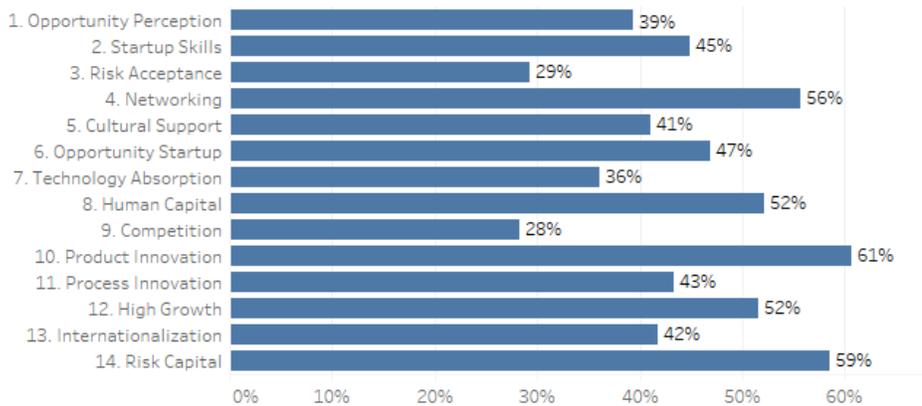
### GEI ranks within the Middle East and North Africa region



### Regional ranks and scores

|                        | GEI |
|------------------------|-----|
| 1 Israel               | 65% |
| 2 Qatar                | 55% |
| 3 United Arab Emirates | 53% |
| 4 Oman                 | 47% |
| 5 Kuwait               | 43% |
| 6 Tunisia              | 42% |
| 7 Saudi Arabia         | 40% |
| 8 Jordan               | 37% |
| 9 Lebanon              | 32% |
| 10 Morocco             | 29% |
| 11 Iran                | 27% |
| 12 Egypt               | 26% |
| 13 Algeria             | 25% |
| 14 Libya               | 19% |

### Regional component averages



The MENA region shows greatest strength in the areas of Product Innovation and Risk Capital. The region is bringing new products to market and integrating new technology, while also providing the capital to help businesses grow. The region's lowest average scores are in the areas of Competition and Risk Acceptance, as large firms dominate many economies in the region and businesses face higher risks in many MENA countries than in other areas.

Open economies that have embraced global trade and created attractive investment climates score near the top of the region, while countries that have seen economic and political instability rank nearer the bottom.

Both Israel and Iran saw overall score improvements of more than four points over the previous GEI, and are among the top ten biggest gains in score globally for the 2018 GEI.

## Regional results: North America

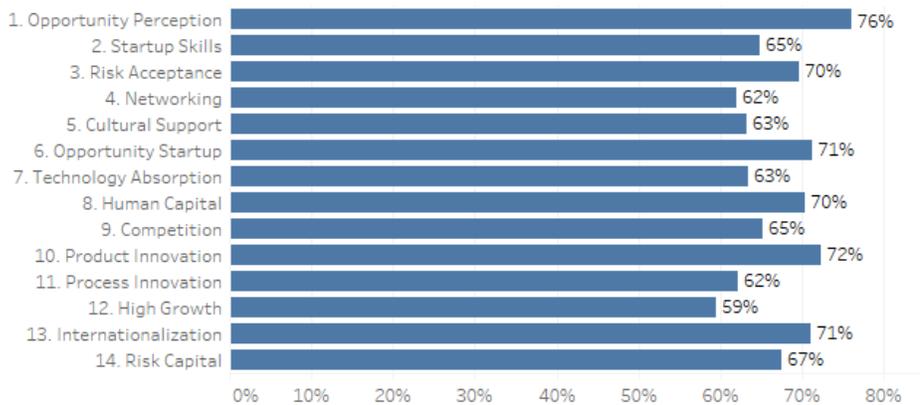
### GEI ranks within the North America region



### Regional ranks and scores

|                 | GEI |
|-----------------|-----|
| 1 United States | 84% |
| 2 Canada        | 79% |
| 3 Mexico        | 26% |

### Regional component averages



The US and Canada drive most high average regional scores for North America, while Mexico contributes top scores in the area of Networking. The region's overall greatest strengths are in Opportunity Perception and Product Innovation – the region's population is able to spot and act on good opportunities for starting a business, and is able to bring new products to market and integrate new technology. The region struggles most

in the area of High Growth – an indication that entrepreneurs in North America are not as motivated to grow and scale their businesses as their other component scores would suggest.

Canada ranks among the top ten biggest score improvements in the 2018 GEI.

## Regional results: South/Central America and the Caribbean

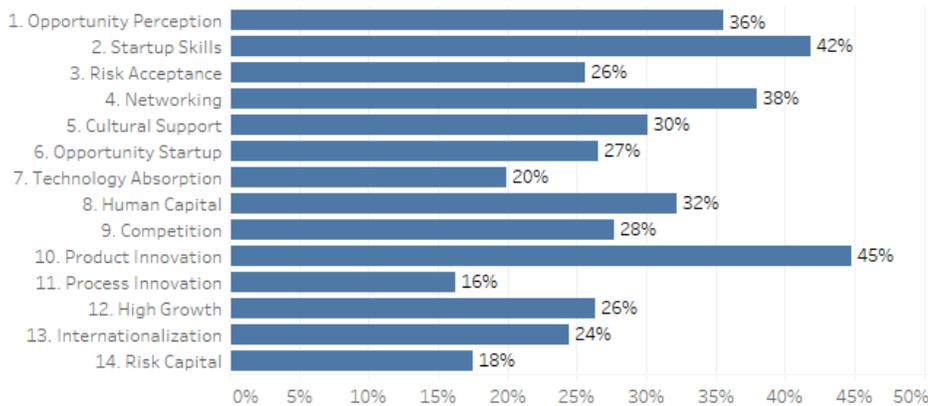
### GEI ranks within the South/Central America and the Caribbean region



### Regional ranks and scores

|    | GEI                |     |
|----|--------------------|-----|
| 1  | Chile              | 59% |
| 2  | Puerto Rico        | 42% |
| 3  | Colombia           | 38% |
| 4  | Uruguay            | 35% |
| 5  | Barbados           | 34% |
| 6  | Costa Rica         | 33% |
| 7  | Belize             | 30% |
| 8  | Peru               | 28% |
| 9  | Panama             | 28% |
| 10 | Trinidad & Tobago  | 24% |
| 11 | Dominican Republic | 24% |
| 12 | Argentina          | 24% |
| 13 | Jamaica            | 22% |
| 14 | Ecuador            | 20% |
| 15 | Bolivia            | 20% |
| 16 | Brazil             | 20% |
| 17 | Paraguay           | 19% |
| 18 | Honduras           | 19% |
| 19 | Guatemala          | 18% |
| 20 | Suriname           | 18% |
| 21 | El Salvador        | 17% |
| 22 | Guyana             | 16% |
| 23 | Nicaragua          | 15% |
| 24 | Venezuela          | 14% |

### Regional component averages



The South/Central America and the Caribbean region scores highest on average on Startup Skills and Product Innovation. Entrepreneurs benefit from broadly available tertiary education and a high levels of business skill. They are also creating products that are new to markets and integrating new technology into their businesses.

Unlike regions with more balanced performance, this region has an opportunity to create significant improvements by focusing on a small number of key bottlenecks: Process Innovation and Risk Capital.

Similar to previous years, Chile far outperforms the rest of the region, with a score forty percent higher than the region’s second highest score.

## Regional results: Sub-Saharan Africa

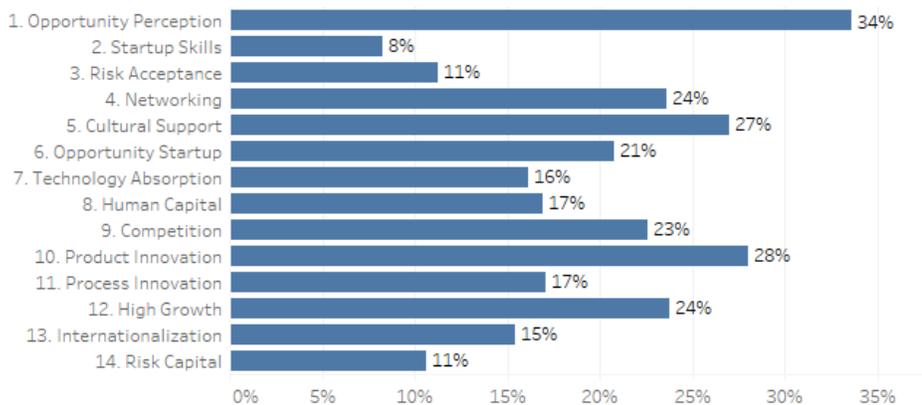
### GEI ranks within the Sub-Saharan Africa region



### Regional ranks and scores

|    | GEI           |     |
|----|---------------|-----|
| 1  | Botswana      | 35% |
| 2  | South Africa  | 33% |
| 3  | Namibia       | 31% |
| 4  | Gabon         | 25% |
| 5  | Swaziland     | 24% |
| 6  | Rwanda        | 21% |
| 7  | Ghana         | 21% |
| 8  | Nigeria       | 20% |
| 9  | Zambia        | 20% |
| 10 | Senegal       | 19% |
| 11 | Côte d'Ivoire | 19% |
| 12 | Kenya         | 18% |
| 13 | Ethiopia      | 18% |
| 14 | Tanzania      | 16% |
| 15 | Gambia, The   | 16% |
| 16 | Mali          | 16% |
| 17 | Liberia       | 16% |
| 18 | Cameroon      | 15% |
| 19 | Angola        | 14% |
| 20 | Mozambique    | 14% |
| 21 | Madagascar    | 14% |
| 22 | Benin         | 13% |
| 23 | Burkina Faso  | 13% |
| 24 | Guinea        | 13% |
| 25 | Uganda        | 13% |
| 26 | Sierra Leone  | 12% |
| 27 | Malawi        | 12% |
| 28 | Burundi       | 12% |
| 29 | Mauritania    | 11% |
| 30 | Chad          | 9%  |

### Regional component averages



Sub-Saharan Africa's greatest strength is in the area of Opportunity Perception. Entrepreneurs in the region are able to spot opportunities around them for starting businesses. The region's lowest average scores are in the areas of Startup Skills, Risk Acceptance and Risk Capital. Tertiary education is not as broadly accessible as in other regions, and entrepreneurial skills are less common. The general risk climate is not as favorable in the region as in other areas, and the capital availability lags behind other regions.

There is significant opportunity for improvement, however, as Sub-Saharan Africa can look to the examples of regional leaders Botswana and South Africa. Both countries demonstrate the possibility for great change and substantial improvement on relatively short time scales. Further, the region has a few clear bottlenecks which, if addressed, could quickly yield overall improvements in entrepreneurial ecosystems and the economy as a whole.

## What can I do to improve the entrepreneurship ecosystem?

The Global Entrepreneurship Index covers 14 areas (what we call pillars) of the entrepreneurship ecosystem. Each country has one (or several) critical areas that are holding back the ecosystem, and different actions can be taken to generate improvements in each of these areas. With the help of three experts – Professor Richard Saouma, Venture Capitalist Ken Krull and Researcher Ainsley Lloyd - we've generated the following (non-exhaustive) list of example actions that one might take to impact each of the 14 areas measured by the GEI. We don't endorse all of these actions for all contexts, but instead hope that this list helps start the conversation around improving the bottleneck issues in your entrepreneurship ecosystem.

| Area of the entrepreneurship ecosystem | What does it measure?  | What can I do if I'm a(n)...   |   |   |
|--|--|--|---|---|
|  |  | Entrepreneur   | Large company   | Policymaker   |
| OPPORTUNITY PERCEPTION                 | Can the population identify opportunities to start a business and does the institutional environment make it possible to act on those opportunities? | <ul style="list-style-type: none"> <li>Expose yourself to new experiences to boost creative thinking.</li> <li>Start a "side hustle" to test a business concept.</li> </ul>  | <ul style="list-style-type: none"> <li>Market and promote partnerships with entrepreneurial firms.</li> <li>Create an entrepreneurship culture.</li> <li>Create a policy of paid side project time (like Google).</li> <li>Bring attention to the entrepreneurial qualities of employees and how the firm empowers them to create value.</li> <li>Show how the firm has partnered with entrepreneurs to help them launch a businesses.</li> </ul> | <ul style="list-style-type: none"> <li>Lower tax rates.</li> <li>Promote entrepreneurial successes within economic development initiatives.</li> <li>Advertise the success of local entrepreneurs who played by the book.</li> </ul>  |
| STARTUP SKILLS                         | Does the population have the skills necessary to start a business based on their own perceptions and the availability of tertiary education?         | <ul style="list-style-type: none"> <li>Ask entrepreneurs around you how they have developed the skills that have helped them be successful.</li> <li>Participate in continuing education.</li> <li>Learn a new skill.</li> <li>Take an online course.</li> </ul> | <ul style="list-style-type: none"> <li>Reimburse or match for continuing education.</li> <li>Incorporate educational childcare and after school care programs for working parents.</li> <li>Sponsor skill building with local associations.</li> <li>Emphasize the importance of entrepreneurship skills in collegiate recruitment programs at the pre-internship stage.</li> </ul>   | <ul style="list-style-type: none"> <li>Expand access to tertiary education to a broader portion of the population.</li> <li>Offer tax credits for educational expenses.</li> <li>Implement tax exempt educational savings plans.</li> <li>Create a policy to reduce the child workforce.</li> <li>Make high school business education mandatory, including the identification and capture of value.</li> <li>Fund regional initiatives to encourage student entrepreneurship, and make sure to prioritize under-funded initiatives.</li> <li>Offer funding with no strings attached to the student entrepreneur who gets the most traction on the least amount of resources.</li> </ul> |

| Area of the entrepreneurship ecosystem | What does it measure?   | What can I do if I'm a(n)...  |  |   |
|--|---|---|--|---|
|  |   | Entrepreneur  | Large company  | Policymaker   |
| RISK ACCEPTANCE                        | Are individuals willing to take the risk of starting a business? Is the environment relatively low risk or do unstable institutions add additional risk to starting a business? | <ul style="list-style-type: none"> <li>• Run the smallest possible test you can run to validate your idea.</li> <li>• Predefine successful outcomes.</li> <li>• Recruit critical advisors willing to kill concepts that don't fit.</li> <li>• Realize that not all ideas can be implemented today or have a valid skillset match for the entrepreneur.</li> <li>• Identify external dependencies on your idea's success.</li> </ul> | <ul style="list-style-type: none"> <li>• Create an ok to fail culture.</li> <li>• Reward appropriate risk taking behavior.</li> <li>• Help employees plan their efforts and log outcomes. The documentation process will help them realize that they take risk every day, and while they remember the failures, there are myriad daily wins.</li> </ul>  | <ul style="list-style-type: none"> <li>• Improve institutional and regulatory stability and ensure absence of conflict.</li> <li>• Create simple and consistent personal and corporate bankruptcy processes.</li> <li>• Change the communication around social safety nets to highlight the fact that they are a great resource for potential entrepreneurs because they mitigate damages for those who fail.</li> </ul>  |
| NETWORKING                             | Do entrepreneurs know each other and how geographically concentrated are their networks?  | <ul style="list-style-type: none"> <li>• Find places where other entrepreneurs gather and engage (e.g. Kauffman Foundation's one million cups).</li> <li>• Join a forum, club, association or other group related to your concept.</li> </ul>   | <ul style="list-style-type: none"> <li>• Sponsor formal networking functions as corporate recruiting.</li> <li>• Encourage mentorship.</li> <li>• Build formal intern and apprenticeship programs.</li> <li>• Host social events with entrepreneurs where entrepreneurs can learn what are the real pain points faced by companies, how they can add value, and/or what fish are too small for the large firm to fry.</li> </ul> | <ul style="list-style-type: none"> <li>• Improve ICT access and infrastructure</li> <li>• Promote vertical associations' networking activities.</li> <li>• Sponsor an entrepreneurship week every two months. Showcase the work of startups in your area and invite the public.</li> <li>• Create "incubation space" in economically depressed areas - empty cargo containers, a room with 4 walls - that is available to would be entrepreneurs, open 24/7.</li> </ul> |
| CULTURAL SUPPORT                       | How does the country view entrepreneurship? Is it easy to choose entrepreneurship or does corruption make entrepreneurship difficult relative to other career paths?            | <ul style="list-style-type: none"> <li>• Encourage and support entrepreneurs around you.</li> <li>• Create a blog or other appropriate social media around the developing of your entrepreneurial concept.</li> </ul>   | <ul style="list-style-type: none"> <li>• Market entrepreneurship as formal company PR.</li> <li>• Sponsor recognition programs promoting entrepreneurship, like Entrepreneur of the Year programs.</li> <li>• Ensure that HR highlights the importance of entrepreneurial spirit to the entire pipeline of potential future employees, starting in high schools.</li> </ul>  | <ul style="list-style-type: none"> <li>• Reduce and prevent corruption.</li> <li>• Track formal statistics on entrepreneurship and its effect on GDP and other institutional metrics.</li> <li>• Make it easy for firms to plug into communities to announce their values (entrepreneurship) in e.g. high schools, by structuring formal slots or entrepreneurship days with the school system.</li> </ul>  |
| OPPORTUNITY STARTUP                    | Are entrepreneurs motivated by opportunity rather than necessity and does governance make the choice to be an entrepreneur easy?  | <ul style="list-style-type: none"> <li>• Mentor or contribute to best practices in interacting with government and administrative overhead.</li> </ul>  | <ul style="list-style-type: none"> <li>• Allow spinouts of corporate developed ideas that the company can't pursue.</li> </ul>   | <ul style="list-style-type: none"> <li>• Reduce the administrative burden of paying taxes and improve the capacity of the government to create and implement sound policies.</li> <li>• Lower the administrative overhead of incorporating and managing a business.</li> </ul>  |

| Area of the entrepreneurship ecosystem | What does it measure?  | What can I do if I'm a(n)...  |  |  |
|--|--|---|--|--|
|  |  | Entrepreneur  | Large company  | Policymaker  |
| TECHNOLOGY ABSORPTION                  | Is the technology sector large and can businesses rapidly absorb new technology?   | <ul style="list-style-type: none"> <li>Keep abreast of current technology and trends.</li> <li>Invest in technology that furthers your business.</li> </ul> | <ul style="list-style-type: none"> <li>Educate employees in current technology and trends.</li> <li>Invest in technology partnerships that businesses align.</li> <li>Sponsor after school programming or similar STEM resources.</li> </ul>           | <ul style="list-style-type: none"> <li>Sponsor leading technologist at ecosystem events.</li> <li>Promote local technologies and technologists.</li> <li>Provide tax breaks for preferred industries. Sponsor STEM school programs.</li> </ul>   |
| HUMAN CAPITAL                          | Are entrepreneurs highly educated, well trained in business and able to move freely in the labor market?                     | <ul style="list-style-type: none"> <li>Invest in formal and informal continuing education.</li> </ul>   | <ul style="list-style-type: none"> <li>Reimburse or match for continuing education.</li> <li>Incorporate educational childcare and after school care programs for working parents.</li> <li>Sponsor skill building with local associations.</li> </ul> | <ul style="list-style-type: none"> <li>Foster a flexible labor market in which businesses can easily hire employees.</li> <li>Sponsor students who leave home to pursue a better education and tie the debt forgiveness to them returning, just like firms do with pre-MBA hires.</li> <li>Sponsor free access to online learning platforms.</li> <li>Provide tax breaks for education costs incurred by firms.</li> </ul> |
| COMPETITION                            | Are entrepreneurs creating unique products and services and able to enter the market with them?                              | <ul style="list-style-type: none"> <li>Identify opportunities within your market that are underserved or unique.</li> </ul>                                 |  | <ul style="list-style-type: none"> <li>Break up monopolies and police anticompetitive practices.</li> </ul>  |
| PRODUCT INNOVATION                     | Is the country able to develop new products and integrate new technology?  | <ul style="list-style-type: none"> <li>Create products and services that are new to the market.</li> </ul>  | <ul style="list-style-type: none"> <li>Invest in R&amp;D.</li> </ul>   | <ul style="list-style-type: none"> <li>Foster collaboration in research between universities and industry, and the protection of intellectual property.</li> </ul>   |
| PROCESS INNOVATION                     | Do businesses use new technology and are they able access high quality human capital in STEM fields?                         | <ul style="list-style-type: none"> <li>Adopt new technology that improves your business' functioning.</li> </ul>  |  | <ul style="list-style-type: none"> <li>Improve the quality of scientific institutions and the availability of scientists and engineers.</li> </ul>   |
| HIGH GROWTH                            | Do businesses intend to grow and have the strategic capacity to achieve this growth?   | <ul style="list-style-type: none"> <li>Set ambitious goals for hiring and profits.</li> </ul>   |  | <ul style="list-style-type: none"> <li>Reduce the barriers to obtaining equity financing.</li> </ul>   |
| INTERNATIONAL-IZATION                  | Do entrepreneurs want to enter global markets and is the economy complex enough to produce ideas that are valuable globally? | <ul style="list-style-type: none"> <li>Identify opportunities to export your products/services to new markets.</li> </ul>                                   |  | <ul style="list-style-type: none"> <li>Facilitate the interaction of individuals in increasingly complex networks in order to make products.</li> </ul>  |
| RISK CAPITAL                           | Is capital available from both individual and institutional investors?   | <ul style="list-style-type: none"> <li>Support other entrepreneurs with seed funding.</li> </ul>  | <ul style="list-style-type: none"> <li>Support entrepreneurs in corporate philanthropy, impact and social responsibility initiatives.</li> </ul>   | <ul style="list-style-type: none"> <li>Reduce the barriers to providing venture capital and private equity financing.</li> </ul>   |

## Frequently Asked Questions

### **Why do you use both individual data and institutional data?**

It takes both highly motivated individuals *and* a supporting institutional environment for entrepreneurship to flourish. Without measuring both, we don't get an accurate representation of the ecosystem.

### **Why don't the individual and institutional scores add up to the final GEI score?**

These two ecosystem components don't exist independently of each other – rather, they influence each other. For this reason our methodology is closer to a multiplication than an addition of the two components. Further, the fourteen pillars we capture influence each other too, which accounts for the additional difference.

### **How can I get my country into the GEI?**

We depend on several sources of data that are consistent across countries. If your country is missing from the GEI, it's because we lack data in one of our major index data sources. The best way to remedy this is to work directly with these data collection entities to produce the necessary data for your country.

### **Can I supply the missing data myself?**

In order to maintain the comparability of our dataset across countries we have to use a single source of data for each indicator. Because methodology can differ when different parties collect the same data, we can't accept data substitutions from other sources.

### **Do you use estimated data? Why?**

We've always felt that it is important to use our expertise to help where we can, and sometimes this means estimating data so that at least a blurry picture of a country can be seen, rather than none at all.

In order to include a larger number of countries in our GEI analysis we estimate the individual-level variables for missing countries by using similar peers. Based on our experience, when a country eventually produces actual individual level data, the results tend to be very similar to our estimates. Certainly there are inconsistencies, but

we don't believe in making the perfect the enemy of the good; we believe that so long as one is transparent about missing data imputation, the value of the resulting analyses is worth the imperfection. For detailed information on which countries we've estimated, see the 2018 GEI Technical Annex, available at [www.thegedi.org](http://www.thegedi.org).

Further, missing data imputation is common practice within and outside of index building across globally recognized institutions: the World Economic Forum's Global Gender Gap Report, the World Health Organization's Global Burden of Disease, the Yale Environmental Performance Index, and Transparency International's Corruption Perceptions Index all impute some data for some countries, and disclose these imputations like we do.

### **What ecosystem pillar/component should we work on improving first?**

Focusing on improving the weakest pillar first will produce the greatest gains. Think of it like baking a cake, where each pillar is one of the ingredients. If you don't have enough eggs, adding more flour won't help you bake a better cake. You need to add more eggs before you start to see an improvement.

### **I disagree with the results – what I see in my country is different than the picture you paint.**

We produce the Global Entrepreneurship Index as a starting point for discussion around improving entrepreneurial ecosystems. We use the best data available that covers the most countries possible in order to produce a globally comparable picture of where different countries stand. The GEI isn't a solution in itself, it's a road map that points you towards the strengths and weaknesses of your country so that your efforts can be focused on digging deeper into these issues. We're happy to have these discussions, and even happier to facilitate them. Additional information on our ecosystem improvement facilitation is available on our website: [www.thegedi.org](http://www.thegedi.org).

# The Entrepreneurial Ecosystem

## Introduction

When the unemployment rate in the United States was 10 percent during the great recession it was considered a catastrophe. However, the unemployment rate in most MENA countries is close to 30 percent and even higher in some other countries. This is a disaster for many parts of the world. It leads to desperation and violence as millions of youth struggle to survive. The world needs to create a billion jobs in the very near future to create global peace and prosperity. Entrepreneurship creates jobs and generates economic growth - the underpinning of a stable and civil society. But before we get into how this works we need to discuss what kind of entrepreneurship we are talking about. Who is an entrepreneur? We are not talking about the basket weaver solo entrepreneur; we are not talking about rural microcredit. We are talking about Silicon Valley, Bill Gates, Sam Walton, FedEx, and Starbucks.

## What is Entrepreneurship?

An entrepreneur is a person with the vision to see an innovation and the ability to bring it to market. Most small business owners on main-street in the United States or in the markets of most cities around the world are not entrepreneurs according to this definition. If you walk down the streets of Seventh Avenue in New York City you will see street vendors selling the fare of every country in the world, nail shops and small grocery stores. Few of these establishments are entrepreneurial by our definition because there is nothing new about them. Most of these people are traders or shop owners, performing a sort of small business management. Now these people are important, don't get us wrong, they create jobs and income for their families. But we want to make a distinction here between the small business owner who replicates what others are doing and an entrepreneur who innovates.

The Global Entrepreneurship Monitor refers to most of the former category of people as necessity entrepreneurs. They have no other option in the labor market for making money. That is why the TEA (total early-stage entrepreneurial activity) is negatively correlated with economic growth, economic freedom, and global competitiveness. The greater TEA the worse

your economy is - Uganda has the highest TEA rate in the world but few would argue that Uganda is more entrepreneurial than the United States. The TEA therefore does not measure entrepreneurship quality but rather entrepreneurship *quantity*, and in so doing captures primarily self-employment. We are concerned with entrepreneurship *quality*: the opportunity driven entrepreneur who generates commercial success. Our definition of entrepreneurship is about high growth, scalability and serious job creation. This point is not new. It has been made by Daniel Eisenberg, Peter Drucker, William Baumol and Schumpeter more than a century ago. Entrepreneurship is about job creation and growth through innovation. Good policy can only be generated through focusing the discussion on innovative, growth-oriented entrepreneurship, not the self-employment captured by GEM's TEA rate.

Our definition of entrepreneurship is driven not by necessity entrepreneurship but by opportunity. Opportunity entrepreneurship is positively correlated with economic growth. Entrepreneurs envision scalable, high-growth businesses. They also possess the ability to make those visions a reality. They get things done. They go over, under and around obstacles. This is borne out in the relationship observed between regulation and these two categories of entrepreneurs: regulation holds back replicative entrepreneurs but does not have the same impact on opportunity entrepreneurs. Entrepreneurs are the bridge between invention and commercialization. Invention without entrepreneurship stays in the university lab or the R&D facility. Entrepreneurs like Steve Jobs and Bill Gates commercialize other people's inventions. This vision of entrepreneurship actually delivers a product to customers.

While we have drawn a rather narrow definition of the entrepreneur, someone who innovates and gets things done, it is actually very broad. Entrepreneurs are everywhere, in every society, in rich and poor neighborhoods; they are Christians, Muslims and Jews, male and female, gay and straight. They are people of color. Entrepreneurs can be high tech or low tech or even no tech. All over the world entrepreneurs work in all sorts of conditions against great odds - in the slums of Kibera, Bombay and Jakarta. They find ways to innovate and bring products to market. Just because entrepreneurs don't have access to finance, intellectual property protection, or a trained staff does not mean that entrepreneurs do not exist and cannot succeed. For

Example, Beleza Natural, which started with a single salon in 1993 in San Paulo, Brazil, currently operates 29 salons and a cosmetics research lab, produces a full line of hair-care products, and employs 1,400 people. In 2012, the company's revenue was more than \$30 million. Beleza Natural is interesting because it focused its activities on the demand of an overlooked group, in this case low-income women at the bottom of the pyramid. By offering "affordable luxuries" in the form of hair treatment and the salon experience, Beleza Natural was tapping into the so-called "lipstick economy." However, as is the case for other successful female entrepreneurs, Beleza Natural aspired to provide greater benefits to its clients and employees. The company's business objectives extend to broader social and environmental benefits.<sup>1</sup>

A second aspect of our definition of entrepreneurship regards the level of technology. In the West, innovation is used synonymously with technology. The heroes in the West are Zuckerberg, Jobs and other Silicon Valley stalwarts. Our definition is open to non tech innovators like Oprah and Bowker. Starbucks serves a centuries old drink, coffee, but it introduced a coffee shop experience that is now in every corner of the world. When you go into Starbucks and there is a long line it disappears in just a few minutes. That is process innovation and very much an example of a non tech entrepreneur. McDonalds did the same for the hamburger. Enterprise Rent a Car did it for car rentals and today employs thousands of people worldwide. Uber did it for taxicabs. They did not invent taxis. They have been around forever. They invented a new process. What low tech entrepreneurship does is increase efficiency: how quickly you can serve a cup of coffee.

### Entrepreneurial Ecosystem Elements

Ever since the time of Schumpeter the concepts of entrepreneurship and innovation have been intertwined with economic development. The Global Entrepreneurship Index is an important tool to help countries accurately assess and evaluate their ecosystem to create more jobs. The *entrepreneurial ecosystem* is a new way to contextualize the increasingly complex and interdependent social systems being created.<sup>2</sup> While the academic literature kept agency, institutions and systems in separate silos, the real communities that practitioners worked in had no such silos and the different building blocks all built upon each other in a

single, unified structure. Business books such as Brad Feld's *Start-up communities: Building an entrepreneurial ecosystem in your city*, Daniel Isenberg's *Harvard Business Review* article *What an entrepreneurship ecosystem actually is* and Steven Koltai, *Peace through Entrepreneurship: Investing in a Start-up Culture for Security and Development*, started to suggest that reality was nuanced.

In order to better understand entrepreneurial ecosystems let's start with a few definitions.<sup>3</sup> A system is an organized set of interacting and interdependent subsystems that function together as a whole to achieve a purpose. In general, an ecosystem is a purposeful collaborating network of dynamic interacting systems and subsystems that have an ever-changing set of dependencies within a given context.<sup>4</sup> First, an ecosystem, as opposed to a system has both living and non-living components. Otherwise it's a system like national systems of innovation. In addition, there are outcomes of the ecosystem that the literature calls ecosystem services and there is ecosystem management. The point of this line of research is that it is not just the abundance or endowment of particular key factors of production or resources that shape economic performance, it is also the manner in which that economic activity is configured, or organized, within geographic space.

The most carefully worked out approach to entrepreneurial ecosystems is associated with Acs, Szerb and Autio. This line of research recognizes that it is not just the abundance or endowment of particular key factors of production or resources that shape economic performance, it is also the manner in which that economic activity is configured, or organized, within geographic space and the role of entrepreneurship in bringing it to life. While the entrepreneurial ecosystem literature does not challenge the efficacy of these other dimensions of spatial organization and structure, such as clusters, specialization, diversity, market power, or localized competition, it suggests that entrepreneurship is also a key dimension enhancing economic performance.

Entrepreneurial ecosystems are composed of sub-systems (pillars) that are aggregated into systems (sub-indices) that can be optimized for system performance at the ecosystem level. There is a growing recognition in the entrepreneurship literature that entrepreneurship

theory focused only on the entrepreneur may be too narrow. The concept of systems of entrepreneurship is based on three important premises that provide an appropriate platform for analyzing entrepreneurial ecosystems. First, entrepreneurship is fundamentally an action undertaken and driven by agents on the basis of incentives. Second, the individual action is affected by an institutional framework conditions. Third, entrepreneurship ecosystems are complex, multifaceted structures in which many elements interact to produce systems performance, thus, the index method needs to allow the constituent elements to interact. However because the elements are different in each case there is no one size fits all solution. Each one is bespoke.

### The Global Entrepreneurship Ecosystem

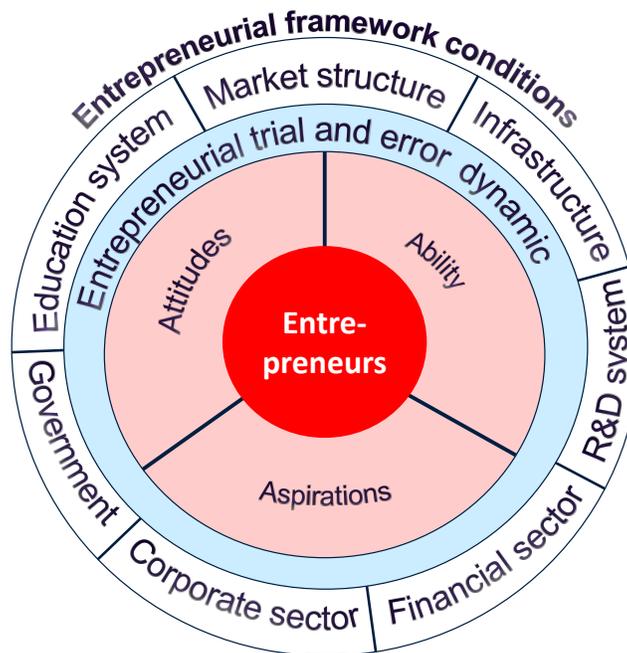
We define entrepreneurial ecosystems at the socio-economic level having properties of self-organization, scalability and sustainability as “...dynamic institutionally embedded interaction between entrepreneurial attitudes, abilities and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures.”<sup>5</sup> Entrepreneurial Ecosystems are complex socioeconomic structures that

are brought to life by individual-level-action. Much of the knowledge relevant for entrepreneurial action is embedded in ecosystem structures and requires individual-level-action to extract it.<sup>6</sup>

The structure of the entrepreneurial ecosystem is illustrated in **Figure 1**. Nascent and new entrepreneurs are at the heart of the system. Nascent entrepreneurs are individuals in the process of launching a new venture. These entrepreneurs represent a sub-set of the adult population in a given country. The attitudes that prevail within the wider population influence who chooses to become an entrepreneur. The nascent and new entrepreneurs are characterized by varying degrees of ability and entrepreneurial aspirations.

It is the entrepreneurs who drive the trial and error dynamic. This means entrepreneurs start businesses to pursue opportunities that they themselves perceive. However, entrepreneurs can't tell in advance if opportunities are real or not. The only way to validate an opportunity is to pursue it. The outcome is a trial and error process.

**Figure 1:** The Entrepreneurial Ecosystem Configuration



The entrepreneurial framework conditions matter because they regulate, first who chooses to become an entrepreneur and, second, to what extent the resulting

new ventures are able to fulfill their growth potential. The first aspect—entrepreneurial choice—is regulated mostly by soft framework conditions, such as social

norms and cultural preferences. The degree to which new ventures are able to fulfill their potential is regulated by a range of entrepreneurial framework conditions, such as, government, research and development, education, infrastructure, financial sector and the corporate sector.

A healthy entrepreneurial ecosystem will drive resource allocation towards productive uses. It will also drive total factor productivity through process innovation (Starbucks). The greater total factor productivity, the greater the economy's capacity to create jobs and wealth.

### Agents

The first component of entrepreneurial ecosystems is agency. The entrepreneur drives the system. The entrepreneur is someone who makes judgment-based decisions about the coordination of scarce resources. The term "someone" is defined as the individual and the term "judgment-based decisions" are decisions for which no obviously correct procedure exists. Judgement is not the routine application of a standard rule. As we discussed above, we distinguish two types of entrepreneurial activity: at one pole there is routine entrepreneurship, which is really a type of management and for the rest of the spectrum we have high growth entrepreneurship. By routine entrepreneurship we mean the activities involved in coordinating and executing a well-established ongoing concern in which the parts of the production function in use are well known and that operates in well-established and clearly defined way. This includes the self-employment and small business owner. It is the next taco stand, garage or hair dresser. It is certainly the case that replicative entrepreneurs can be of great social value. However, these types of firms are not what we mean by ecosystem services.<sup>7</sup>

By high-impact entrepreneurship we mean the activities necessary to create an innovative high-growth venture where not all the markets are well established or clearly defined and in which the relative parts of the production function are not completely known. Innovative entrepreneurs ensure that utilization of invention contributes to increased productivity and facilitates and contributes to economic growth. The gap-filling and input-completing capacities are the unique characteristics of the entrepreneur.

### Institutions

The second fundamental component of Entrepreneurial Ecosystems is institutions—the rules of the game. Of particular importance to entrepreneurship are the economic institutions in society such as the structure of property rights and the presence of effective market frameworks (North, 1990). Economic institutions are important because they influence the structure of economic incentives. Without property rights, individuals will not have the incentive to invest in physical or human capital or adopt more efficient technologies. Economic institutions are also important because they help to allocate resources to their most efficient uses; they determine who gets profits, revenues and residual rights of control. When markets were highly restricted and institutions sent the wrong signals, there is little substitution between labor and capital and technological change is minimal.

Institutions create incentives and that the entrepreneurial talent is allocated to activities with the highest private return, which need not have the highest social returns. Universal welfare-enhancing outcomes do not automatically follow from entrepreneurial activity; indeed such activities can generate questionable or undesirable effects. Entrepreneurial talent can be allocated among a range of choices with varying effects from wealth-creation to destruction of economic welfare. If the same actor can become engaged in such alternative activities, then the mechanism through which talent is allocated has important implications for economic outcomes and the quality of this mechanism is the key criterion in evaluating a given set of institutions with respect to growth.

We follow many others, for example Hayek, in proposing that the answer rests upon the institutional system and the incentives that it creates for agents; yet we differ in simultaneously stressing the role of entrepreneurs. In the United States, institutions of private property and contract enforcement gives entrepreneurs the incentive to invest in physical and human capital, to combine inputs in ways to create new production functions, and to complete markets. It is entrepreneurs operating in supportive institutional environments that provide the transmission mechanism from knowledge to economic growth by raising productivity.

## The System

The third component of entrepreneurial ecosystems is the systems. When we look at systems, for example systems of innovation or clusters we have a theory of how the system functions as it produces outputs. Porter's Diamond comes to mind. When we move to an ecosystem we also need to have a theory of how the ecosystem functions. How does an entrepreneurial ecosystem function? It is not enough to have a laundry list of the institutions that might be important: markets, human capital, supports culture, finance and policy. While all of these may be important how they work as an ecosystem is missing in much of this literature.

Building on the Systems of Innovation literature and the Global Entrepreneurship Monitor methodology we develop an entrepreneurial ecosystem that integrates both institutions and agency and introduce an ecosystem of coherent patterns in a simple, intuitive, and powerful way. The key ideas are the relationships, the complementary, across the systems and subsystems and the importance of bottleneck factors. The concept of complementary in its simplest way is the interaction of two variables. Two choice variables are complements, when doing more of one of them increases the returns to doing more of the other.

## Ecosystem Services

While many think of the output of ecosystems as more startups, like GEM, this is wrong and misleading. The dual service created by entrepreneurial ecosystems is (1) resource allocation towards productive uses and (2) the innovative, high-growth ventures that drive this process. The entrepreneurship literature frequently talks about opportunity recognition and the need to assemble resources. However, from a performance perspective the key issue is about resource allocation from existing activities to new ones. The allocation of resources to productive uses will result in high growth, high value new firms. The nutrient in the ecosystem is resources—venture capital! Without nutrients the ecosystem will die. For example, the launch of Uber and AirBnB early this decade and the earlier success of Google, Amazon, Facebook, Twitter, Skype, WhatsApp, Craig's List, created a new breed of company The billion-dollar tech startup was once the stuff of myth, but now they seem to be everywhere, backed by a bull market, readily available venture capital and a new generation of disruptive technology.<sup>8</sup>

## Ecosystem Management

In the ecological literatures the practice of managing and enhancing ecosystem benefits is referred to as ecosystem management. Because ecosystem services is created through a myriad of localized interactions between stakeholders, it is not easy to trace gaps in system performance back to specific, well-defined market and structural failures that could be addressed in a top-down mode.<sup>9</sup>

Strengthening the entrepreneurial ecosystem can be done by public private partnerships, banks, universities, foundations, governments and aid agencies. The Global Entrepreneurial Ecosystem Roadmap (GEER) focuses on the first aspect of this project, that is (1) identifying the holes in the global entrepreneurship ecosystem (2) laying out a roadmap for how to fill in the holes and (3) measuring our progress. The goal of a well-functioning ecosystem is to improve the chances of success for entrepreneurs all over the world. And ultimately reduce unemployment and bring peace to the world.

# The Entrepreneurial Ecosystem and Global Prosperity

## Introduction

While a focus on the entrepreneurial ecosystem may seem a novel approach to development, it is consistent with and even complementary to older, more traditional development strategies. As developing economies move from centralized economies to market economies, enterprise and entrepreneurship become important. “The emerging world, long a source of cheap labor, now rivals developed countries for business innovation. Developing countries are becoming hotbeds of business innovation in much the same way as Japan did from the 1950s onwards.”<sup>10</sup>

Entrepreneurship is considered an important mechanism that promotes economic development through employment, innovation, and welfare, but it does not appear like manna from heaven as a country moves through the stages of development. Rather, it plays a role in all development stages and is a process that continues over many years. Economists have come to recognize the “input-competing” and “gap-filling” capacities of entrepreneurial activity in development.<sup>11</sup> In other words, someone has to create the technology for new products and create the markets where people will buy them.

Two points are important when thinking about entrepreneurship and development. **First, contrary to popular belief, the most entrepreneurial countries in the world are not those that have the most entrepreneurs.** This notion is in fact misleading. In fact, the highest self-employment rates are in low-income countries such as Zambia and Nigeria. This is because low-income economies lack the human capital and infrastructure needed to create high-quality jobs. The result is that many people sell soft drinks and fruit on street corners, but there are few innovative, high-growth startups. Nor do these street vendors represent business ownership as defined in many developed countries.

In entrepreneurship, quality matters more than quantity. To be entrepreneurial, a country needs to have the best entrepreneurs, not necessarily the most. What the “best and the brightest” do is important, and to support their efforts, a country needs a well-functioning entrepreneurial ecosystem ([watch the video](#)).<sup>12</sup> The path to development is to create efficient organizations able

to harness technology to increase output and improve the lives of millions.

**Second, entrepreneurship comes in productive, unproductive, and destructive forms.** While productive entrepreneurship makes both entrepreneurs and society better off, unproductive and destructive entrepreneurship make entrepreneurs better off but leave society in worse condition. The GEI strives to measure only productive entrepreneurship that both creates wealth and is scalable.

Entrepreneurial ecosystems support innovative, productive, and rapidly growing new ventures. They consist of multiple interactive elements, all of which need to be in sync in order for innovative and high-growth firms to prosper. Such firms also need skilled employees. They need access to technology. They need a well-functioning infrastructure. They need specialized advice and support. They need access to finance. They need business premises. They need a supportive regulatory framework.

## Country-level Productivity and the Entrepreneurial Ecosystem

Economic growth does not equal to productivity. Economic growth basically refers to the capacity of countries to produce more goods and services, irrespective of how higher production is achieved. The positive variations in GDP or employment over time are the usual suspects among those interested in studying economic growth figures, mostly because they represent the desired objective of most policy makers, as a measure of economic prosperity.

Productivity is a more complex concept. At the country level, total factor productivity (TFP) deals with two highly interconnected economic aspects. First, TFP has to do with the capacity of countries to allocate and exploit available resources efficiently (P = productivity effect). The notion that markets are good at directing resources is a good catch-all explanation concept; but for many businesses it is hard to find all that is required to perform in the market and to keep the pace of industrial and digital revolutions that not only equip businesses with new—often more technologically advanced—resources, but also change the ways to exploit them.

The second component of TFP deal with the capacity of organizations to channel innovations to the economy (I = innovation effect) that, consequently, translate into higher levels of output per input unit (in the case of countries, GDP per worker). Maybe we all are too used to link innovation to technological inventions that are successfully commercialized. However, our definition of innovation is not restricted to engineering (such as the driverless car) or to medical advances (such as nerve stimulation or non-invasive procedures), and is open to other, equally valuable, types of non-technological innovations related to product and processes.

Let's start with the productivity effect (P). The efficient allocation of resources available in the economy is an important part of the productivity function. The productivity effect is linked to how well new and existing businesses use different resources, including labor, capital, equipment, knowledge, and technology-based inputs. The capacity of Amazon to amalgamate technologies brought from other industries (for example, ICTs, drones) to increase the productivity of its operations (delivery: Amazon Fresh or Amazon Prime Air) is a good example.<sup>13</sup>

From the perspective of the entrepreneurship ecosystem, better institutions backing entrepreneurial activities and an efficient interaction between individual actions and the institutional setting governing entrepreneurial decisions are key ingredients necessary to facilitate the creation of businesses with a greater capacity to generate jobs, and help incumbent businesses to take advantage of better market conditions. For example, in many European countries entrepreneurs have strong incentives to invest in physical and human capital, and to promote the exploitation of resources in an effort to improve the functioning of their businesses. In this case, the supportive institutional environment creates the conditions to promote operational improvements. In other words, entrepreneurial ventures have incentives to 'do things better', that is, to improve their productivity. To sum up, a healthy entrepreneurial ecosystem contributes to national productivity by enhancing market efficiency levels and by promoting the efficient exploitation of resources through new and incumbent businesses.<sup>14</sup>

The second effect—innovation (I)—is strictly linked to the Schumpeterian approach to entrepreneurship (creative destruction).<sup>15</sup> For Schumpeter entrepreneurs play a decisive role in the economy by creating and implementing radical innovations that are conducive to economic progress. In this tradition entrepreneurship is critical to spark economic development by promoting innovations, in our terminology 'create new things or find new ways to do things'. Progress translates in the expansion of the countries' production possibilities that materializes in a shift of the global frontier. But, at this point is worth questioning how can radical innovations foster such progress. Moreover, how does the entrepreneurial ecosystem contribute to this progress? It seems logical to argue that inventions are worthless if they do not turn into commercialized innovations, and that the economic impact of such innovations will turn sterile if the market and individuals cannot fully incorporate these innovations in their day-to-day routines.

For Schumpeter, entrepreneurs nurture the economy with innovations and the entrepreneurial ecosystem is critical for the development of this economic function: 'create new things or find new ways to do things'. If countries enjoy a healthy entrepreneurial ecosystem the efforts of innovative entrepreneurs will materialize in new value-adding combinations of resources that will expand the countries' productive capacity and the global production frontier.

We found a significant, relatively strong positive correlation between entrepreneurship and total factor productivity (0.35). We also noted that entrepreneurship correlates weakly positively with the productivity effect (0.09) (Table 1.1).

**Table 1: The correlations between GEI, total factor productivity and its components**

| Variables                         | Correlation |
|-----------------------------------|-------------|
| GEI vs. total factor productivity | 0.3513      |
| GEI vs. productivity effect       | 0.0930      |
| GEI vs. innovation effect         | 0.3882      |

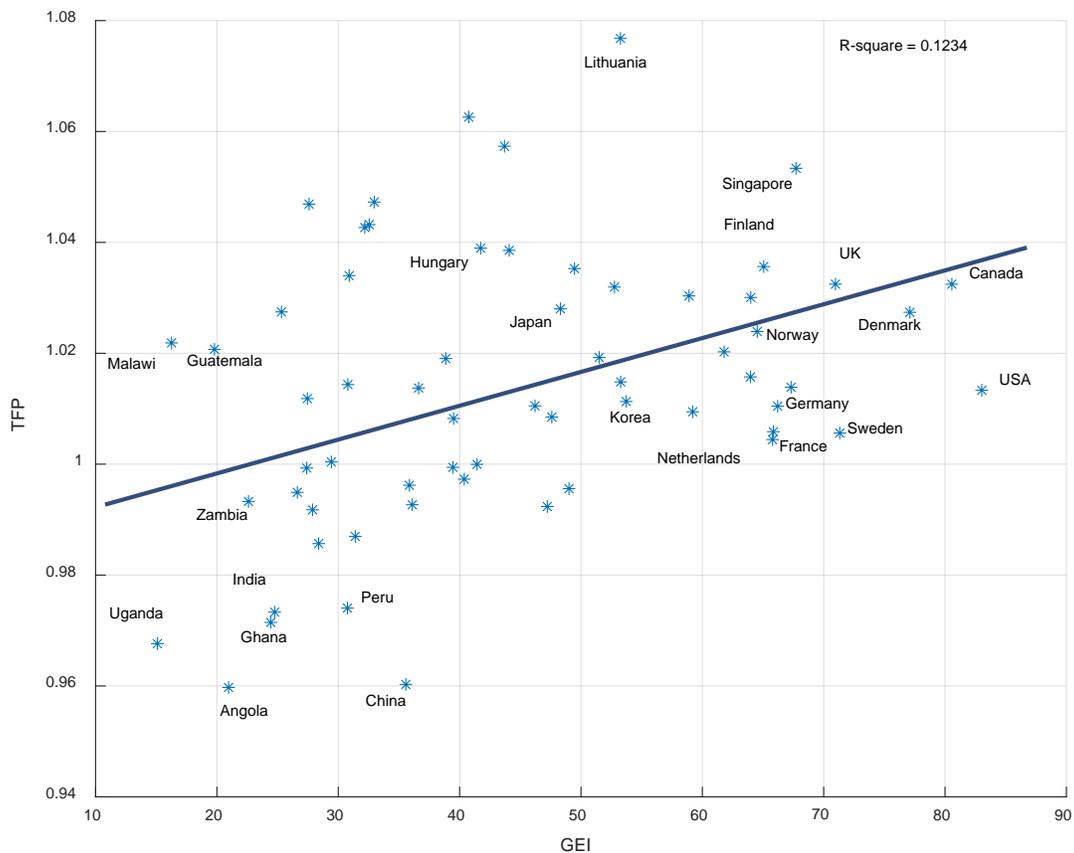
The strongest positive correlation was found between entrepreneurship and the innovation effect (0.39). This result is not surprising if we think a little harder. Just like we cannot imagine progress in the 19th century without the creation and development of steam engines, it is hard to imagine entrepreneurship in the 21st century without the power of technology-driven inventions. With

the new millennium industries and markets from all around the globe are witnessing drastic transformations that are the result of a digital revolution in which entrepreneurs are taking an active role by creating new businesses that are responsible of this revolution. The result is a good sign that reinforces our argument that the creation of 'new things or new ways to do things' definitely constitutes the vital force driving economic development.

and GEI is 0.35 and the sign is positive (see Table 1). From the Figure 2 we verify that the quality of the entrepreneurial ecosystem (GEI scores) and TFP move in the same direction. Countries with a low-quality entrepreneurial ecosystem tend to show negative TFP values below unity. On contrary, all developed economies with supportive entrepreneurial ecosystems improve their total factor productivity, either by productivity or innovation effects.

Figure 2 plots the GEI score and the computed total factor productivity values. The correlation between TFP

Figure 2: GEI and total factor productivity



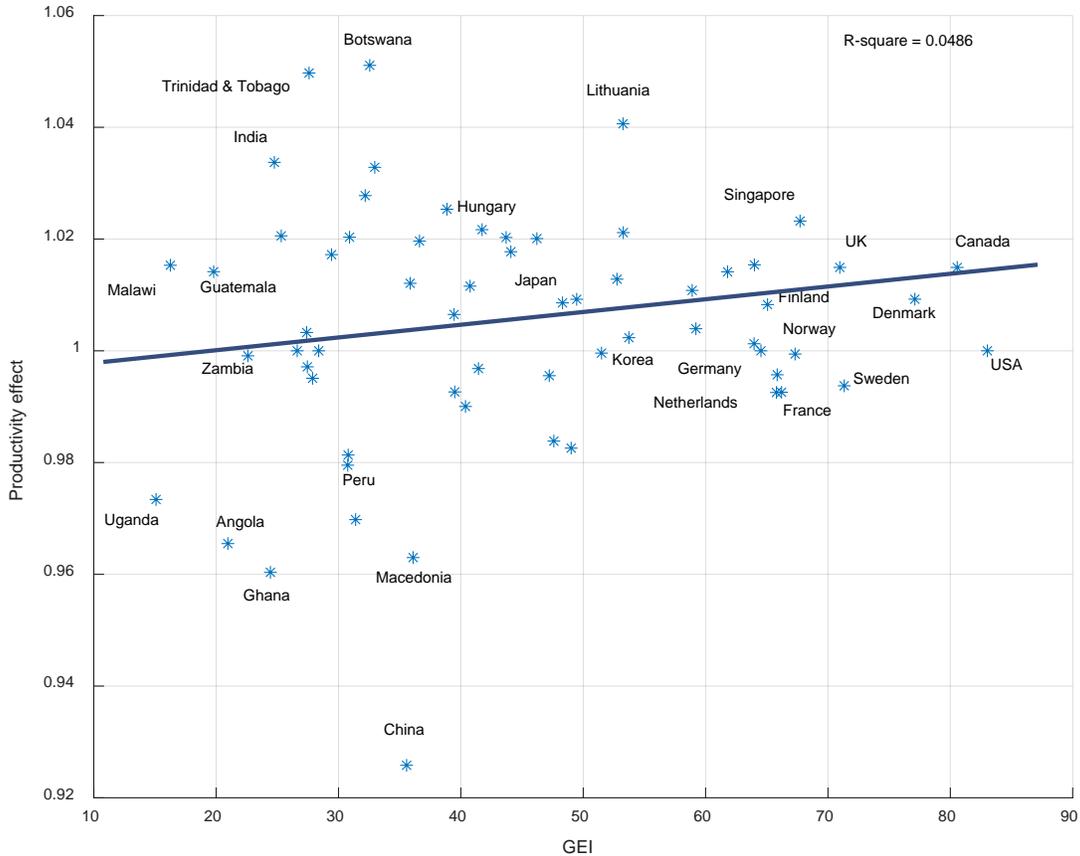
Figures 1.3 and 1.4 plot the relationship between the GEI index and the productivity and innovation effects, respectively. There is a positive association between entrepreneurship and the productivity effect (correlation = 0.09); however, this relationship is less pronounced than that found for the TFP. This result may well be partly explained by the differentiating impact of entrepreneurship over the productivity effect across economies. We observe that the correlation between

entrepreneurship and the productivity effect scores the highest among factor driven countries (0.47 in Table 4.3). Also, from Figure 1.3 we note that in many underdeveloped and developing territories with low- and mid-level entrepreneurial ecosystem the productivity effect is positive, while the result of the productivity effect for some developed economies is negative.

Thus, our results suggest that, in developing economies, the entrepreneurial ecosystem plays a much more decisive role on TFP via productivity improvements, that

is, helping new and established businesses in developing economies to better exploit their limited resources, that is, 'to 'do things better'.

Figure 3: GEI and the productivity effect

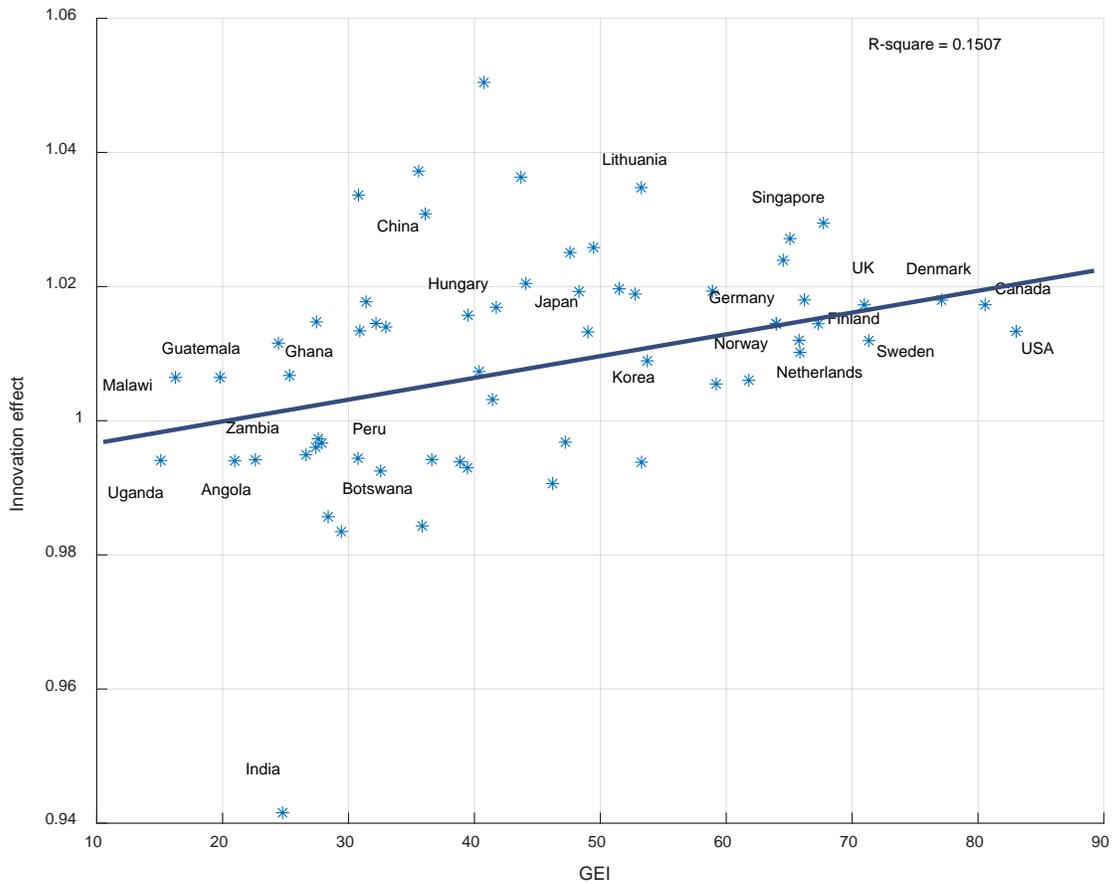


The picture is quite different when we look at the results for the innovation effect. The data in Table 1.3 show how the correlation between entrepreneurship and the innovation effect progressively increases as we move from factor-driven (correlation = -0.41) to innovation-driven economies (correlation = 0.33). Similarly, the impact of the innovation effect is much more potent in innovation-driven economies (1.55%) than in efficiency-driven (1.17%) and in factor-driven economies (-0.59%).

This trend is corroborated by the results in Figure 4.4 in which we observe a steeper relationship between the

GEI scores and the innovation effect. In contrast to the stronger effect of the entrepreneurial ecosystem over productivity in developing countries, we found that the positive influence of a healthy entrepreneurial ecosystem over the innovative capacity of new and established businesses is much more powerful in developed economies. With the exception of Turkey, the innovation effect linked to the efficient commercialization of innovations and new technologies is positive in all economies with high quality entrepreneurial ecosystems (GEI > 50).

Figure 4: GEI and the innovation effect



Based on the relationships reported above, the improvement of the entrepreneurial ecosystem (GEI scores) may well yield to improvements in total factor productivity via the enhanced capacity of businesses to use their available resources (productivity effect) and to exploit the market potential of new technologies and

innovations. As a result, if every of the 64 analyzed countries raised its GEI score by 10%, the global total factor productivity will increase 0.22 TFP points, which represents an estimated improvement of 15.80%.<sup>16</sup>

## The Global Entrepreneurship Index: In depth

### The Global State of Entrepreneurship

The GEI measures both the quality of entrepreneurship in a country and the extent and depth of the supporting entrepreneurial ecosystem.

The top ten countries for 2018 show a pattern similar to last year's—high-income, mostly European nations. The top countries are the United States, Switzerland, Canada,

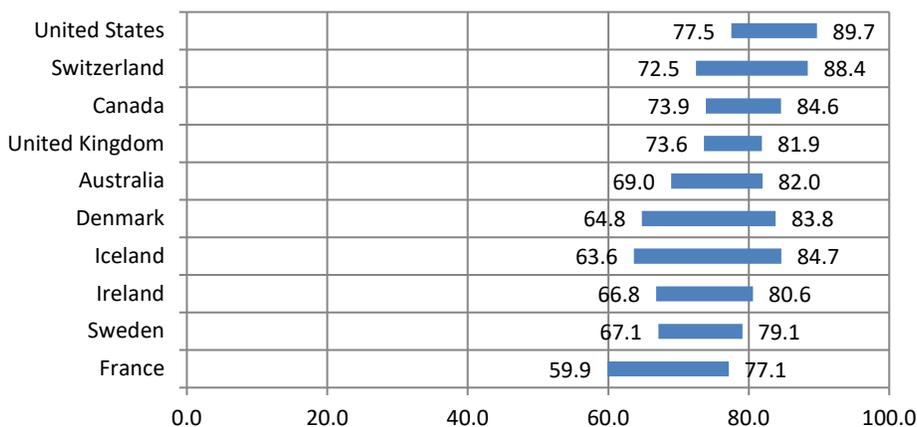
the United Kingdom, Australia, Denmark, Iceland, Ireland, Sweden and France. The major surprise this year is the movement of the UK from 8th place to 4th place and the movement of Sweden from 4th place to 9th place. Because the scores in the highest range are so close, small changes in score from one year to the next can produce a relatively large shift in ranks among the top ten. For this reason, we present confidence intervals for the top ten.

### Top Ten Countries

**Table 2: Top Ten Countries in the GEI**

| Country        | GEI 2018 lower limit | GEI 2018 upper limit | GEI 2018 | Rank 2018 | GEI Rank 2017 |
|----------------|----------------------|----------------------|----------|-----------|---------------|
| United States  | 77.5                 | 89.7                 | 83.6     | 1         | 1             |
| Switzerland    | 72.5                 | 88.4                 | 80.4     | 2         | 2             |
| Canada         | 73.9                 | 84.6                 | 79.2     | 3         | 3             |
| United Kingdom | 73.6                 | 81.9                 | 77.8     | 4         | 8             |
| Australia      | 69.0                 | 82.0                 | 75.5     | 5         | 7             |
| Denmark        | 64.8                 | 83.8                 | 74.3     | 6         | 5             |
| Iceland        | 63.6                 | 84.7                 | 74.2     | 7         | 6             |
| Ireland        | 66.8                 | 80.6                 | 73.7     | 8         | 9             |
| Sweden         | 67.1                 | 79.1                 | 73.1     | 9         | 4             |
| France         | 59.9                 | 77.1                 | 68.5     | 10        | 13            |

**Figure 5: Confidence Intervals for Top Ten Scores**



The results show that the No. 1 rank could have gone to any of the top ten nations with the exception of France. We see that Switzerland has a confidence

interval similar to the United States.

## Regional Performance

For many countries, a regional benchmark is more relevant for identifying best practices for fostering entrepreneurship. This year we have several important

changes in Europe, Sub-Saharan Africa and the MENA countries. Below we present the top performer in each region along with individual and institutional score summaries.

**Table 3: Top Scores by Region**

| World rank | Country       | Region                                | GDP per capita PPP | Individual variables | Institutional variables | GEI  |
|------------|---------------|---------------------------------------|--------------------|----------------------|-------------------------|------|
| 1          | United States | North America                         | \$52.676           | 93.0                 | 78.5                    | 83.6 |
| 2          | Switzerland   | Europe                                | \$54.933           | 93.8                 | 71.5                    | 80.4 |
| 5          | Australia     | Asia-Pacific                          | \$42.149           | 82.2                 | 74.3                    | 75.5 |
| 16         | Israel        | Middle East / North Africa            | \$31.092           | 80.9                 | 72.7                    | 65.4 |
| 19         | Chile         | South and Central America / Caribbean | \$21.302           | 68.9                 | 75.9                    | 58.5 |
| 52         | Botswana      | Sub-Saharan Africa                    | \$15.286           | 47.7                 | 66.0                    | 34.9 |

The United States leads the world in entrepreneurship, and is first in the North American region, just ahead of peer Canada. Australia ranks first in the Asia-Pacific region, ahead of economic powerhouses China, Singapore, Hong Kong, and Japan. Switzerland, which ranked fourth in the European region and eighth overall last year, now comes in first in Europe. Chile ranks first in

South and Central America and the Caribbean (19<sup>th</sup> overall), 22 places ahead of the next highest scorer in the region—Puerto Rico, at 41<sup>st</sup>. Israel is 16<sup>th</sup> overall and tops the MENA region, just ahead of Qatar at 22<sup>nd</sup>. In Sub-Saharan Africa, Botswana is the leader at 52<sup>nd</sup>, ranking ahead of nine European nations.

## Biggest Gains

**Table 4: Biggest Gains in GEI Score**

| Country        | Score 2018 | Score 2017 | Difference in Score | Difference in Rank |
|----------------|------------|------------|---------------------|--------------------|
| United Kingdom | 77.8       | 71.2       | 6.5                 | 4                  |
| Israel         | 65.4       | 59.4       | 6.0                 | 1                  |
| Bulgaria       | 27.8       | 22.7       | 5.1                 | 13                 |
| China          | 41.1       | 36.1       | 5.0                 | 5                  |
| Iran           | 26.8       | 22.1       | 4.7                 | 13                 |
| Italy          | 41.4       | 37.1       | 4.3                 | 4                  |
| Poland         | 50.4       | 46.5       | 3.9                 | 1                  |
| Canada         | 79.2       | 75.5       | 3.7                 | 0                  |
| Ireland        | 73.7       | 70.2       | 3.5                 | 1                  |
| Korea          | 54.2       | 50.7       | 3.5                 | 3                  |

Note: The table above includes only those countries that have participated in the GEM survey and do not have estimated individual data

## Biggest Declines

**Table 5: Biggest Declines in GEI Score (among countries with decreases in GEI score)**

| Country    | Score 2018 | Score 2017 | Difference in Score | Difference in Rank |
|------------|------------|------------|---------------------|--------------------|
| Latvia     | 40.5       | 43.0       | -2.5                | -6                 |
| Sweden     | 73.1       | 75.2       | -2.1                | -5                 |
| Taiwan     | 59.5       | 61.0       | -1.5                | -2                 |
| Malaysia   | 32.7       | 33.4       | -0.7                | -4                 |
| Ecuador    | 20.5       | 20.9       | -0.4                | -5                 |
| Chile      | 58.5       | 58.9       | -0.4                | -1                 |
| Kazakhstan | 29.7       | 30.0       | -0.3                | -2                 |
| Indonesia  | 21.0       | 21.1       | -0.1                | -4                 |

Note: The above table includes only those countries that have participated in the GEM survey and do not have estimated individual data.

## The 14 Pillars of an Entrepreneurial Ecosystem

The pillars of entrepreneurship in the ecosystem are many and complex. While a widely accepted definition of entrepreneurship is lacking, there is general agreement that the concept has numerous dimensions.<sup>17</sup> We take this into account in creating the entrepreneurship index. Some businesses have a larger impact on markets, create more new jobs, and grow faster and become larger than others. We also take into account the fact that entrepreneurship plays a different role at different stages of development.<sup>18</sup> Considering all of these possibilities and limitations, we define entrepreneurship as “the dynamic, institutionally embedded interaction between entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations by individuals, which drives the allocation of resources through the creation and operation of new ventures.”

**Figure 6: The Structure of the Global Entrepreneurship Index**

| GLOBAL ENTREPRENEURSHIP INDEX | Sub-indexes           | Pillars                | Variables (individual / institutional)   |
|-------------------------------|-----------------------|------------------------|--|
|                               | ATTITUDES SUB-INDEX   | OPPORTUNITY PERCEPTION |  |
|                               |                       |                        | FREEDOM (ECONOMIC FREEDOM *PROPERTY RIGHTS)  |
|                               |                       |                        | SKILL PERCEPTION   |
| STARTUP SKILLS                |                       |                        | EDUCATION (TERTIARY EDUCATION*QUALITY OF EDUCATION)  |
|                               |                       |                        | RISK PERCEPTION  |
| RISK ACCEPTANCE               |                       |                        | COUNTRY RISK   |
| NETWORKING                    |                       |                        | KNOW ENTREPRENEURS   |
|                               |                       |                        | AGGLOMERATION (URBANIZATION*INFRASTRUCTURE )   |
| CULTURAL SUPPORT              |                       |                        | CAREER STATUS  |
|                               |                       |                        | CORRUPTION   |
| ABILITIES SUB-INDEX           | OPPORTUNITY STARTUP   |                        | OPPORTUNITY MOTIVATION   |
|                               |                       |                        | GOVERNANCE (TAXATION*GOOD GOVERNANCE)  |
|                               | TECHNOLOGY ABSORPTION |                        | TECHNOLOGY LEVEL   |
|                               |                       |                        | TECHNOLOGY ABSORPTION  |
|                               | HUMAN CAPITAL         |                        | EDUCATIONAL LEVEL  |
|                               |                       |                        | LABOR MARKET (STAFF TRAINING*LABOUR FREEDOM)   |
|                               | COMPETITION           |                        | COMPETITORS  |
|                               |                       |                        | COMPETITIVENESS (MARKET DOMINANCE*REGULATION)  |
|                               |                       |                        |  |
|                               | ASPIRATION SUB-INDEX  | PRODUCT INNOVATION     |  |
|                               |                       |                        | TECH TRANSFER  |
| PROCESS INNOVATION            |                       |                        | NEW TECHNOLOGY   |
|                               |                       |                        | SCIENCE (GERD*(AVERAGEQUALITY OF SCIENTIFICAL INSTITUTIONS +AVAILABILITY OF SCIENTISTS AND ENGINEERS)) |
| HIGH GROWTH                   |                       |                        | GAZELLE  |
|                               |                       |                        | FINANCE AND STRATEGY (VENTURE CAPITAL*BUSINESS SOPHISTICATION)   |
| INTERNATIONALIZATION          |                       |                        | EXPORT   |
|                               |                       |                        | ECONOMIC COMPLEXITY  |
| RISK CAPITAL                  |                       |                        | INFORMAL INVESTMENT  |
|                               |                       |                        | DEPTH OF CAPITAL MARKET  |

The GEI is composed of three building blocks or sub-indices—what we call the 3As: entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial

aspirations. Entrepreneurial attitudes are about how a country thinks about entrepreneurship. In fact, what does your mother think about it? The second sub index

is about abilities. Can you do it? Do you have the skills? The third sub index is about aspirations. Do you want to build a billion-dollar company? These three sub-indices stand on 14 pillars, each of which contains an individual and an institutional variable that corresponds to the micro- and the macro-level aspects of entrepreneurship. Unlike other indexes that incorporate only institutional or individual variables, the pillars of the GEI include both. These pillars are an attempt to capture the open-ended nature of entrepreneurship; analyzing them can provide an in-depth view of the strengths and weaknesses of those listed in the Index. We now describe the 14 pillars of entrepreneurship.

### *Entrepreneurial Attitudes Pillars*

**Pillar 1: Opportunity Perception.** This pillar captures the potential “opportunity perception” of a population by considering the state of property rights and the regulatory burden that could limit the real exploitation of the recognized entrepreneurial opportunity. Within this pillar is the individual variable, Opportunity Recognition, which measures the percentage of the population that can identify good opportunities to start a business in the area where they live. However, the value of these opportunities also depends on the size of the market. The institutional variable Freedom and Property consists of two smaller variables: economic freedom (Economic Freedom) and property rights (Property Rights). Business Freedom – one sub-index of the Index of Economic Freedom variable – is appropriate for capturing the overall burden of regulation, as well as the government’s regulatory efficiency in influencing startups and operating businesses. “The property rights element is an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state,” or in other words, enforced property rights guarantee that individuals have the right to harvest the fruits of successful opportunity exploitation and no one is confiscating or stealing their property or business.<sup>19</sup> Both institutional components are vital for individuals to become entrepreneurs and not employees of another business or the state.<sup>20</sup>

**Pillar 2: Startup Skills.** Launching a successful venture requires the potential entrepreneur to have the necessary startup skills. Skill Perception measures the percentage of the population who believe they have adequate startup skills. Most people in developing countries think they have the skills needed to start a

business, but their skills were usually acquired through workplace trial and error in relatively simple business activities. In developed countries, business formation, operation, management, etc., require skills that are acquired through formal education and training. Hence education, especially postsecondary education, plays a vital role in teaching and developing entrepreneurial skills. Today there are 150 million students enrolled in some kind of education beyond high school, a 53 percent increase in less than a decade. People all over the world see education as a pathway out of poverty.<sup>21</sup>

**Pillar 3: Risk Acceptance.** Of the personal entrepreneurial traits, fear of failure is one of the most important obstacles to a startup. Aversion to high-risk enterprises can retard nascent entrepreneurship. Risk Perception is defined as the percentage of the population who do not believe that fear of failure would prevent them from starting a business. Country Risk reflects to transfer and convertibility risk of a country and believed to closely correlate to business.<sup>22</sup>

**Pillar 4: Networking.** Networking combines an entrepreneur’s personal knowledge with their ability to connect to others in a country and the whole world. This combination serves as a proxy for networking, which is also an important ingredient of successful venture creation and entrepreneurship. Entrepreneurs who have better networks are more successful, can identify more viable opportunities, and can access more and better resources. We define the basic networking potential of a possible entrepreneur by the percentage of the population who personally know an entrepreneur who started a business within two years (Know Entrepreneurs). The connectivity variable has two components: One that measures the urbanization (Urbanization) of the country and the other measuring the quality of the transport infrastructure (Infrastructure).<sup>23</sup>

**Pillar 5: Cultural Support.** This pillar is a combined measure of how a country’s inhabitants view entrepreneurs in terms of status and career choice, and how the level of corruption in that country affects this view. Without strong cultural support, the best and brightest do not want to be responsible entrepreneurs, and they decide to enter a traditional profession. Career Status is the average percentage of the population age 18-64 who say that entrepreneurship is a good career choice and enjoys high status. The associated

institutional variable measures the level of corruption. High levels of corruption can undermine the high status and steady career paths of legitimate entrepreneurs.<sup>24</sup>

### ***Entrepreneurial Abilities Pillars***

**Pillar 6: *Opportunity Startup*.** This is a measure of startups by people who are motivated by opportunity but face red tape and tax payment. An entrepreneur's motivation for starting a business is an important signal of quality. Opportunity entrepreneurs are believed to be better prepared, to have superior skills, and to earn more than what we call necessity entrepreneurs. Opportunity Motivation is defined as the percentage of the Total Entrepreneurial Activity (TEA) businesses started to exploit a good opportunity, to increase income, or to fulfill personal aims, in contrast to those started by people who have no other options for work. The overall effectiveness of the government services is measured by the Good Governance variable and the cost of the governance is by the level of overall taxation (Taxation). The variable is a combination of these two components, government service quality and costs.<sup>25</sup>

**Pillar 7: *Technology Absorption*.** In the modern knowledge economy, information and communication technologies (ICT) play a crucial role in economic development. Not all sectors provide the same chances for businesses to survive and or their potential for growth. The Technology Level variable is a measure of the businesses that are in technology sectors. The institutional variable, Tech Absorption, is a measure of a country's capacity for firm-level technology absorption, as reported by the World Economic Forum. The diffusion of new technology, and the capability to absorb it, is vital for innovative firms with high growth potential.<sup>26</sup>

**Pillar 8: *Human Capital*.** The prevalence of high-quality human capital is vitally important for ventures that are highly innovative and require an educated, experienced, and healthy workforce to continue to grow. An important feature of a venture with high growth potential is the entrepreneur's level of education. The Educational Level variable captures the quality of entrepreneurs; it is widely held that entrepreneurs with higher education degrees are more capable and willing to start and manage high-growth businesses. The labor market possibilities and the capability to easily hire quality employees also have an impact on business development, innovation, and growth potential. The

institutional variable Labor Market has two components. Labor Freedom measures the freedom of the labor from the regulatory perspective and Staff Training is a country's level of investment in business training and employee development. It can be expected that heavy investment in employees pays off and that training increases employee quality.<sup>27</sup>

**Pillar 9: *Competition*.** Competition is a measure of a business's product or market uniqueness, combined with the market power of existing businesses and business groups and the effectiveness of anti-monopoly regulation. The variable Competitors is defined as the percentage of TEA businesses that have only a few competitors offering the same product or service. However, market entry can be prevented or made more difficult if powerful business groups are dominating the market. The extent of market dominance by a few business groups is measured by the variable Market Dominance, a variable reported by the World Economic Forum. The effectiveness of the regulatory bodies (Regulation) could also influence the level of competition in a country. The Competition institutional variable is the combination of Regulation and Market Dominance.<sup>28</sup>

### ***Entrepreneurial Aspirations Pillars***

**Pillar 10: *Product Innovation*.** New products play a crucial role in the economy of all countries. While countries were once the source of most new products, today developing countries are producing products that are dramatically cheaper than their Western equivalents. New Product is a measure of a country's potential to generate new products and to adopt or imitate existing products. In order to quantify the potential for new product innovation, an institutional variable related to technology and innovation transfer seems to be relevant. Technology Transfer is a complex measure of whether a business environment allows the application of innovations for developing new products.<sup>29</sup>

**Pillar 11: *Process Innovation*.** Applying and/or creating new technology is another important feature of businesses with high-growth potential. New Tech is defined as the percentage of businesses whose principal underlying technology is less than five years old. However, most entrepreneurial businesses do not just apply new technology, they create it. The problem is similar to the New Product variable: whereas many businesses in developing countries may apply the latest

technology, they tend to buy or copy it. An appropriate institutional variable applied here is complex measure combining research and development (R&D), the quality of scientific institutions in a country (Scientific Institutions) and the availability of scientists and engineers (Availability of Scientist). Gross Domestic Expenditure on Research and Development (GERD) is the R&D percentage of GDP as reported by OECD. While R&D alone does not guarantee successful growth, it is clear that, without systematic research activity, the development and the implementation of new technologies—and therefore future growth—will be inhibited. The Science institutional variable combines together R&D potential with physical scientific infrastructure and science oriented human capital<sup>30</sup>

**Pillar 12: High Growth.** High Growth is a combined measure of the percentage of high-growth businesses that intend to employ at least 10 people and plan to grow more than 50 percent in five years (Gazelle variable) with business strategy sophistication (Business Strategy variable) and venture capital financing possibility (Venture Capital). It might be argued that a shortcoming of the Gazelle variable is that growth is not an actual but an expected rate. However, a measure of expected growth is in fact a more appropriate measure of aspiration than a measure of realized growth. Business Strategy refers to “the ability of companies to pursue distinctive strategies, which involves differentiated positioning and innovative means of production and service delivery.” High Growth combines high growth potential with a sophisticated strategy and growth specific venture capital finance.<sup>31</sup>

**Pillar 13: Internationalization.** Internationalization is believed to be a major determinant of growth. A widely applied proxy for internationalization is exporting. Exporting demands capabilities beyond those needed by businesses that produce only for domestic markets. However, the institutional dimension is also important; a country’s openness to international entrepreneurs—that is, the potential for internationalization—can be estimated by its degree of complexity.” The complexity of an economy is related to the multiplicity of useful knowledge embedded in it. Because individuals are limited in what they know, the only way societies can expand their knowledge base is by facilitating the interaction of individuals in increasingly complex networks in order to make products. We can measure economic complexity by the mix of these products that

countries are able to make.” The internationalization pillar is designed to capture the degree to which a country’s entrepreneurs are internationalized, as measured by the exporting potential of businesses, controlling for the extent to which the country is able to produce complex products.<sup>32</sup>

**Pillar 14: Risk Capital.** The availability of risk finance, particularly equity rather than debt, is an essential precondition for fulfilling entrepreneurial aspirations that are beyond an individual entrepreneur’s personal financial resources.<sup>33</sup> Here we combine two kinds of finance, the informal investment (Informal Investment) and the institutional depth of capital market (DCM). Informal Investment is defined as the percentage of informal investors in the population age 18-64, multiplied by the average size of individuals’ investment in other people’s new businesses. While the rate of informal investment is high in factor-driven economies, the amount of informal investment is considerably larger in efficiency- and innovation-driven countries; combining them balances these two effects. Our institutional variable here is DCM, one of the six sub-indices of the Venture Capital and Private Equity Index. This variable is a complex measure of the size and liquidity of the stock market, level of IPO, M&A, and debt and credit market activity, which encompass seven aspects of a country’s debt and capital market.

## The Global Entrepreneurship Index: 2018 Rankings

In this section, we report the rankings of the 137 countries on the Global Entrepreneurship Index and its three sub-indices. We also provide confidence intervals for the GEI’s. The confidence intervals calculations are based on the Global Entrepreneurship Monitor (GEM) Total Early-Phased Entrepreneurial Activity (TEA) confidence intervals. Note that these confidence intervals only partially represent the potential measurement errors, as we do not know the full error term. In addition, we do not have information about the confidence intervals of the 34 countries where we use estimated data. In these cases, the upper and the lower limits are the same.

We present the rankings in terms of country development, as measured by per capita GDP. The overall ranking of the countries on the GEI is shown in **Table 1.6**. Like previous years, Anglo-Saxon, Nordic, and Western European countries in the innovation-driven

stage of development are in the front ranks. The United States, Switzerland and Canada lead the rankings. Three of the five Nordic countries, Denmark, Iceland, and Sweden, are in the top ten and effectively tied with the United States. Hong Kong, the highest Asian country, is in 13<sup>th</sup> place, and Taiwan is 18<sup>th</sup>. Besides their high entrepreneurial performance, these countries represent high income levels.

Of the most populous EU countries, only the United Kingdom and France place among the top 10 countries (4<sup>th</sup> and 10<sup>th</sup>). The other large European countries rank in the middle: Germany is 15<sup>th</sup>, Spain is 34<sup>th</sup> followed by Italy in 42<sup>nd</sup> place. While the UK, France, and Germany are relatively well balanced over the 14 pillars,

Poland, Spain, and Italy are entrepreneurially less efficient. A likely explanation for the EU countries' relatively weak economic performance over the last decade is their low level of entrepreneurship; the same applies to Japan, which took 28<sup>th</sup> place. Europe is still struggling to create new billion dollar companies.

Factor-driven countries with low GDPs, such as Pakistan, Bangladesh, Uganda, and other poor African countries, are at the bottom of the entrepreneurship ranking, as expected. At the same time, these countries' entrepreneurial performance is the least unbalanced. However, some countries—including two former socialist countries, Serbia and Russia, innovation-driven Italy, and two South American countries, Brazil and Trinidad and Tobago—should have higher levels of entrepreneurship, as implied by their development trend lines, and more efficient use of entrepreneurial resources.

Table 6. The Global Entrepreneurship Index Rank of All Countries, 2018

| Global rank | Country              | Score |
|-------------|----------------------|-------|
| 1           | United States        | 83.6  |
| 2           | Switzerland          | 80.4  |
| 3           | Canada               | 79.2  |
| 4           | United Kingdom       | 77.8  |
| 5           | Australia            | 75.5  |
| 6           | Denmark              | 74.3  |
| 7           | Iceland              | 74.2  |
| 8           | Ireland              | 73.7  |
| 9           | Sweden               | 73.1  |
| 10          | France               | 68.5  |
| 11          | Netherlands          | 68.1  |
| 12          | Finland              | 67.9  |
| 13          | Hong Kong            | 67.3  |
| 14          | Austria              | 66.0  |
| 15          | Germany              | 65.9  |
| 16          | Israel               | 65.4  |
| 17          | Belgium              | 63.7  |
| 18          | Taiwan               | 59.5  |
| 19          | Chile                | 58.5  |
| 20          | Luxembourg           | 58.2  |
| 21          | Norway               | 56.6  |
| 22          | Qatar                | 55.0  |
| 23          | Estonia              | 54.8  |
| 24          | Korea                | 54.2  |
| 25          | Slovenia             | 53.8  |
| 26          | United Arab Emirates | 53.5  |
| 27          | Singapore            | 52.7  |
| 28          | Japan                | 51.5  |
| 29          | Lithuania            | 51.1  |
| 30          | Poland               | 50.4  |
| 31          | Portugal             | 48.8  |
| 32          | Cyprus               | 48.0  |
| 33          | Oman                 | 46.9  |
| 34          | Spain                | 45.3  |
| 35          | Bahrain              | 45.1  |
| 36          | Slovakia             | 44.9  |
| 37          | Turkey               | 44.5  |
| 38          | Czech Republic       | 43.4  |
| 39          | Kuwait               | 42.8  |
| 40          | Tunisia              | 42.4  |
| 41          | Puerto Rico          | 42.1  |
| 42          | Italy                | 41.4  |
| 43          | China                | 41.1  |
| 44          | Latvia               | 40.5  |
| 45          | Saudi Arabia         | 40.2  |
| 46          | Romania              | 38.2  |
| 47          | Colombia             | 38.2  |
| 48          | Greece               | 37.1  |
| 49          | Jordan               | 36.5  |
| 50          | Hungary              | 36.4  |
| 51          | Uruguay              | 35.0  |
| 52          | Botswana             | 34.9  |
| 53          | Brunei Darussalam    | 34.3  |

| Global rank | Country                | Score |
|-------------|------------------------|-------|
| 54          | Croatia                | 34.0  |
| 55          | Barbados               | 33.6  |
| 56          | Costa Rica             | 33.3  |
| 57          | South Africa           | 32.9  |
| 58          | Malaysia               | 32.7  |
| 59          | Lebanon                | 31.5  |
| 60          | Montenegro             | 31.2  |
| 61          | Namibia                | 31.1  |
| 62          | Azerbaijan             | 30.5  |
| 63          | Belize                 | 30.0  |
| 64          | Kazakhstan             | 29.7  |
| 65          | Morocco                | 29.2  |
| 66          | Macedonia              | 29.1  |
| 67          | Peru                   | 28.4  |
| 68          | India                  | 28.4  |
| 69          | Bulgaria               | 27.8  |
| 70          | Panama                 | 27.7  |
| 71          | Thailand               | 27.4  |
| 72          | Iran                   | 26.8  |
| 73          | Ukraine                | 26.8  |
| 74          | Serbia                 | 26.4  |
| 75          | Mexico                 | 26.4  |
| 76          | Egypt                  | 25.9  |
| 77          | Georgia                | 25.8  |
| 78          | Russia                 | 25.2  |
| 79          | Gabon                  | 25.0  |
| 80          | Algeria                | 24.7  |
| 81          | Trinidad & Tobago      | 24.4  |
| 82          | Dominican Republic     | 24.3  |
| 83          | Albania                | 24.2  |
| 84          | Philippines            | 24.1  |
| 85          | Argentina              | 24.0  |
| 86          | Swaziland              | 23.8  |
| 87          | Vietnam                | 23.2  |
| 88          | Armenia                | 22.8  |
| 89          | Jamaica                | 22.2  |
| 90          | Sri Lanka              | 21.9  |
| 91          | Rwanda                 | 21.5  |
| 92          | Moldova                | 21.2  |
| 93          | Ghana                  | 21.0  |
| 94          | Indonesia              | 20.7  |
| 95          | Bosnia and Herzegovina | 20.7  |
| 96          | Ecuador                | 20.5  |
| 97          | Bolivia                | 20.4  |
| 98          | Brazil                 | 20.3  |
| 99          | Tajikistan             | 20.0  |
| 100         | Kyrgyz Republic        | 19.8  |
| 101         | Nigeria                | 19.7  |
| 102         | Zambia                 | 19.6  |
| 103         | Senegal                | 19.2  |
| 104         | Libya                  | 18.9  |
| 105         | Côte d'Ivoire          | 18.9  |
| 106         | Paraguay               | 18.7  |

| Global rank | Country      | Score |
|-------------|--------------|-------|
| 107         | Honduras     | 18.7  |
| 108         | Guatemala    | 18.5  |
| 109         | Kenya        | 18.4  |
| 110         | Ethiopia     | 18.3  |
| 111         | Suriname     | 18.1  |
| 112         | Lao PDR      | 17.8  |
| 113         | Cambodia     | 17.6  |
| 114         | El Salvador  | 16.7  |
| 115         | Tanzania     | 16.4  |
| 116         | Guyana       | 16.4  |
| 117         | Gambia. The  | 16.1  |
| 118         | Mali         | 15.9  |
| 119         | Liberia      | 15.7  |
| 120         | Pakistan     | 15.6  |
| 121         | Cameroon     | 15.4  |
| 122         | Nicaragua    | 14.7  |
| 123         | Angola       | 14.4  |
| 124         | Mozambique   | 14.0  |
| 125         | Madagascar   | 14.0  |
| 126         | Venezuela    | 13.8  |
| 127         | Myanmar      | 13.6  |
| 128         | Benin        | 13.3  |
| 129         | Burkina Faso | 13.2  |
| 130         | Guinea       | 12.9  |
| 131         | Uganda       | 12.9  |
| 132         | Sierra Leone | 12.3  |
| 133         | Malawi       | 12.2  |
| 134         | Bangladesh   | 11.8  |
| 135         | Burundi      | 11.8  |
| 136         | Mauritania   | 10.9  |
| 137         | Chad         | 9.0   |

## The Ranking of the 3As

By definition, the GEI is a three-component index that takes into account the different aspects of the entrepreneurial ecosystem. However, all three components, called sub-indices, are in themselves complex measures that include various characteristics of entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations.

*Entrepreneurial attitudes* are societies' attitudes toward entrepreneurship, which we define as a population's general feelings about recognizing opportunities, knowing entrepreneurs personally, endowing entrepreneurs with high status, accepting the risks associated with business startups, and having the skills to launch a business successfully. The benchmark individuals are those who can recognize valuable business opportunities and have the skills to exploit them; who attach high status to entrepreneurs; who can bear and handle startup risks; who know other entrepreneurs personally (i.e., have a network or role models); and who can generate future entrepreneurial activities.

Moreover, these people can provide the cultural support, financial resources, and networking potential to those who are already entrepreneurs or want to start a business. Entrepreneurial attitudes are important because they express the general feeling of the population toward entrepreneurs and entrepreneurship. Countries need people who can recognize valuable business opportunities, and who perceive that they have the required skills to exploit these opportunities. Moreover, if national attitudes toward entrepreneurship are positive, it will generate cultural support, financial support, and networking benefits for those who want to start businesses.

*Entrepreneurial abilities* refer to the entrepreneurs' characteristics and those of their businesses. Different types of entrepreneurial abilities can be distinguished within the realm of new business efforts. Creating businesses may vary by industry sector, the legal form of organization, and demographics—age, education, etc. We define entrepreneurial abilities as startups in the medium- or high-technology sectors that are initiated by educated entrepreneurs, and launched because of a person being motivated by an opportunity in an environment that is not overly competitive. In order to calculate the opportunity startup rate, we use the GEM

TEA Opportunity Index. TEA captures new startups not only as the creation of new ventures but also as startups within existing businesses, such as a spinoff or other entrepreneurial effort. Differences in the quality of startups are quantified by the entrepreneur's education level—that is, if they have a postsecondary education—and the uniqueness of the product or service as measured by the level of competition. Moreover, it is generally maintained that opportunity motivation is a sign of better planning, a more sophisticated strategy, and higher growth expectations than “necessity” motivation in startups.

*Entrepreneurial aspiration* reflects the quality aspects of startups and new businesses. Some people just dislike their currently employment situation and want to be their own boss, while others want to create the next Microsoft. Entrepreneurial aspiration is defined as the early-stage entrepreneur's effort to introduce new products and/or services, develop new production processes, penetrate foreign markets, substantially increase their company's staff, and finance their business with formal and/or informal venture capital. Product and process innovation, internationalization, and high growth are considered the key characteristics of entrepreneurship. Here we added a finance variable to capture the informal and formal venture capital potential that is vital for innovative startups and high-growth firms.

Each of these three building blocks of entrepreneurship influences the other two. For example, entrepreneurial attitudes influence entrepreneurial abilities and entrepreneurial aspirations, while entrepreneurial aspirations and abilities also influence entrepreneurial attitudes.

**Table 7** shows the ranking of the first 25 countries in the GEI and the rank of the sub-index. The sub-index points and rankings for all 137 countries can be found in the Appendix. The United States is first in the overall Index, and also in one out of the three sub-indices. Switzerland is 11<sup>th</sup> in attitudes, first in aspirations, and first in abilities, as it is more interested in high-impact entrepreneurship than in replicative activities. Chile represents a more unbalanced case, ranking 19<sup>th</sup> in the overall Index slipping three places, tenth in attitudes, 27<sup>th</sup> in abilities, and 30<sup>th</sup> in aspirations. This is a huge challenge for Chile and many other Latin American economies. Generally, countries that rank at the bottom of the GEI also rank at the bottom of the three sub-

indices. Israel ranks 16<sup>th</sup> in the overall Index but performs poorly in attitudes and abilities. However, it ranks 7<sup>th</sup> in Aspirations, despite having poorer attitudes and abilities.

For the “startup nation” it has an overall poor ranking in startup skills – at the bottom of the top 25 countries.

**Table 7: The Global Entrepreneurship Index and Sub-Index Ranks of the First 25 Countries, 2018**

| Countries      | GEI  | GEI rank | ATT  | ATT rank | ABT  | ABT rank | ASP  | ASP rank |
|----------------|------|----------|------|----------|------|----------|------|----------|
| United States  | 83.6 | 1        | 80.0 | 2        | 86.0 | 2        | 84.9 | 2        |
| Switzerland    | 80.4 | 2        | 69.5 | 11       | 86.4 | 1        | 85.5 | 1        |
| Canada         | 79.2 | 3        | 77.9 | 5        | 79.9 | 5        | 79.9 | 3        |
| United Kingdom | 77.8 | 4        | 73.6 | 7        | 83.3 | 4        | 76.3 | 4        |
| Australia      | 75.5 | 5        | 79.2 | 3        | 76.0 | 8        | 71.2 | 8        |
| Denmark        | 74.3 | 6        | 71.9 | 8        | 84.5 | 3        | 66.5 | 16       |
| Iceland        | 74.2 | 7        | 82.3 | 1        | 69.9 | 9        | 70.3 | 9        |
| Ireland        | 73.7 | 8        | 67.2 | 14       | 78.9 | 6        | 75.0 | 5        |
| Sweden         | 73.1 | 9        | 71.1 | 9        | 78.7 | 7        | 69.5 | 13       |
| France         | 68.5 | 10       | 61.4 | 17       | 69.7 | 10       | 74.4 | 6        |
| Netherlands    | 68.1 | 11       | 77.4 | 6        | 65.3 | 14       | 61.7 | 22       |
| Finland        | 67.9 | 12       | 79.0 | 4        | 62.9 | 16       | 61.8 | 21       |
| Hong Kong      | 67.3 | 13       | 69.4 | 12       | 62.5 | 17       | 70.2 | 10       |
| Austria        | 66.0 | 14       | 67.3 | 13       | 66.4 | 13       | 64.4 | 17       |
| Germany        | 65.9 | 15       | 61.1 | 18       | 67.2 | 12       | 69.4 | 14       |
| Israel         | 65.4 | 16       | 63.3 | 16       | 60.8 | 20       | 72.2 | 7        |
| Belgium        | 63.7 | 17       | 53.8 | 23       | 67.8 | 11       | 69.5 | 12       |
| Taiwan         | 59.5 | 18       | 54.0 | 22       | 54.8 | 24       | 69.6 | 11       |
| Chile          | 58.5 | 19       | 70.3 | 10       | 50.9 | 27       | 54.3 | 30       |
| Luxembourg     | 58.2 | 20       | 49.2 | 28       | 62.9 | 15       | 62.6 | 18       |
| Norway         | 56.6 | 21       | 66.1 | 15       | 60.9 | 19       | 42.8 | 44       |
| Qatar          | 55.0 | 22       | 48.4 | 29       | 54.5 | 25       | 62.2 | 19       |
| Estonia        | 54.8 | 23       | 57.6 | 19       | 55.7 | 22       | 51.0 | 35       |
| Korea          | 54.2 | 24       | 55.6 | 20       | 50.1 | 29       | 56.8 | 27       |
| Slovenia       | 53.8 | 25       | 54.4 | 21       | 55.0 | 23       | 52.1 | 33       |

## ENTREPRENEURIAL ATTITUDES

As stated earlier, entrepreneurial attitude is defined as the general attitude of a country's population toward recognizing opportunities, knowing entrepreneurs personally, attaching high status to entrepreneurs, accepting the risks associated with a business startup, and having the skills to successfully launch businesses. Entrepreneurial attitudes are important because they express the population's general feelings toward entrepreneurs and entrepreneurship.

The benchmark individuals are those who can (1) recognize valuable business opportunities, (2) have the necessary skills to exploit these opportunities, (3) attach high status to and respect entrepreneurs, (4) handle startup risk, and (5) know entrepreneurs personally (i.e., have a network or role models). Moreover, these people can provide the cultural support, financial resources, and networking potential to those who are already entrepreneurs or want to start a business.

**Table 8: Entrepreneurial Attitudes Sub-Index and Pillar Values for the First 25 Countries, 2018\***

| Countries      | Attitudes Sub-index | Opportunity Perception | Startup Skills | Risk Acceptance | Networking | Cultural Support |
|----------------|---------------------|------------------------|----------------|-----------------|------------|------------------|
| Iceland        | 82.3                | 0.947                  | 1.000          | 0.917           | 1.000      | 0.633            |
| United States  | 80.0                | 0.864                  | 1.000          | 0.969           | 0.569      | 0.816            |
| Australia      | 79.2                | 0.947                  | 1.000          | 0.717           | 0.698      | 0.782            |
| Finland        | 79.0                | 0.954                  | 0.986          | 0.782           | 0.833      | 0.885            |
| Canada         | 77.9                | 0.981                  | 0.795          | 0.708           | 0.626      | 0.975            |
| Netherlands    | 77.4                | 0.898                  | 0.887          | 0.877           | 0.800      | 1.000            |
| United Kingdom | 73.6                | 0.810                  | 0.573          | 0.876           | 0.619      | 0.928            |
| Denmark        | 71.9                | 1.000                  | 0.690          | 0.748           | 0.634      | 0.918            |
| Sweden         | 71.1                | 1.000                  | 0.472          | 0.704           | 0.740      | 0.896            |
| Chile          | 70.3                | 0.821                  | 0.903          | 1.000           | 0.709      | 0.628            |
| Switzerland    | 69.5                | 0.776                  | 0.719          | 0.879           | 0.533      | 0.673            |
| Hong Kong      | 69.4                | 1.000                  | 0.581          | 0.610           | 1.000      | 0.680            |
| Austria        | 67.3                | 0.780                  | 0.953          | 0.672           | 0.552      | 0.683            |
| Ireland        | 67.2                | 0.766                  | 0.966          | 0.801           | 0.390      | 0.780            |
| Norway         | 66.1                | 1.000                  | 0.540          | 0.999           | 0.473      | 1.000            |
| Israel         | 63.3                | 0.738                  | 0.598          | 0.481           | 1.000      | 0.738            |
| France         | 61.4                | 0.502                  | 0.558          | 0.751           | 0.673      | 0.641            |
| Germany        | 61.1                | 0.775                  | 0.627          | 0.657           | 0.380      | 0.842            |
| Estonia        | 57.6                | 0.896                  | 0.800          | 0.622           | 0.493      | 0.563            |
| Korea          | 55.6                | 0.457                  | 0.774          | 0.905           | 0.765      | 0.272            |
| Slovenia       | 54.4                | 0.349                  | 1.000          | 0.843           | 0.331      | 0.504            |
| Taiwan         | 54.0                | 0.517                  | 0.526          | 0.587           | 0.644      | 0.580            |
| Belgium        | 53.8                | 0.679                  | 0.677          | 0.559           | 0.349      | 0.568            |
| Saudi Arabia   | 53.6                | 0.611                  | 0.933          | 0.436           | 1.000      | 0.477            |
| Spain          | 51.3                | 0.407                  | 0.807          | 0.692           | 0.640      | 0.339            |

\*Pillar values are the normalized pillar scores and after the average pillar correction.

Iceland leads in the Attitudes sub index, followed by the United States, Australia, Finland, Canada, Netherlands, United Kingdom, Denmark, Sweden and Chile. Chile's tenth place is a very strong showing for a South American country. Factor-driven African and Asian

countries, including Swaziland, Mali, Sierra Leone, Ethiopia, Bangladesh, Pakistan, Malawi, Chad, and Burundi, are at the bottom.

## ENTREPRENEURIAL ABILITIES

High entrepreneurial abilities are associated with startups in the medium- or high-technology sectors that are initiated by educated entrepreneurs and launched because of opportunity motivation in a not too

competitive environment. Quality differences in startups are quantified by the motivation and education level of the entrepreneur, and by the uniqueness of the product or service, as measured by the level of competition.

**Table 9: Entrepreneurial Abilities Sub-Index and Pillar Values for the First 25 Countries, 2018\***

| Countries      | Abilities Sub-index | Opportunity Startup | Technology Absorption | Human Capital | Competition |
|----------------|---------------------|---------------------|-----------------------|---------------|-------------|
| Switzerland    | 86.4                | 0.966               | 1.000                 | 0.789         | 1.000       |
| United States  | 86.0                | 0.849               | 0.814                 | 1.000         | 1.000       |
| Denmark        | 84.5                | 1.000               | 1.000                 | 1.000         | 0.989       |
| United Kingdom | 83.3                | 0.925               | 1.000                 | 0.742         | 0.848       |
| Canada         | 79.9                | 0.999               | 0.779                 | 0.912         | 0.676       |
| Ireland        | 78.9                | 1.000               | 0.769                 | 0.851         | 1.000       |
| Sweden         | 78.7                | 0.976               | 0.946                 | 0.644         | 0.869       |
| Australia      | 76.0                | 0.871               | 0.780                 | 0.950         | 0.567       |
| Iceland        | 69.9                | 1.000               | 1.000                 | 0.506         | 0.501       |
| France         | 69.7                | 0.683               | 0.840                 | 0.625         | 0.739       |
| Belgium        | 67.8                | 0.543               | 0.852                 | 0.778         | 0.850       |
| Germany        | 67.2                | 0.759               | 0.863                 | 0.482         | 0.848       |
| Austria        | 66.4                | 0.808               | 0.941                 | 0.399         | 0.761       |
| Netherlands    | 65.3                | 0.935               | 0.835                 | 0.365         | 0.786       |
| Luxembourg     | 62.9                | 1.000               | 0.839                 | 0.551         | 0.857       |
| Finland        | 62.9                | 1.000               | 0.826                 | 0.495         | 0.415       |
| Hong Kong      | 62.5                | 0.800               | 0.643                 | 0.894         | 0.381       |
| Japan          | 61.1                | 0.588               | 0.902                 | 0.983         | 0.594       |
| Norway         | 60.9                | 1.000               | 0.752                 | 0.419         | 0.671       |
| Israel         | 60.8                | 0.647               | 1.000                 | 0.811         | 0.317       |
| Singapore      | 58.6                | 1.000               | 0.739                 | 1.000         | 0.655       |
| Estonia        | 55.7                | 0.635               | 0.773                 | 0.540         | 0.606       |
| Slovenia       | 55.0                | 0.604               | 0.744                 | 0.500         | 0.485       |
| Taiwan         | 54.8                | 0.651               | 0.705                 | 0.701         | 0.317       |
| Qatar          | 54.5                | 0.754               | 0.339                 | 0.882         | 0.603       |

\*Pillar values are the normalized pillar scores and after the average pillar correction.

Switzerland ranks number one on the Entrepreneurial Abilities sub-index. The US ranks second and is relatively weak in Opportunity Startup and Technology Absorption. Switzerland is stronger than the U.S. in two pillars, Opportunity Startups and Technology Absorption, but very weak in Human Capital. The United Kingdom ranks fourth, with a significantly lower Entrepreneurial Abilities score than Denmark, the United States and Switzerland. Canada is strong in Opportunity Startup and Technology Absorption, but low on Human Capital and Competition.

The first five countries are followed by Ireland, Sweden, Australia, Iceland and France.

## ENTREPRENEURIAL ASPIRATIONS

Entrepreneurial aspiration is the early-stage entrepreneur’s effort to introduce new products and/or services, develop new production processes, penetrate foreign markets, substantially increase the firm’s staff, and finance a business with formal and/or informal venture capital. In other words, the effort to start new companies that will generate wealth and can be scaled. Product and process innovation, internationalization, and high growth are considered characteristics of

entrepreneurship. The benchmark entrepreneurs are those whose businesses (1) produce and sell products/services considered to be new to at least some customers, (2) use a technology less than five years old, (3) have sales in foreign markets, (4) plan to employ at least ten people, and (5) have greater than 50 percent growth over the next five years. The Finance variable captures the informal venture capital potential, as well as the development of capital, venture capital, and credit markets, which is vital for innovative startups and high-growth firms.

**Table 10: Entrepreneurial Aspirations Sub-Index and Pillar Values for the First 25 Countries, 2018\***

| Countries            | Aspirations Sub-index | Product Innovation | Process Innovation | High Growth | Internationalization | Risk Capital |
|----------------------|-----------------------|--------------------|--------------------|-------------|----------------------|--------------|
| Switzerland          | 85.5                  | 0.834              | 0.902              | 0.882       | 1.000                | 1.000        |
| United States        | 84.9                  | 0.733              | 0.902              | 1.000       | 1.000                | 0.876        |
| Canada               | 79.9                  | 0.991              | 0.758              | 0.559       | 0.936                | 1.000        |
| United Kingdom       | 76.3                  | 0.924              | 0.701              | 0.850       | 0.824                | 0.649        |
| Ireland              | 75.0                  | 1.000              | 0.822              | 0.884       | 0.970                | 0.568        |
| France               | 74.4                  | 0.801              | 0.941              | 0.644       | 0.764                | 0.768        |
| Israel               | 72.2                  | 0.997              | 1.000              | 0.851       | 0.601                | 0.788        |
| Australia            | 71.2                  | 0.592              | 0.786              | 0.658       | 0.633                | 1.000        |
| Iceland              | 70.3                  | 0.602              | 0.838              | 0.699       | 0.952                | 0.588        |
| Hong Kong            | 70.2                  | 0.884              | 0.409              | 1.000       | 0.679                | 1.000        |
| Taiwan               | 69.6                  | 0.972              | 0.696              | 0.895       | 0.536                | 0.935        |
| Belgium              | 69.5                  | 0.913              | 0.963              | 0.551       | 0.887                | 0.627        |
| Sweden               | 69.5                  | 0.666              | 0.899              | 0.557       | 0.816                | 0.721        |
| Germany              | 69.4                  | 0.667              | 0.840              | 0.662       | 0.874                | 0.760        |
| United Arab Emirates | 68.1                  | 1.000              | 0.626              | 0.899       | 0.901                | 0.979        |
| Denmark              | 66.5                  | 0.988              | 0.723              | 0.594       | 0.390                | 1.000        |
| Austria              | 64.4                  | 0.724              | 0.818              | 0.403       | 0.901                | 0.630        |
| Luxembourg           | 62.6                  | 1.000              | 0.612              | 0.545       | 1.000                | 0.902        |
| Qatar                | 62.2                  | 0.856              | 0.516              | 1.000       | 0.529                | 0.956        |
| Japan                | 62.1                  | 0.788              | 1.000              | 1.000       | 0.606                | 0.547        |
| Finland              | 61.8                  | 0.617              | 0.795              | 0.675       | 0.647                | 0.497        |
| Netherlands          | 61.7                  | 0.652              | 0.769              | 0.596       | 0.562                | 0.715        |
| Singapore            | 61.6                  | 0.763              | 1.000              | 1.000       | 1.000                | 0.796        |
| China                | 60.0                  | 1.000              | 0.759              | 0.871       | 0.310                | 1.000        |
| Lithuania            | 59.2                  | 0.708              | 0.502              | 0.636       | 0.736                | 0.641        |

\*Pillar values are the normalized pillar scores after the average pillar correction.

The Switzerland leads in the Entrepreneurial Aspirations sub-index. While showing some weakness in Product Innovation and High Growth, it is very strong in Internationalization and Risk Capital. The United States is second, with a strong showing in High Growth and Internationalization, followed by Canada, the United Kingdom, Ireland, France, Israel, Australia, Iceland and Hong Kong, which round out the top ten.

## Summaries and Conclusion

Entrepreneurship is similar to other social creatures, in that it is a multidimensional phenomenon whose exact meaning is difficult to identify. There is only one thing more difficult: how to measure this vaguely defined creature. Over the decades, researchers have created several entrepreneurship indicators, but none has been able to reflect the complex nature of entrepreneurship

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### References

- <sup>1</sup> Acs Z., and P. Correa 2014, The World Bank and GEDI, Identifying the Obstacles to High-Impact Entrepreneurship in Latin America and the Caribbean
- <sup>2</sup> Stam 2015; Stam and Spiegel, 2015; Szerb, L., Acs, Z. J. Ortega-Argilés, R. and Komlosi, E, 2014; Acs, Autio and Szerb, 2014a; Autio et al 2014; Autio and Levie, 2015; Autio et al 2012.
- <sup>3</sup> Moore, 1993
- <sup>4</sup> (Mathews and Brueggemann, 2015, Chapter 14)
- <sup>5</sup> Acs, Szerb and Autio, National Systems of Entrepreneurship: Measurement and Policy, Research Policy, (2014b:479)
- <sup>6</sup> Stakeholder engagement is central for multi-polar policy-making and implementation. Deep stakeholder engagement can tap knowledge within the ecosystem and uncover hidden interactions and cause-effect chains.
- <sup>7</sup> While there is a small literature on entrepreneurship and economic growth our view is that high-impact firms cause economic growth because they shift the production function and replicative entrepreneurship is caused by economic growth and creates employment by replicating the existing production function .
- <sup>8</sup> This trend is reflected in the continuing decline in the cost of computing, the rise of open-source software, the move to the 'cloud' and the emergence of huge datacenters where companies such as Amazon, Google, and Facebook are designing their own approaches.
- <sup>9</sup> Autio and Levie, 2015.
- <sup>10</sup> Woolridge, 2009.
- <sup>11</sup> Leibenstein, 1968.
- <sup>12</sup> [https://www.youtube.com/watch?v=hjNc\\_BScn-s](https://www.youtube.com/watch?v=hjNc_BScn-s)
- <sup>13</sup> The Wall Street Journal (2014). 'Amazon Reports Loss Despite Strong Sales Growth'. Available at: <http://online.wsj.com/articles/amazon-reports-another-loss-despite-strong-sales-growth-1406233529>
- <sup>14</sup> Acs, Z.J., Autio, E., Szerb, L. (2014). National systems of entrepreneurship: Measurement issues and policy implications. Research Policy, 43 (3), 476-494.

and provide a plausible explanation of its role in development. The Global Entrepreneurship Index is the first, and presently the only, complex measure of the national-level entrepreneurship ecosystem that reflects the multifaceted nature of entrepreneurship.

- <sup>15</sup> Schumpeter, J.A. (1934). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. Cambridge, MA: Harvard University Press.
- <sup>16</sup> We agree that correlation and basic regression coefficients are not enough to determine causation, which is why we say that a 10% global increase in GEI could improve global productivity 0.22 points. But, it should be kept in mind that the said change in the GEI, and the changes to institutions that it represents, could add this amount to global productivity, since the institutions that support entrepreneurship also support a variety of other economic and non-economic activities.
- <sup>17</sup> Gartner (1990), Davidsson (2004), Wennekers and Thurik (1999),) and Godin, Clemens, and Veldhuis (2008), Zahra, et al (2014). Gupta and Gupta (2015) all identify several dimensions of entrepreneurship.
- <sup>18</sup> Baumol, 1990; Vivarely 2013, Thurik et al 2013
- <sup>19</sup> Bjørnskov & Foss 2010, Goel et al 2015
- <sup>20</sup> Bholra, Verheul, Thurik, & Grilo, 2006. Tumasjan & Braun 2012, Autio et al (2014)
- <sup>21</sup> Papagiannidis & Li, 2005; Dutta & Merenda 2011, Ibrahim & Mas'ud, 2016,
- <sup>22</sup> Caliendo, Fossen, & Kritikos, 2009. Vieider et al 2015
- <sup>23</sup> Shane & Cable, 2003; Mian and Hattab 2013, Audretsch et al 2015
- <sup>24</sup> Guiso, Sapienza, & Zingales, 2006., Lee et al 2011, Dutta & Sobel 2016
- <sup>25</sup> Da Rin et al 2011, Asoni, & Sanandaji 2014, Belitski et al 2016
- <sup>26</sup> Coad & Rao, 2008. García-Morales et al 2014
- <sup>27</sup> Bates, 1990. Qian 2016
- <sup>28</sup> Baumol, Litan, & Schramm, 2007. Calcagno & Sobel 2014
- <sup>29</sup> Autio et al 2014; Grimpe, & Hussinger 2013, Audretsch et al 2014b
- <sup>30</sup> Stam & Wennberg, 2009. Audretsch et al 2014a, Garud et al 2014
- <sup>31</sup> Acs, Parsons, & Tracy, 2008, Gompers & Lerner, 2004, Croce et al 2013, Wright & Stigliani 2013.
- <sup>32</sup> De Clercq, Sapienza, & Crijns, 2005; McDougall-Covin et al 2014
- <sup>33</sup> Groh, Liechtenstein, & Lieser, 2012. Lee et al 2015

## How to read these pages

Country name

What rank is this country out of the 137 countries in the 2018 GEI? Lower ranks indicate better performance.

Which of the 14 ecosystem components does this country do the best at?

Which of the 14 ecosystem components should the country focus on first to improve the fastest?

What is the country's overall GEI score? Higher scores are better, and are shown in more intense green. All scores are shown as percentages.

**Albania**

Global Rank:  
83 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

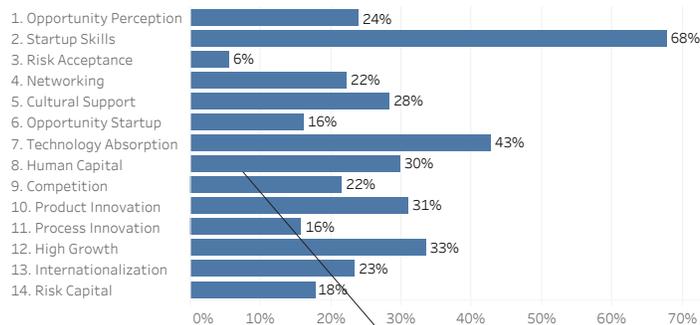


Individual score:  
entrepreneurial qualities of the people in the ecosystem

Institutional score:  
quality of the institutions that support entrepreneurship



Component scores



How does the country score on the half of GEI indicators that represent individuals? Higher scores are better, and are shown in more intense green. All scores are shown as percentages.

How does the country score on the half of GEI indicators that represent institutions?

What do the shades of green represent? More intense green indicates better scores.

How does the country score on each of the 14 entrepreneurship ecosystem components? Longer bars represent higher scores. All scores are shown as percentages.

## What does each component measure?

- 1: Opportunity Perception** - Can the population identify opportunities to start a business and does the institutional environment make it possible to act on those opportunities?
- 2: Startup Skills** - Does the population have the skills necessary to start a business based on their own perceptions and the availability of tertiary education?
- 3: Risk Acceptance** - Are individuals willing to take the risk of starting a business? Is the environment relatively low risk or do unstable institutions add additional risk to starting a business?
- 4: Networking** - Do entrepreneurs know each other and how geographically concentrated are their networks?
- 5: Cultural Support** - How does the country view entrepreneurship? Is it easy to choose entrepreneurship or does corruption make entrepreneurship difficult relative to other career paths?
- 6: Opportunity Perception** - Are entrepreneurs motivated by opportunity rather than necessity and does governance make the choice to be an entrepreneur easy?
- 7: Technology Absorption** - Is the technology sector large and can businesses rapidly absorb new technology?
- 8: Human Capital** - Are entrepreneurs highly educated, well trained in business and able to move freely in the labor market?
- 9: Competition** - Are entrepreneurs creating unique products and services and able to enter the market with them?
- 10: Product Innovation** - Is the country able to develop new products and integrate new technology?
- 11: Process Innovation** - Do businesses use new technology and are they able access high quality human capital in STEM fields?
- 12: High Growth** - Do businesses intend to grow and have the strategic capacity to achieve this growth?
- 13: Internationalization** - Do entrepreneurs want to enter global markets and is the economy complex enough to produce ideas that are valuable globally?
- 14: Risk Capital** - Is capital available from both individual and institutional investors?

## Albania

Global Rank:  
83 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

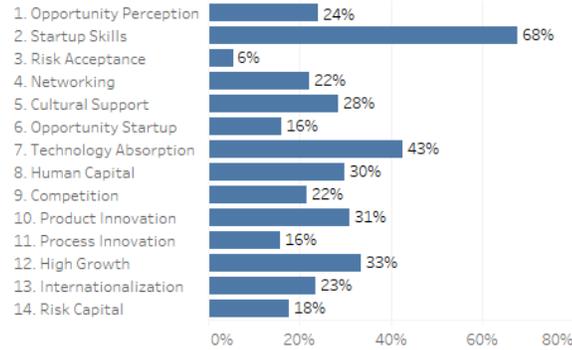


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Algeria

Global Rank:  
80 of 137

Strongest area:  
Networking

Weakest area:  
Process Innovation

Overall GEI score:

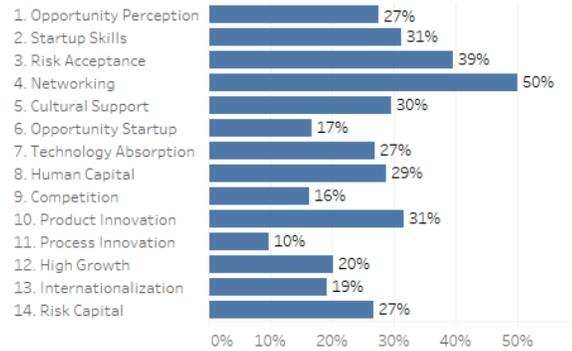


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Angola

Global Rank:  
123 of 137

Strongest area:  
Risk Capital

Weakest area:  
Startup Skills

Overall GEI score:

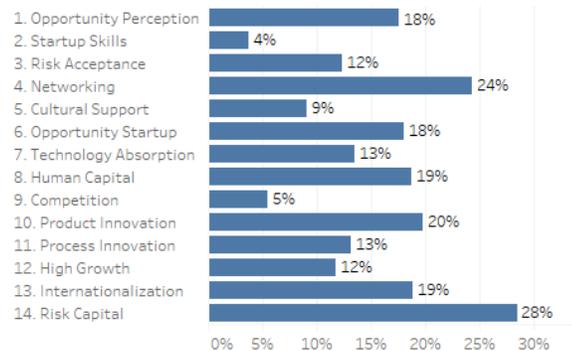


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Argentina

Global Rank:  
85 of 137

Strongest area:  
Startup Skills

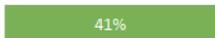
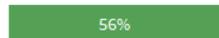
Weakest area:  
Risk Acceptance

Overall GEI score:

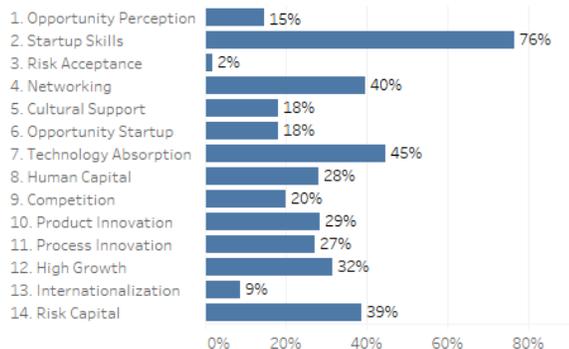


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Armenia

Global Rank:  
88 of 137

Strongest area:  
Human Capital

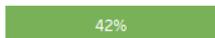
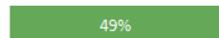
Weakest area:  
Risk Acceptance

Overall GEI score:

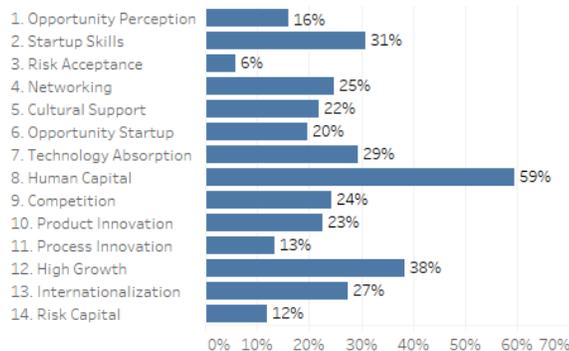


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Australia

Global Rank:  
5 of 137

Strongest area:  
Startup Skills; Risk Capital

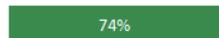
Weakest area:  
Competition

Overall GEI score:

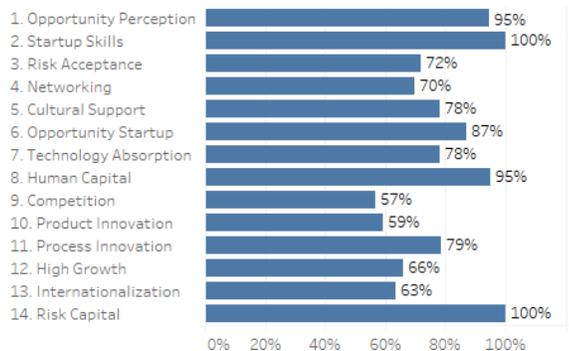


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Austria

Global Rank:  
14 of 137

Strongest area:  
Startup Skills

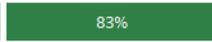
Weakest area:  
Human Capital

Overall GEI score:

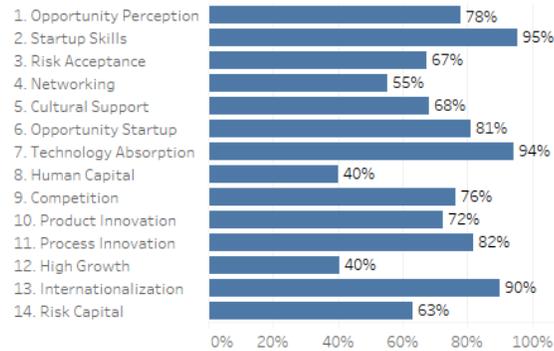


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Azerbaijan

Global Rank:  
62 of 137

Strongest area:  
Product Innovation

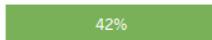
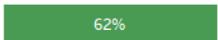
Weakest area:  
Risk Acceptance

Overall GEI score:

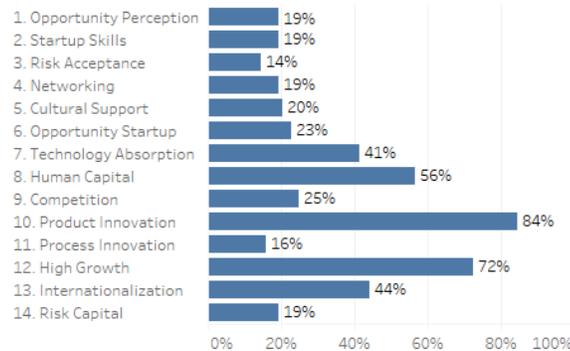


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Bahrain

Global Rank:  
35 of 137

Strongest area:  
High Growth

Weakest area:  
Process Innovation

Overall GEI score:

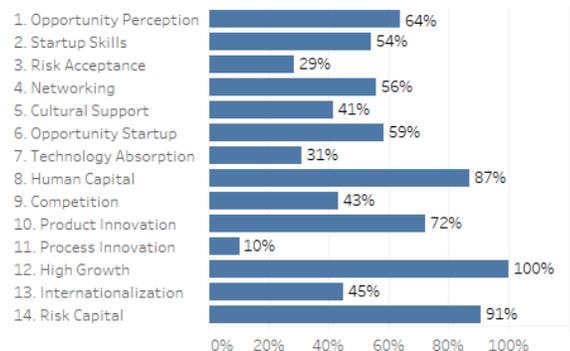


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Bangladesh

Global Rank:  
134 of 137

Strongest area:  
Opportunity Startup

Weakest area:  
Internationalization

Overall GEI score:

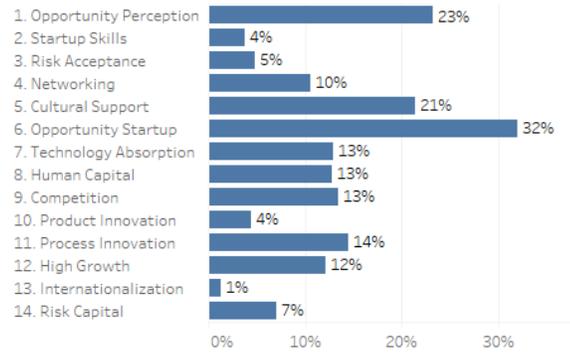


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Barbados

Global Rank:  
55 of 137

Strongest area:  
Startup Skills

Weakest area:  
Process Innovation

Overall GEI score:

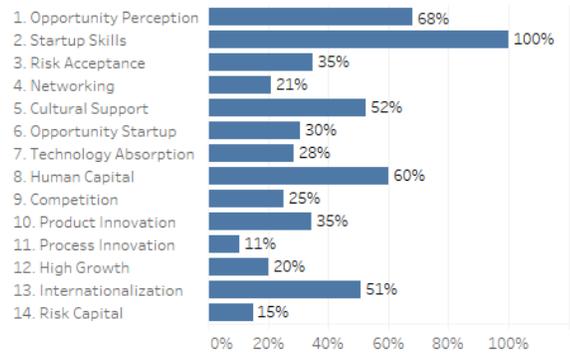


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Belgium

Global Rank:  
17 of 137

Strongest area:  
Process Innovation

Weakest area:  
Networking

Overall GEI score:

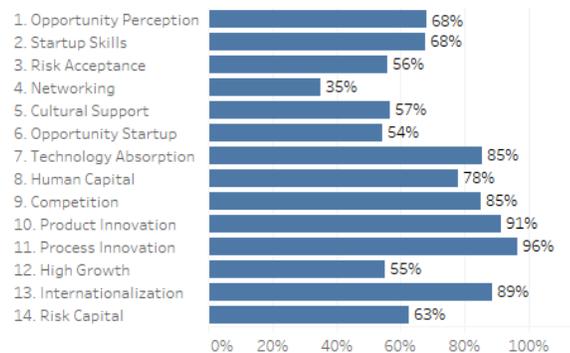


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Belize

Global Rank:  
63 of 137

Strongest area:  
Internationalization

Weakest area:  
Risk Acceptance

Overall GEI score:

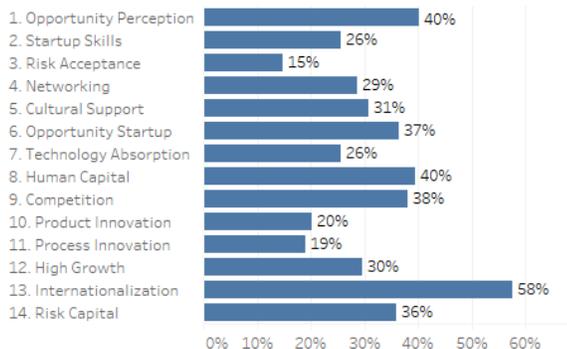


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Benin

Global Rank:  
128 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Process Innovation

Overall GEI score:

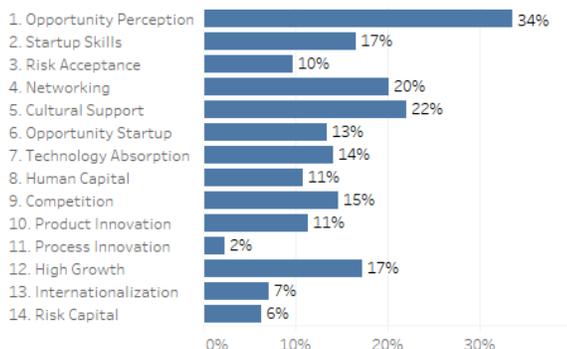


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Bolivia

Global Rank:  
97 of 137

Strongest area:  
Product Innovation

Weakest area:  
Opportunity Startup

Overall GEI score:

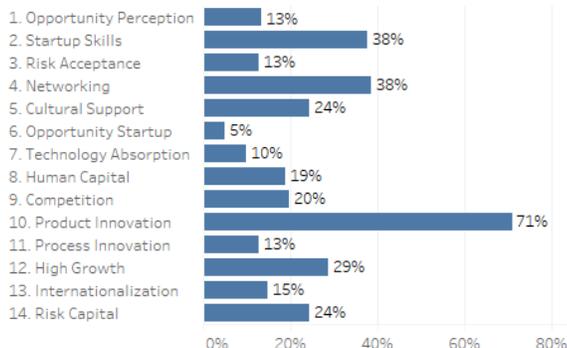


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Bosnia and Herzegovina

Global Rank:  
95 of 137

Strongest area:  
Internationalization

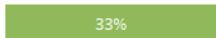
Weakest area:  
Risk Acceptance

Overall GEI score:

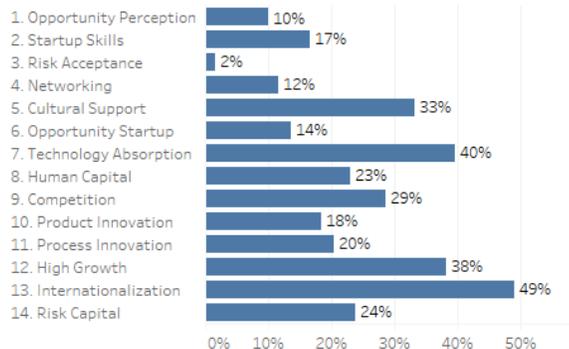


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Botswana

Global Rank:  
52 of 137

Strongest area:  
Risk Acceptance

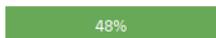
Weakest area:  
Risk Capital

Overall GEI score:

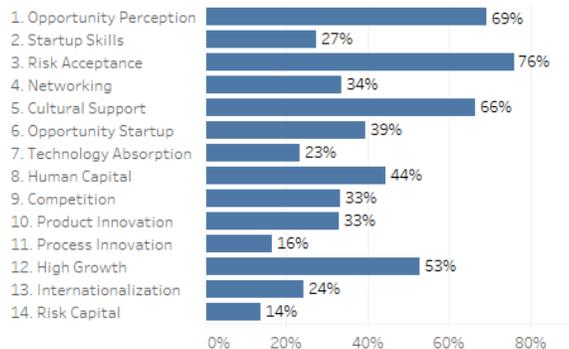


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Brazil

Global Rank:  
98 of 137

Strongest area:  
Networking

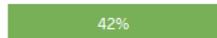
Weakest area:  
Internationalization

Overall GEI score:

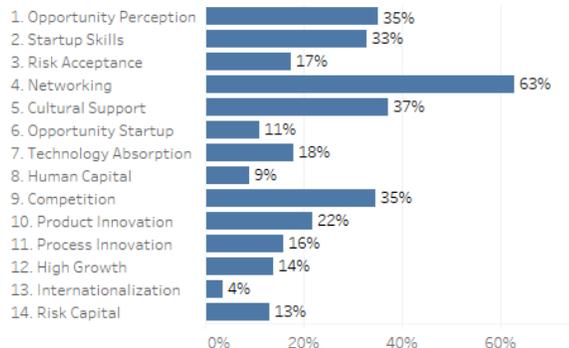


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Brunei Darussalam

Global Rank:  
53 of 137

Strongest area:  
Human Capital

Weakest area:  
Process Innovation

Overall GEI score:

34%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

60%

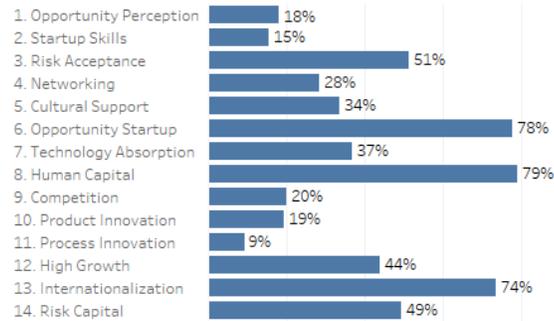
55%

Scores

0% 100%



Component scores



0% 20% 40% 60% 80%

## Bulgaria

Global Rank:  
69 of 137

Strongest area:  
Process Innovation

Weakest area:  
Opportunity Perception

Overall GEI score:

28%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

47%

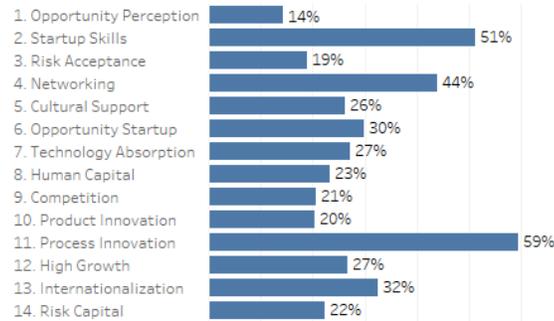
52%

Scores

0% 100%



Component scores



0% 10% 20% 30% 40% 50% 60% 70%

## Burkina Faso

Global Rank:  
129 of 137

Strongest area:  
Cultural Support

Weakest area:  
Risk Acceptance

Overall GEI score:

13%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

57%

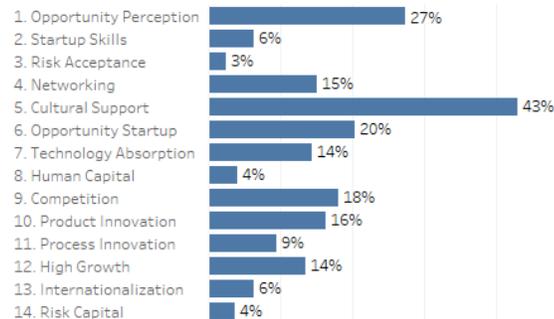
25%

Scores

0% 100%



Component scores



0% 10% 20% 30% 40% 50%

## Burundi

Global Rank:  
135 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Risk Acceptance

Overall GEI score:

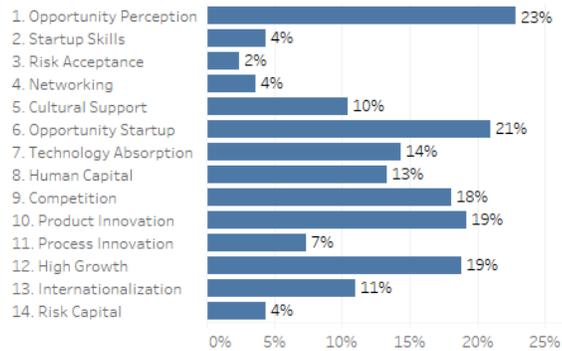


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Cambodia

Global Rank:  
113 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

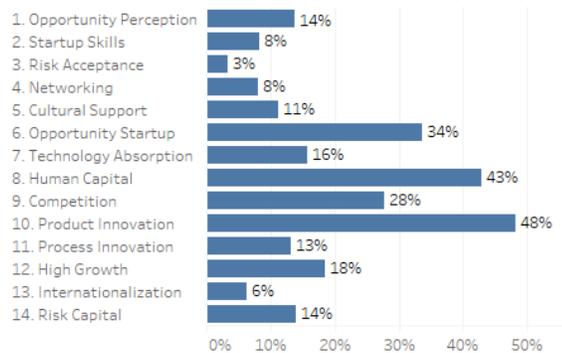


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Cameroon

Global Rank:  
121 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Process Innovation

Overall GEI score:

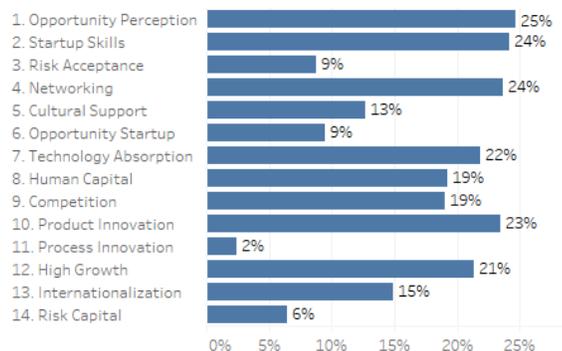


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Canada

Global Rank:  
3 of 137

Strongest area:  
Risk Capital

Weakest area:  
High Growth

Overall GEI score:

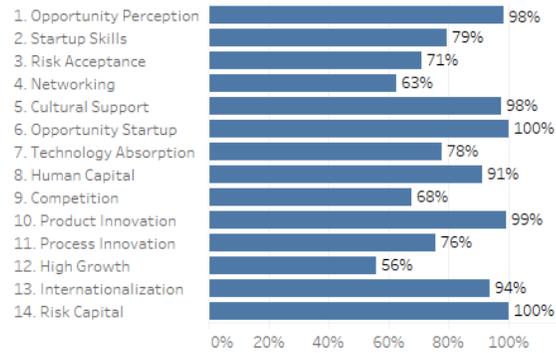


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



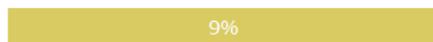
## Chad

Global Rank:  
137 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

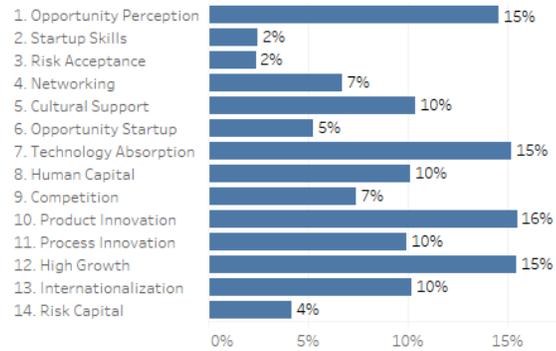


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Chile

Global Rank:  
19 of 137

Strongest area:  
Risk Acceptance; Product Inn..

Weakest area:  
Process Innovation

Overall GEI score:

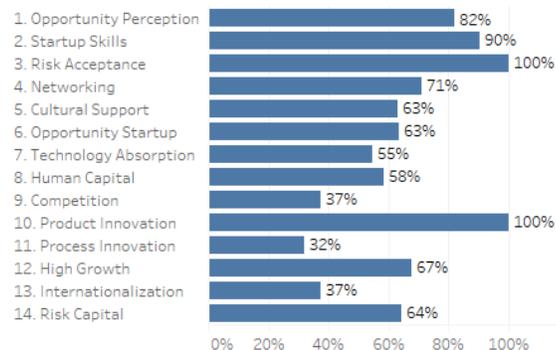


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## China

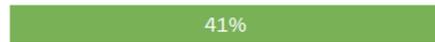
Global Rank:  
43 of 137

Strongest area:  
Product Innovation; Risk Cap..

Weakest area:

Opportunity Perception

Overall GEI score:

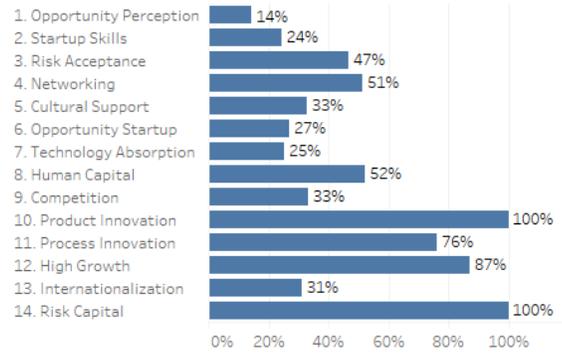


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Colombia

Global Rank:  
47 of 137

Strongest area:  
High Growth

Weakest area:

Process Innovation

Overall GEI score:

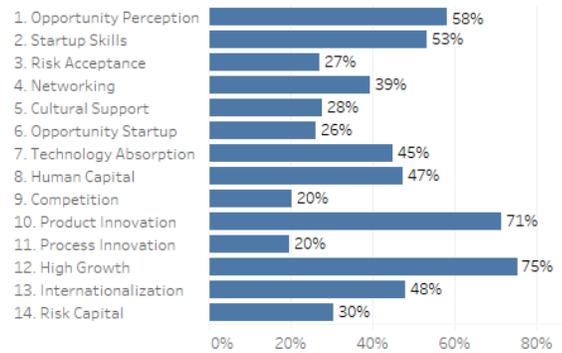


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Costa Rica

Global Rank:  
56 of 137

Strongest area:  
Startup Skills

Weakest area:

Technology Absorption

Overall GEI score:

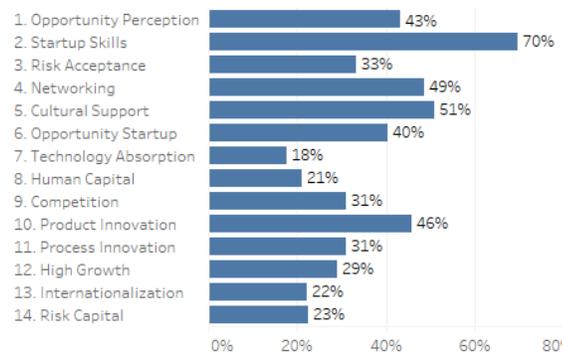


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Côte d'Ivoire

Global Rank:  
105 of 137

Strongest area:  
Networking

Weakest area:  
Risk Capital

Overall GEI score:

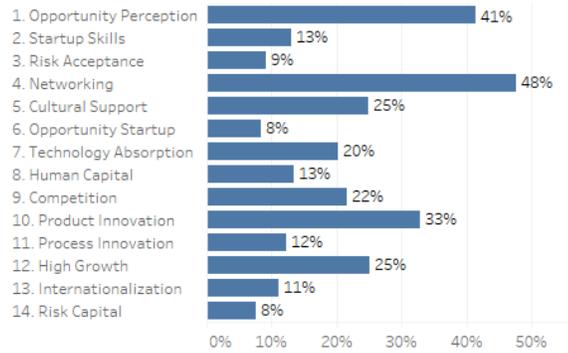


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Croatia

Global Rank:  
54 of 137

Strongest area:  
Internationalization

Weakest area:  
Risk Acceptance

Overall GEI score:

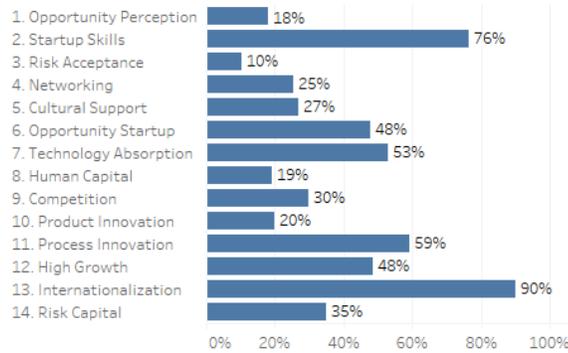


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



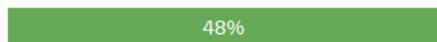
## Cyprus

Global Rank:  
32 of 137

Strongest area:  
Opportunity Startup

Weakest area:  
Networking

Overall GEI score:

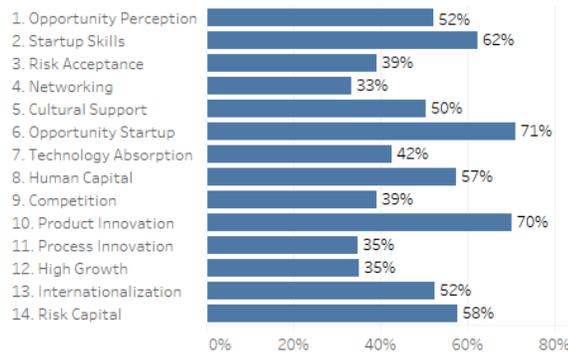


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Czech Republic

Global Rank:  
38 of 137

Strongest area:  
Internationalization

Weakest area:  
Cultural Support

Overall GEI score:

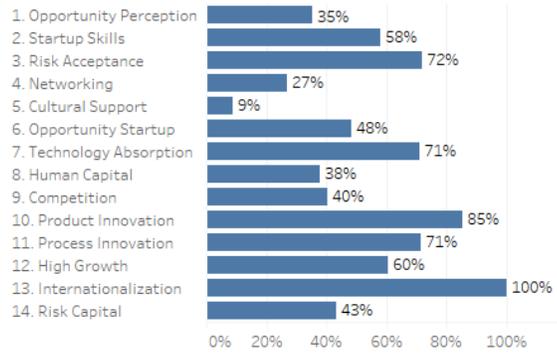


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Denmark

Global Rank:  
6 of 137

Strongest area:  
Opportunity Perception; Opp..

Weakest area:  
Internationalization

Overall GEI score:

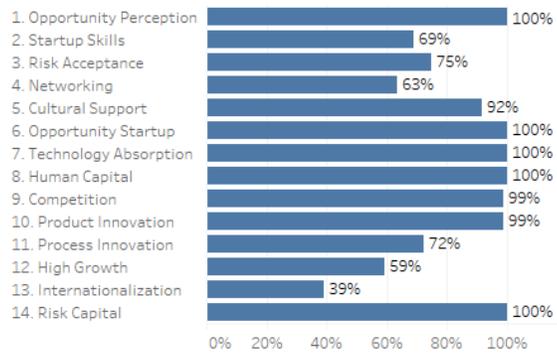


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Dominican Republic

Global Rank:  
82 of 137

Strongest area:  
Networking

Weakest area:  
Technology Absorption

Overall GEI score:

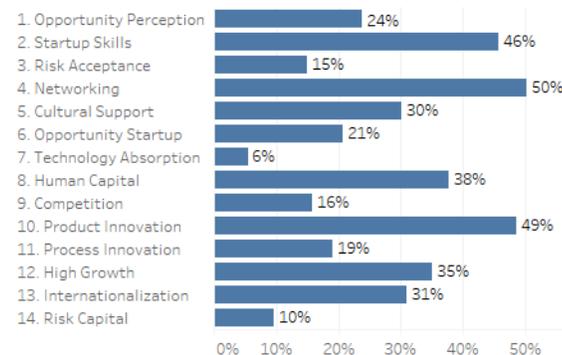


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Ecuador

Global Rank:  
96 of 137

Strongest area:  
Startup Skills

Weakest area:  
Internationalization

Overall GEI score:

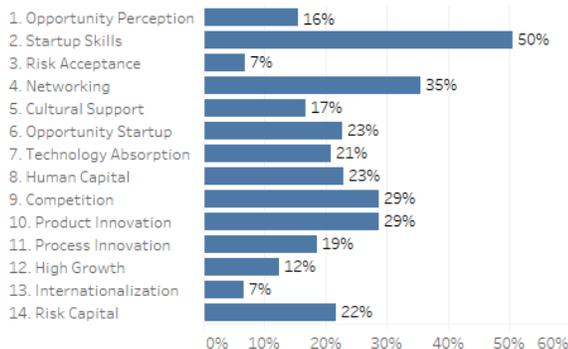


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Egypt

Global Rank:  
76 of 137

Strongest area:  
Risk Capital

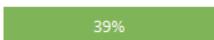
Weakest area:  
Risk Acceptance

Overall GEI score:

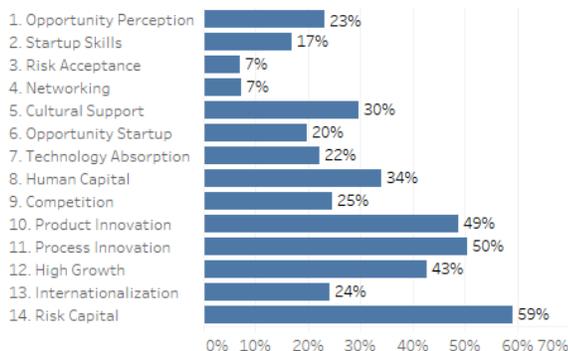


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## El Salvador

Global Rank:  
114 of 137

Strongest area:  
Networking

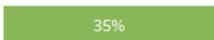
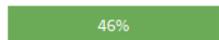
Weakest area:  
Process Innovation

Overall GEI score:

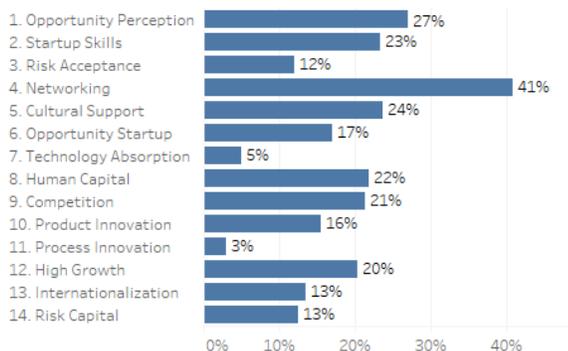


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Estonia

Global Rank:  
23 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Risk Capital

Overall GEI score:

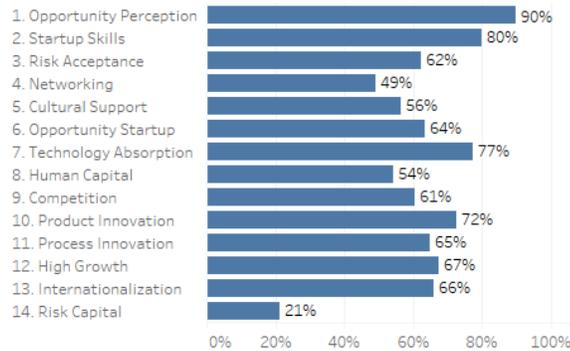


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Ethiopia

Global Rank:  
110 of 137

Strongest area:  
Process Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

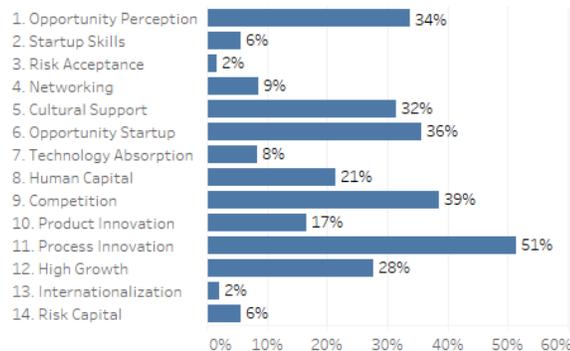


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Finland

Global Rank:  
12 of 137

Strongest area:  
Opportunity Startup

Weakest area:  
Competition

Overall GEI score:

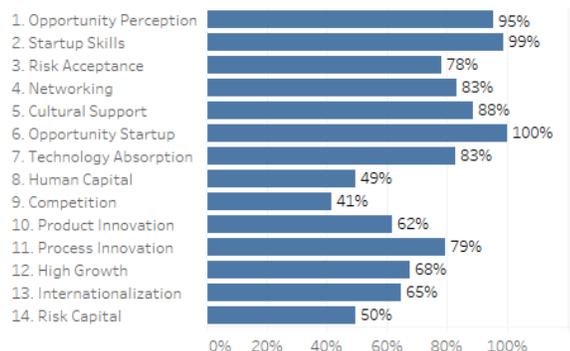


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## France

Global Rank:  
10 of 137

Strongest area:  
Process Innovation

Weakest area:  
Opportunity Perception

Overall GEI score:

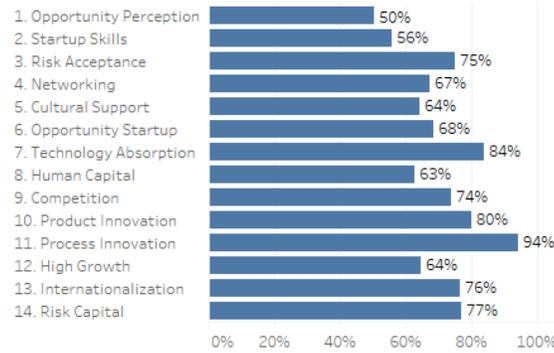


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Gabon

Global Rank:  
79 of 137

Strongest area:  
Networking

Weakest area:  
Risk Capital

Overall GEI score:

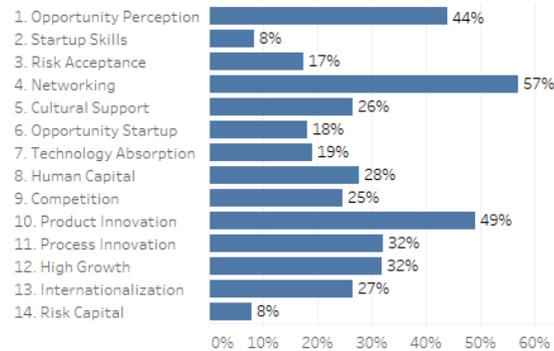


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



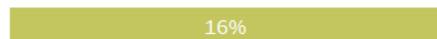
## Gambia, The

Global Rank:  
117 of 137

Strongest area:  
Networking

Weakest area:  
Startup Skills

Overall GEI score:

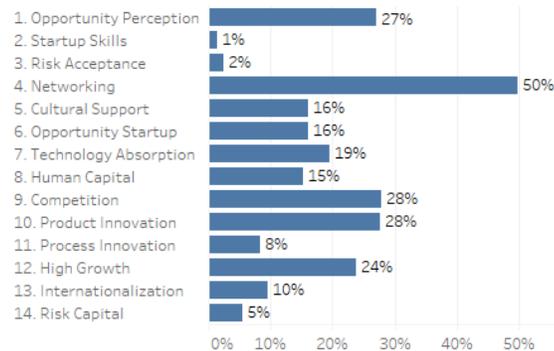


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Georgia

Global Rank:  
77 of 137

Strongest area:  
Cultural Support

Weakest area:  
Risk Acceptance

Overall GEI score:

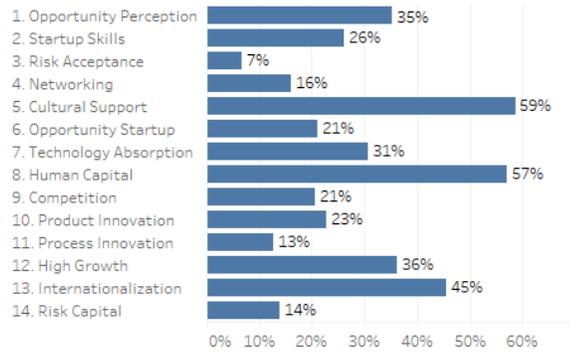


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Germany

Global Rank:  
15 of 137

Strongest area:  
Internationalization

Weakest area:  
Networking

Overall GEI score:

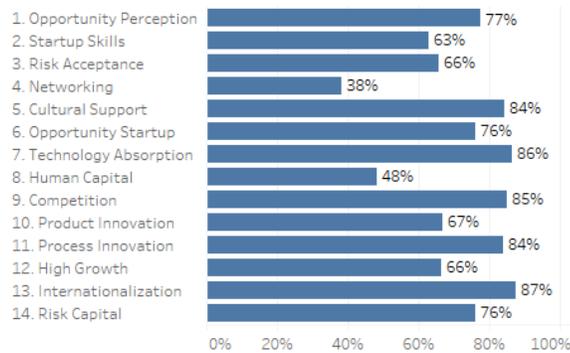


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Ghana

Global Rank:  
93 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Human Capital

Overall GEI score:

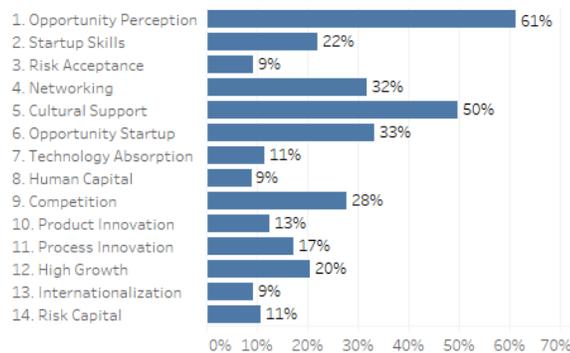


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Greece

Global Rank:  
48 of 137

Strongest area:  
Startup Skills

Weakest area:  
High Growth

Overall GEI score:

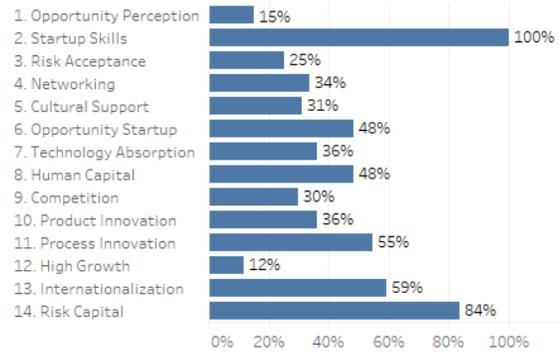


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Guatemala

Global Rank:  
108 of 137

Strongest area:  
Product Innovation

Weakest area:  
Internationalization

Overall GEI score:

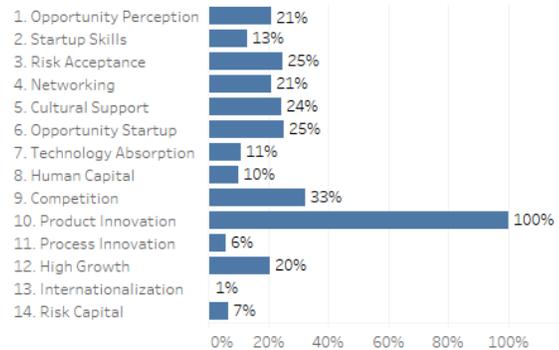


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Guinea

Global Rank:  
130 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Risk Acceptance

Overall GEI score:

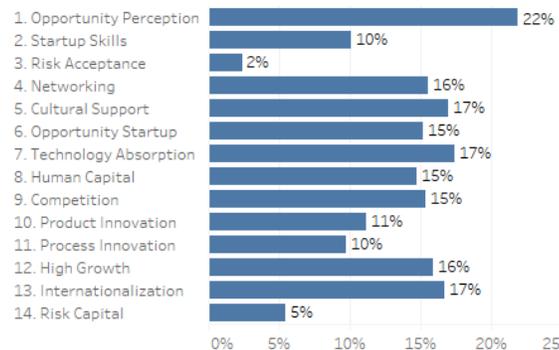


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Guyana

Global Rank:  
116 of 137

Strongest area:  
Human Capital

Weakest area:  
Technology Absorption

Overall GEI score:

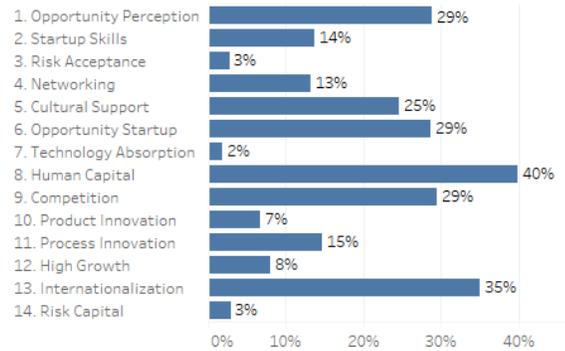


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Honduras

Global Rank:  
107 of 137

Strongest area:  
Product Innovation

Weakest area:  
Process Innovation

Overall GEI score:

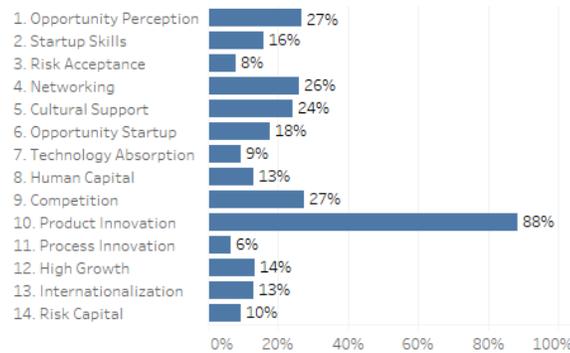


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Hong Kong

Global Rank:  
13 of 137

Strongest area:  
Opportunity Perception; Networking;  
High Growth; Risk Capital

Weakest area:  
Competition

Overall GEI score:

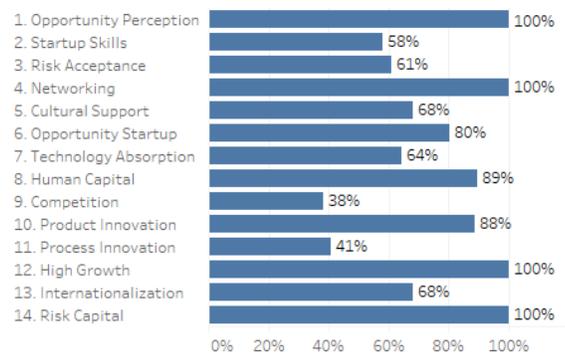


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Hungary

Global Rank:  
50 of 137

Strongest area:  
Internationalization

Weakest area:  
Risk Acceptance

Overall GEI score:

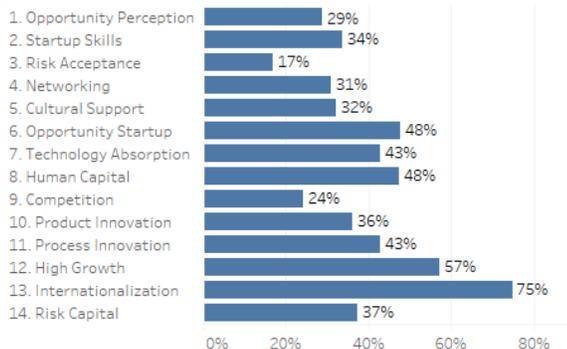


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Iceland

Global Rank:  
7 of 137

Strongest area:  
Startup Skills; Networking; Opportunity  
Startup; Technology Absorption

Weakest area:  
Competition

Overall GEI score:

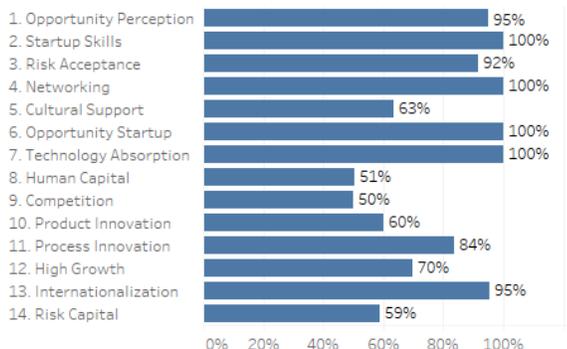


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## India

Global Rank:  
68 of 137

Strongest area:  
Product Innovation

Weakest area:  
Technology Absorption

Overall GEI score:

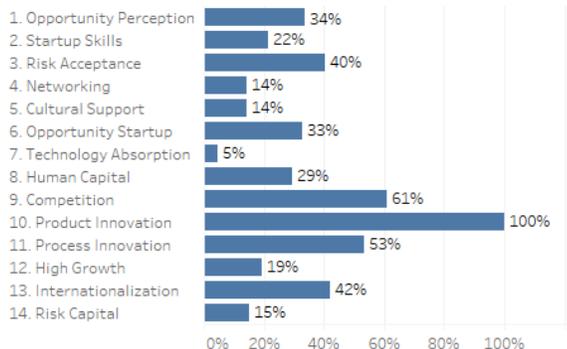


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Indonesia

Global Rank:  
94 of 137

Strongest area:  
Networking

Weakest area:  
Internationalization

Overall GEI score:

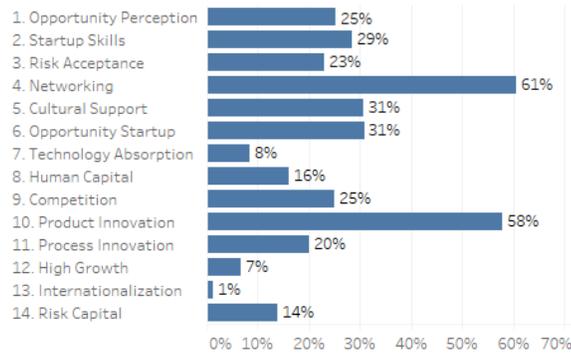


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Iran

Global Rank:  
72 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

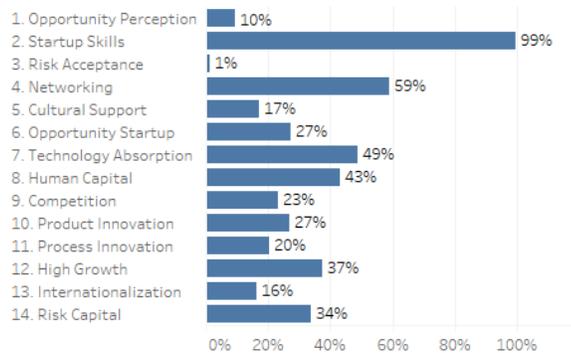


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Ireland

Global Rank:  
8 of 137

Strongest area:  
Opportunity Startup; Compe..

Weakest area:  
Networking

Overall GEI score:

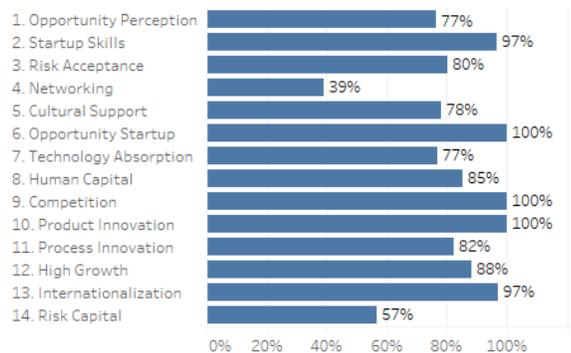


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Israel

Global Rank:  
16 of 137

Strongest area:  
Networking; Technology Absorption;  
Process Innovation

Weakest area:  
Competition

Overall GEI score:

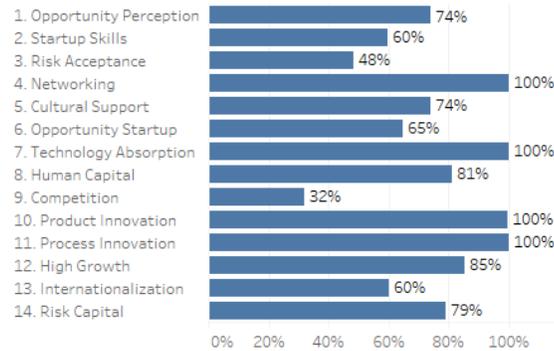


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Italy

Global Rank:  
42 of 137

Strongest area:  
Product Innovation

Weakest area:  
Human Capital

Overall GEI score:

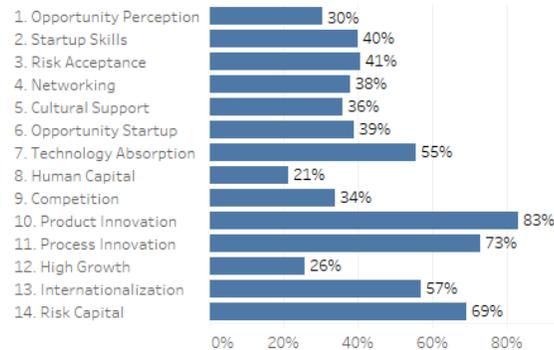


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Jamaica

Global Rank:  
89 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Risk Acceptance

Overall GEI score:

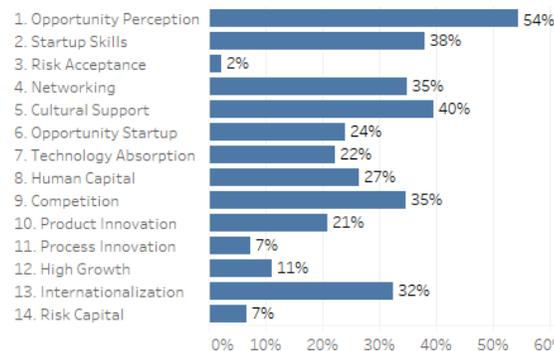


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Japan

Global Rank:  
28 of 137

Strongest area:  
Process Innovation; High Gro..

Weakest area:  
Startup Skills

Overall GEI score:

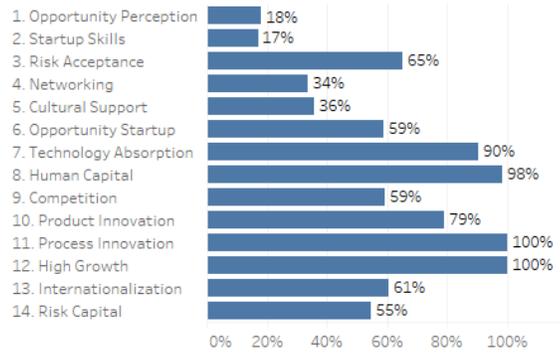


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Jordan

Global Rank:  
49 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

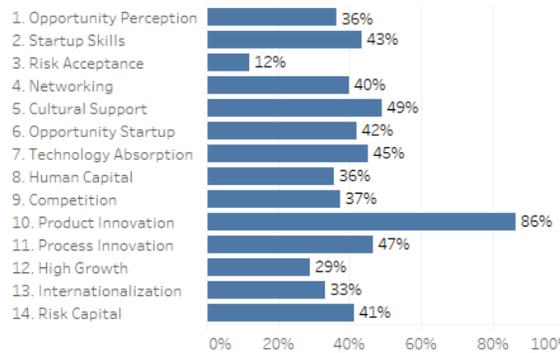


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Kazakhstan

Global Rank:  
64 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

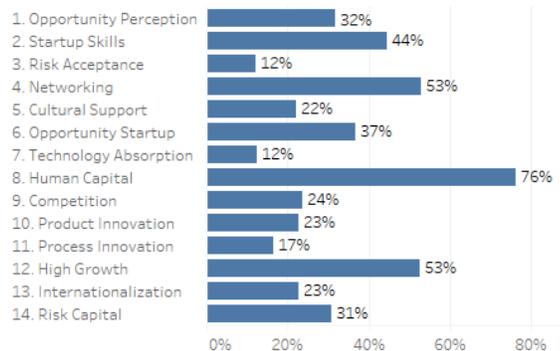


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Kenya

Global Rank:  
109 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

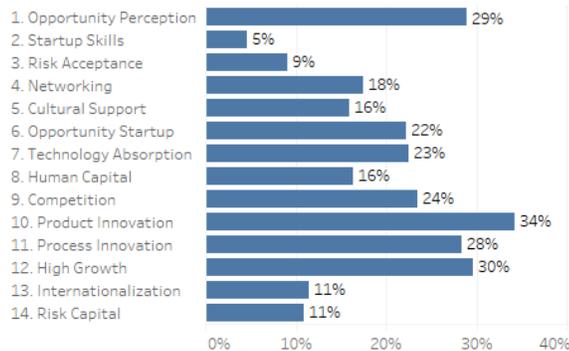


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



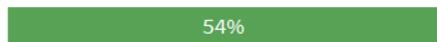
## Korea

Global Rank:  
24 of 137

Strongest area:  
Process Innovation

Weakest area:  
Cultural Support

Overall GEI score:

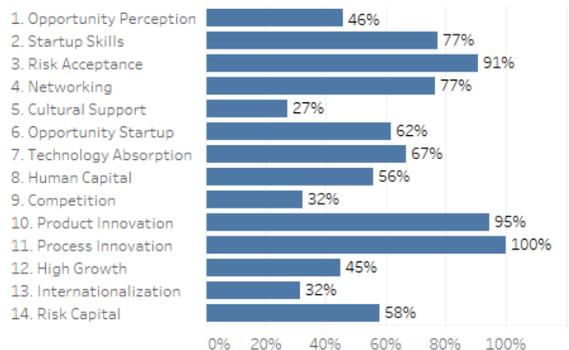


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



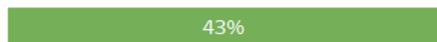
## Kuwait

Global Rank:  
39 of 137

Strongest area:  
High Growth

Weakest area:  
Competition

Overall GEI score:

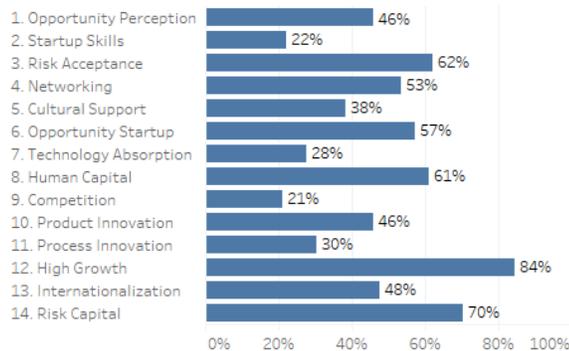


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Kyrgyz Republic

Global Rank:  
100 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

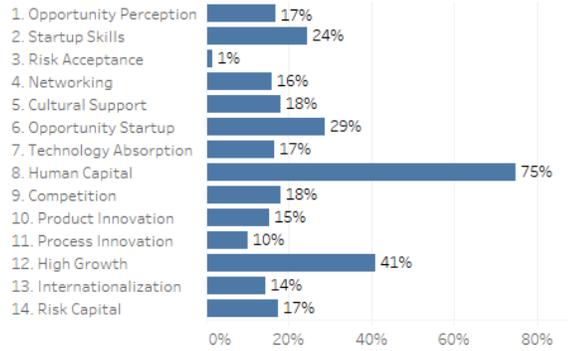


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



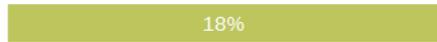
# Lao PDR

Global Rank:  
112 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

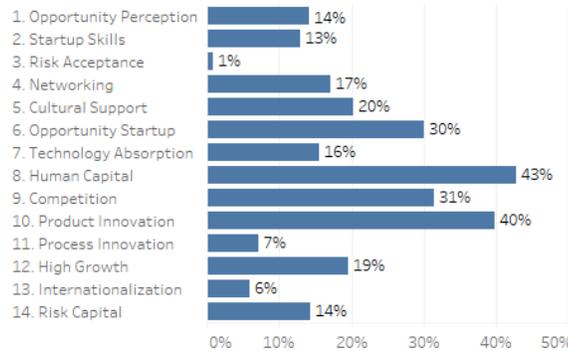


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Latvia

Global Rank:  
44 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

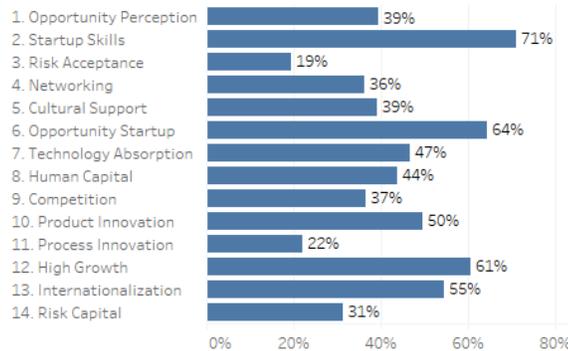


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Lebanon

Global Rank:  
59 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

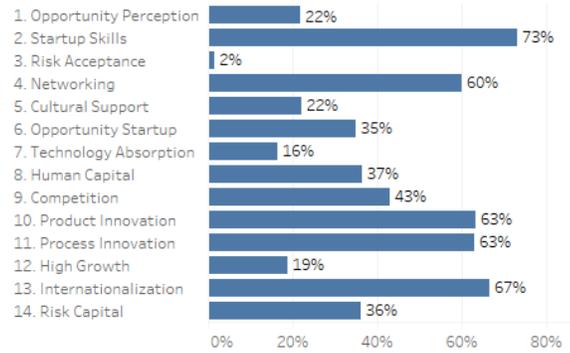


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Liberia

Global Rank:  
119 of 137

Strongest area:  
Networking

Weakest area:  
Risk Acceptance

Overall GEI score:

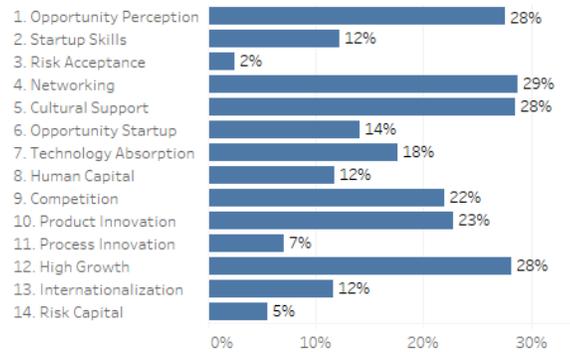


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Libya

Global Rank:  
104 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

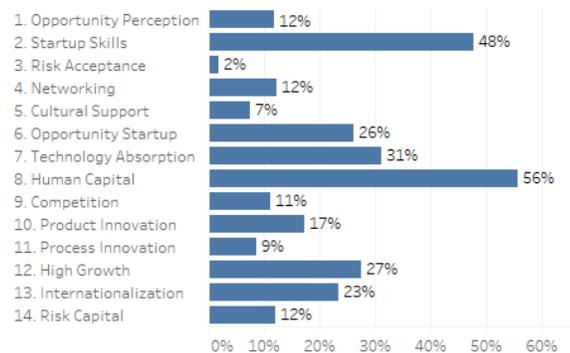


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Lithuania

Global Rank:  
29 of 137

Strongest area:  
Human Capital

Weakest area:  
Competition

Overall GEI score:

51%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

66%

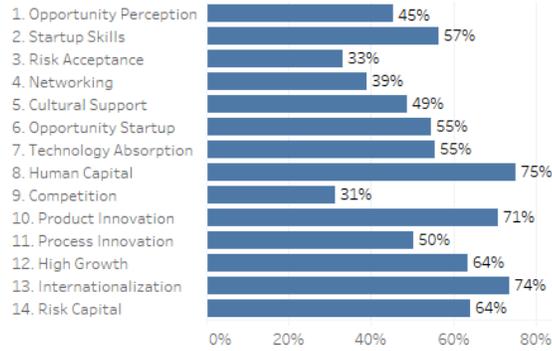
64%

Scores

0% 100%



Component scores



## Luxembourg

Global Rank:  
20 of 137

Strongest area:  
Opportunity Startup; Product  
Innovation; Internationalization

Weakest area:  
Startup Skills

Overall GEI score:

58%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

74%

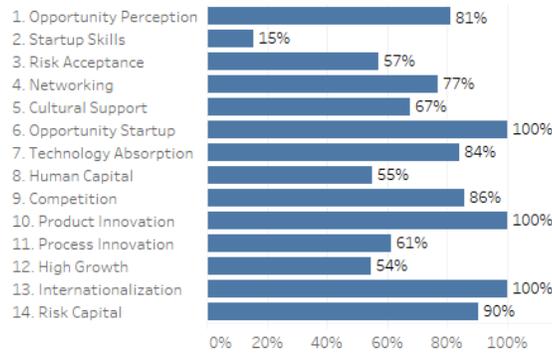
80%

Scores

0% 100%



Component scores



## Macedonia

Global Rank:  
66 of 137

Strongest area:  
Technology Absorption

Weakest area:  
Risk Acceptance

Overall GEI score:

29%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

56%

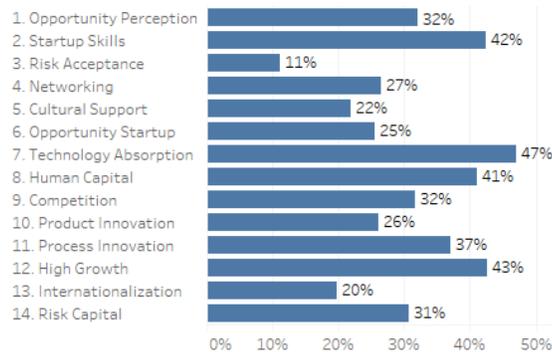
44%

Scores

0% 100%



Component scores



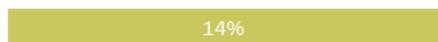
## Madagascar

Global Rank:  
125 of 137

Strongest area:  
Opportunity Perception

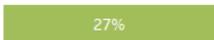
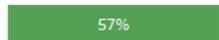
Weakest area:  
Risk Acceptance

Overall GEI score:

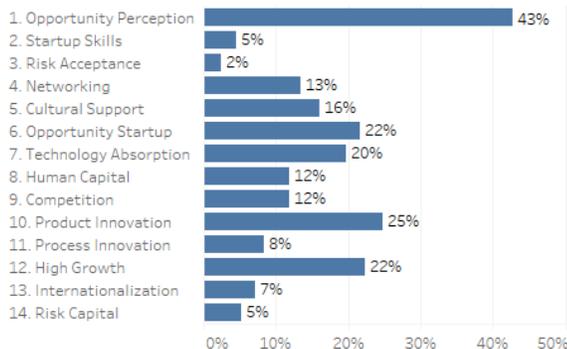


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Malawi

Global Rank:  
133 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

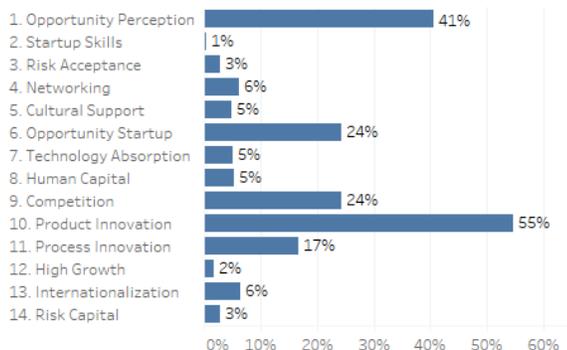


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Malaysia

Global Rank:  
58 of 137

Strongest area:  
Process Innovation

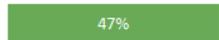
Weakest area:  
Technology Absorption

Overall GEI score:

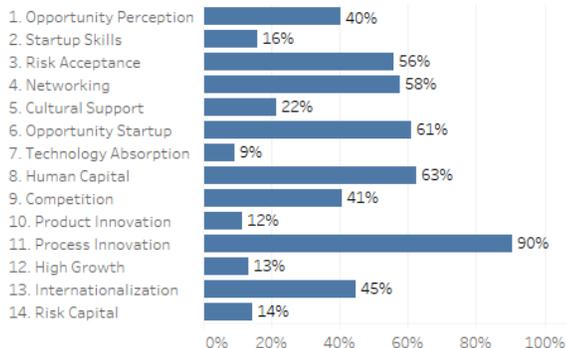


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Mali

Global Rank:  
118 of 137

Strongest area:  
Competition

Weakest area:  
Risk Acceptance

Overall GEI score:

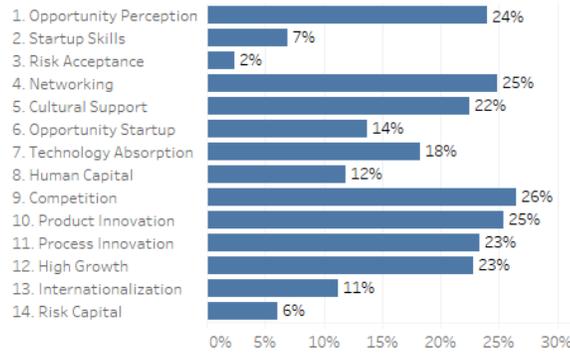


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



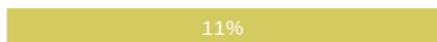
## Mauritania

Global Rank:  
136 of 137

Strongest area:  
Networking

Weakest area:  
Risk Acceptance

Overall GEI score:

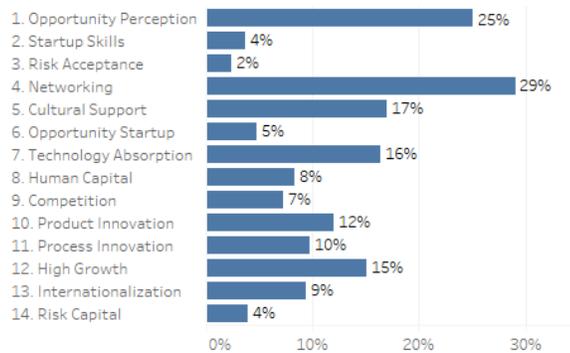


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Mexico

Global Rank:  
75 of 137

Strongest area:  
Networking

Weakest area:  
Cultural Support

Overall GEI score:

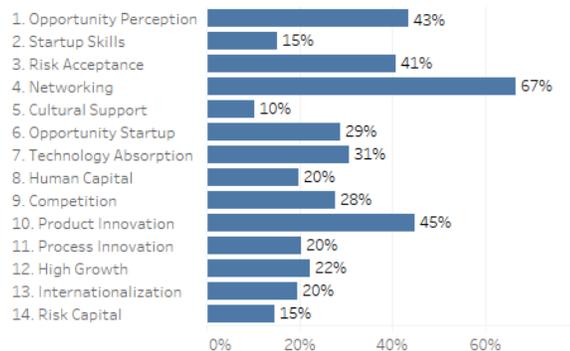


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Moldova

Global Rank:  
92 of 137

Strongest area:  
High Growth

Weakest area:  
Risk Acceptance

Overall GEI score:

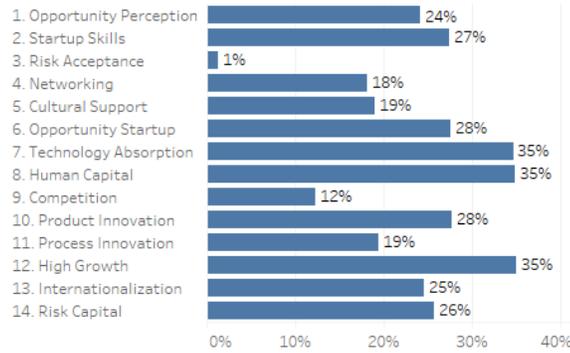


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Montenegro

Global Rank:  
60 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

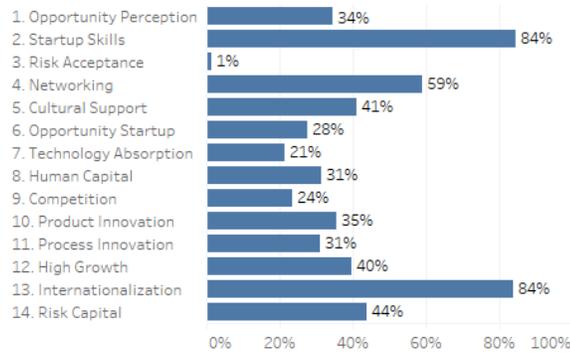


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Morocco

Global Rank:  
65 of 137

Strongest area:  
Product Innovation

Weakest area:  
Competition

Overall GEI score:

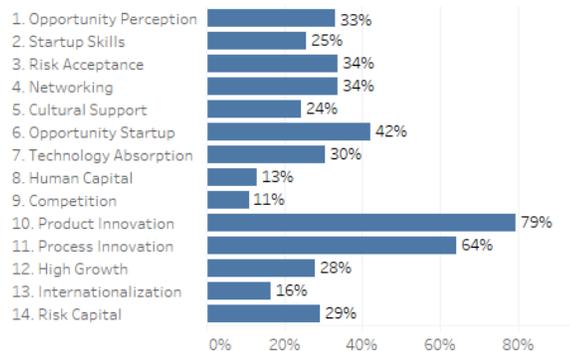


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Mozambique

Global Rank:  
124 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Risk Acceptance

Overall GEI score:

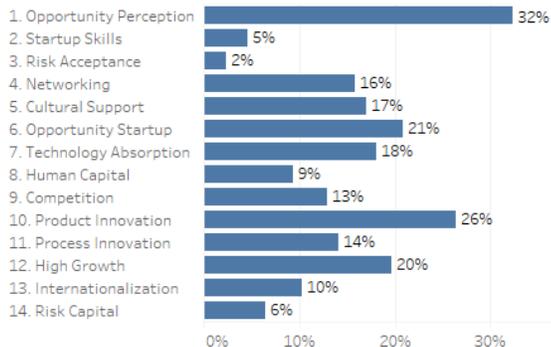


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Myanmar

Global Rank:  
127 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

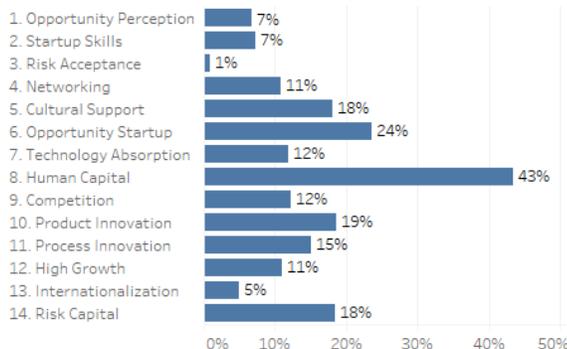


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



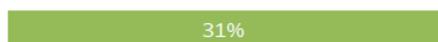
## Namibia

Global Rank:  
61 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

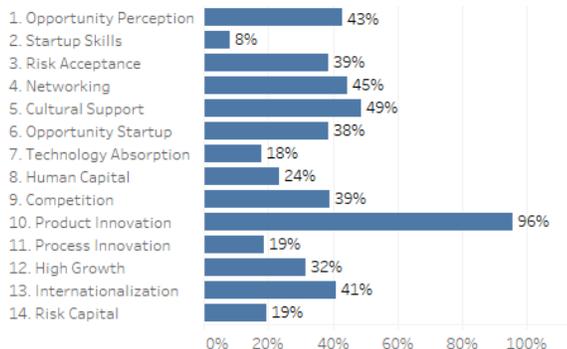


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Netherlands

Global Rank:  
11 of 137

Strongest area:  
Cultural Support

Weakest area:  
Human Capital

Overall GEI score:

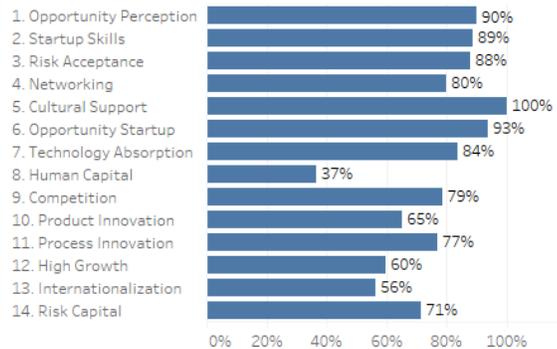


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Nicaragua

Global Rank:  
122 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

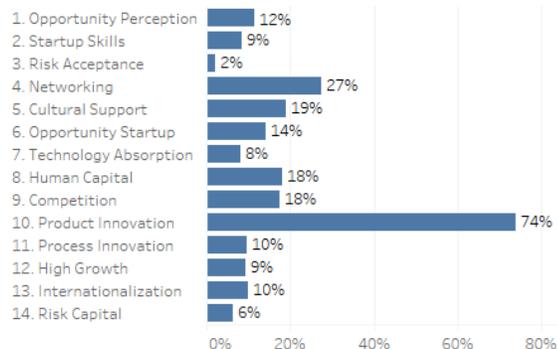


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Nigeria

Global Rank:  
101 of 137

Strongest area:  
Human Capital

Weakest area:  
Opportunity Startup

Overall GEI score:

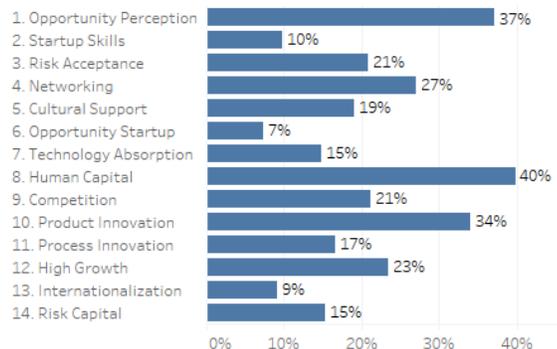


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Norway

Global Rank:  
21 of 137

Strongest area:  
Opportunity Perception; Cultural Support; Opportunity Startup

Weakest area:  
Product Innovation

Overall GEI score:

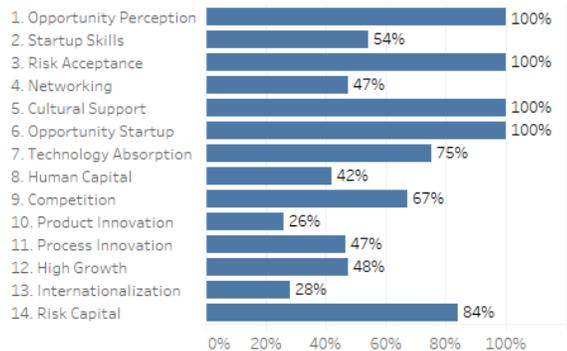


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



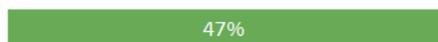
## Oman

Global Rank:  
33 of 137

Strongest area:  
Risk Capital

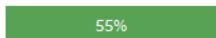
Weakest area:  
Competition

Overall GEI score:

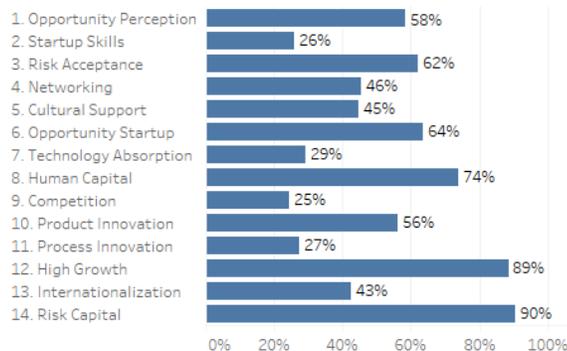


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Pakistan

Global Rank:  
120 of 137

Strongest area:  
Product Innovation

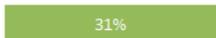
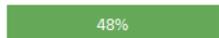
Weakest area:  
Risk Acceptance

Overall GEI score:

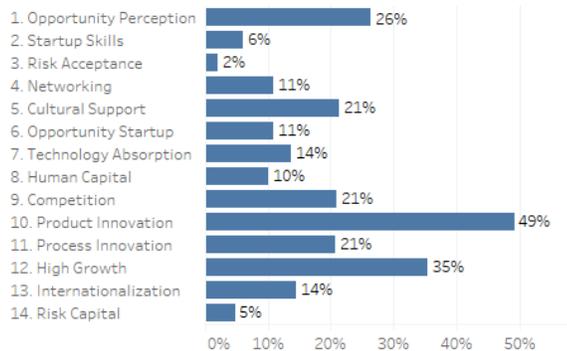


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Panama

Global Rank:  
70 of 137

Strongest area:  
Product Innovation

Weakest area:  
Technology Absorption

Overall GEI score:

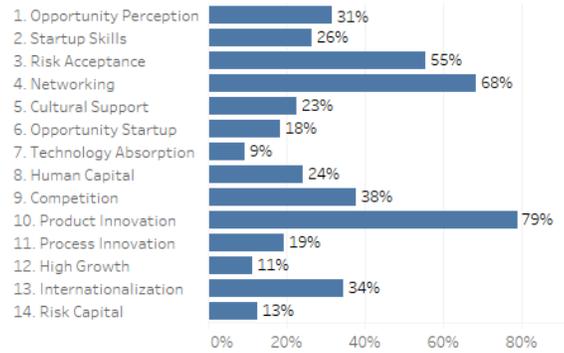


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Paraguay

Global Rank:  
106 of 137

Strongest area:  
Product Innovation

Weakest area:  
Process Innovation

Overall GEI score:

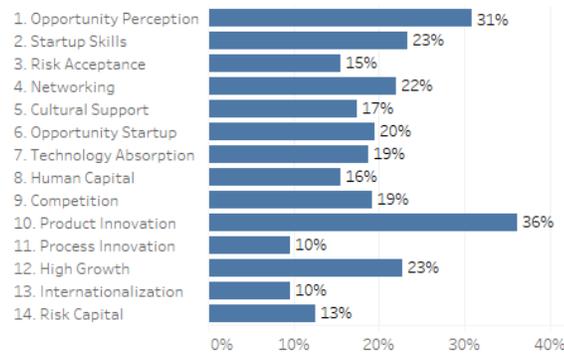


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Peru

Global Rank:  
67 of 137

Strongest area:  
Networking

Weakest area:  
Process Innovation

Overall GEI score:

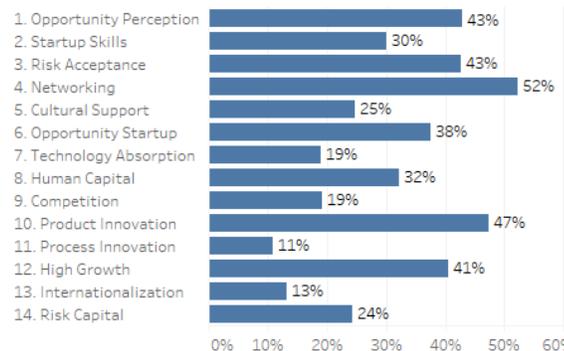


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Philippines

Global Rank:  
84 of 137

Strongest area:  
Product Innovation

Weakest area:  
Technology Absorption

Overall GEI score:

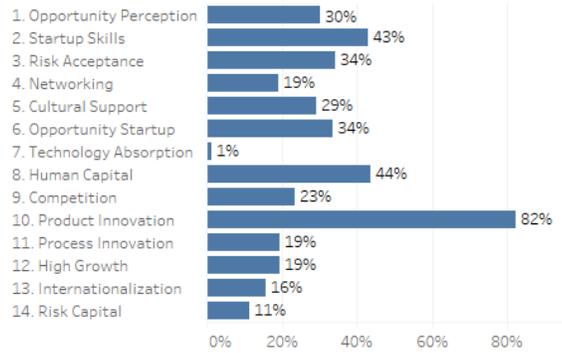


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Poland

Global Rank:  
30 of 137

Strongest area:  
Product Innovation

Weakest area:  
Competition

Overall GEI score:

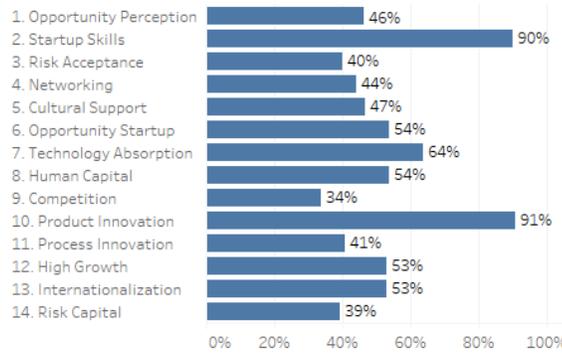


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Portugal

Global Rank:  
31 of 137

Strongest area:  
Internationalization

Weakest area:  
Networking

Overall GEI score:

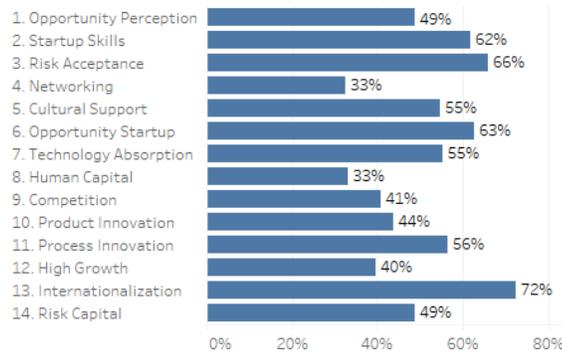


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Puerto Rico

Global Rank:  
41 of 137

Strongest area:  
Human Capital

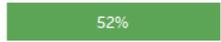
Weakest area:  
Risk Capital

Overall GEI score:

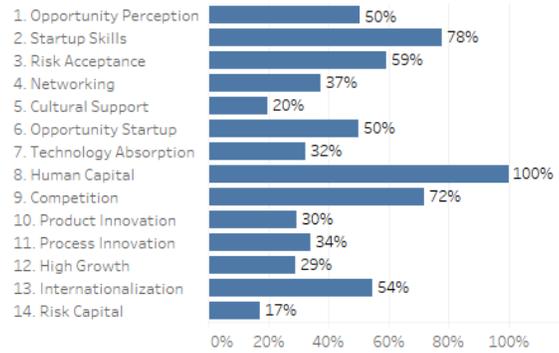


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Qatar

Global Rank:  
22 of 137

Strongest area:  
High Growth

Weakest area:  
Startup Skills

Overall GEI score:

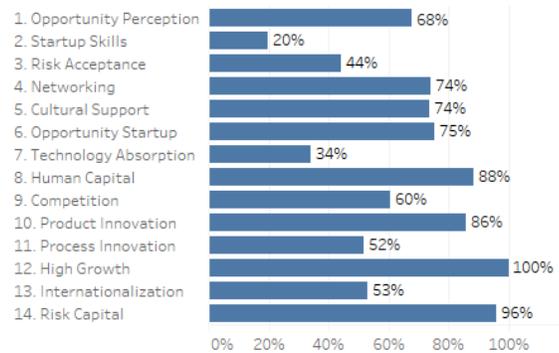


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Romania

Global Rank:  
46 of 137

Strongest area:  
Risk Capital

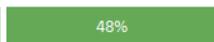
Weakest area:  
Networking

Overall GEI score:

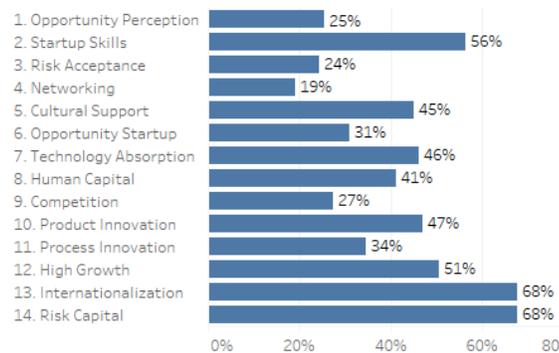


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Russia

Global Rank:  
78 of 137

Strongest area:  
Human Capital

Weakest area:  
Internationalization

Overall GEI score:

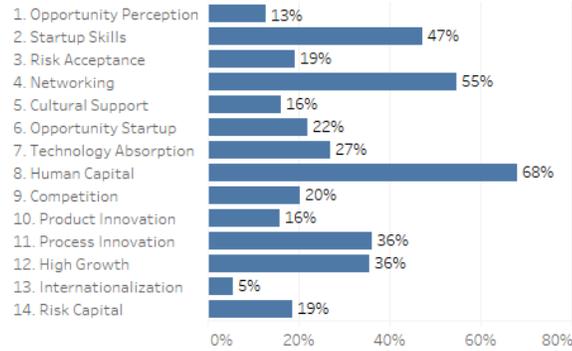


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Rwanda

Global Rank:  
91 of 137

Strongest area:  
Cultural Support

Weakest area:  
Risk Capital

Overall GEI score:

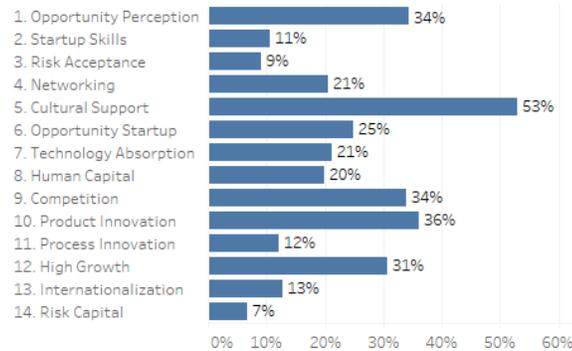


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Saudi Arabia

Global Rank:  
45 of 137

Strongest area:  
Networking

Weakest area:  
Technology Absorption

Overall GEI score:

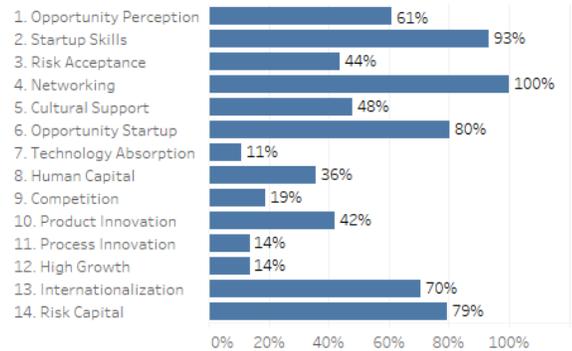


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Senegal

Global Rank:  
103 of 137

Strongest area:  
Cultural Support

Weakest area:  
Product Innovation

Overall GEI score:

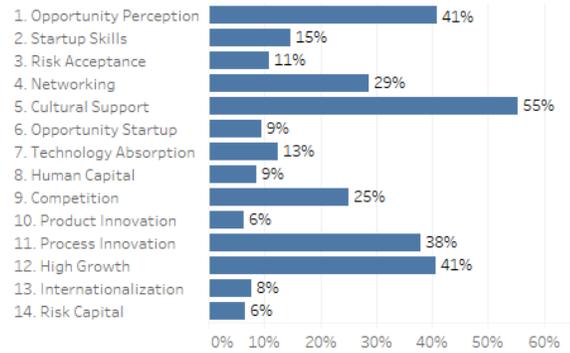


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Serbia

Global Rank:  
74 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

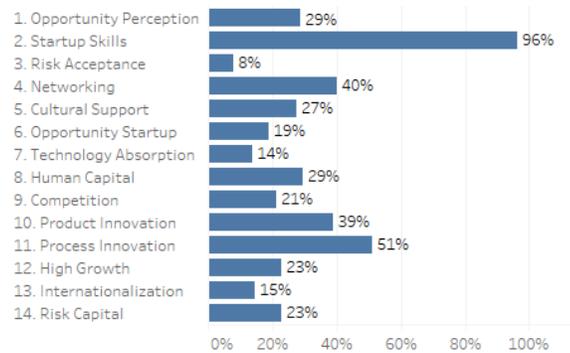


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Sierra Leone

Global Rank:  
132 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

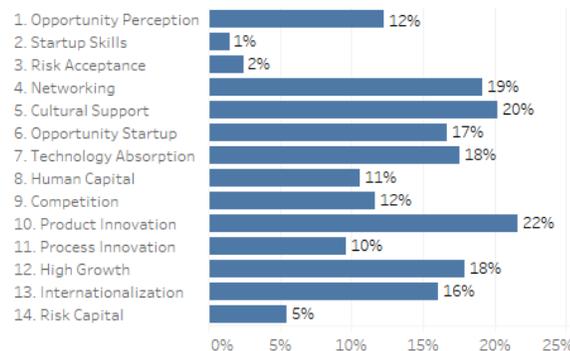


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Singapore

Global Rank:  
27 of 137

Strongest area:

Opportunity Startup; Human Capital; Process Innovation; High Growth; Internationalization

Weakest area:

Startup Skills

Overall GEI score:

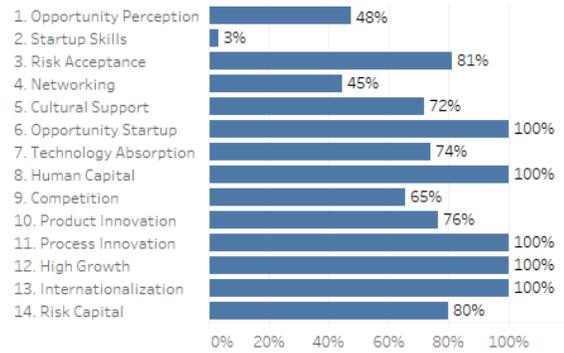


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Slovakia

Global Rank:  
36 of 137

Strongest area:

Internationalization

Weakest area:

Competition

Overall GEI score:

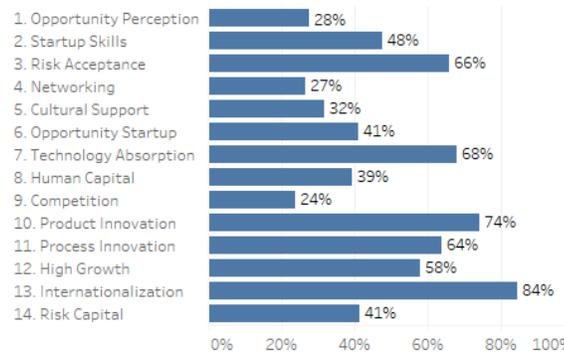


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Slovenia

Global Rank:  
25 of 137

Strongest area:

Startup Skills

Weakest area:

Networking

Overall GEI score:

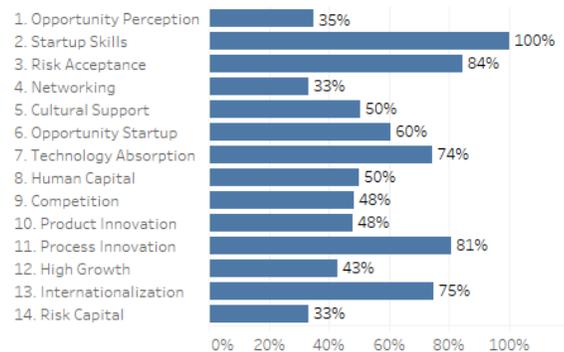


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## South Africa

Global Rank:  
57 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

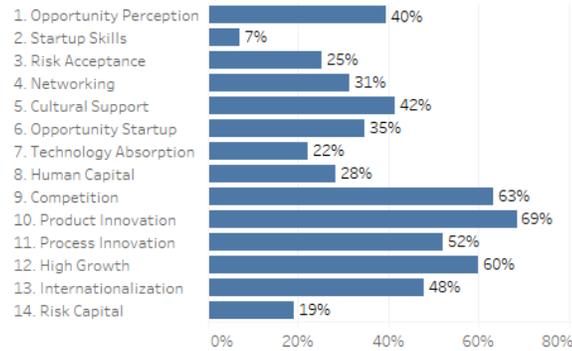


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



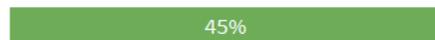
## Spain

Global Rank:  
34 of 137

Strongest area:  
Startup Skills

Weakest area:  
Internationalization

Overall GEI score:

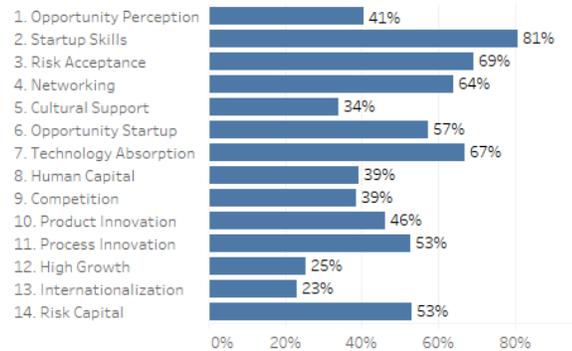


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Sri Lanka

Global Rank:  
90 of 137

Strongest area:  
Product Innovation

Weakest area:  
Technology Absorption

Overall GEI score:

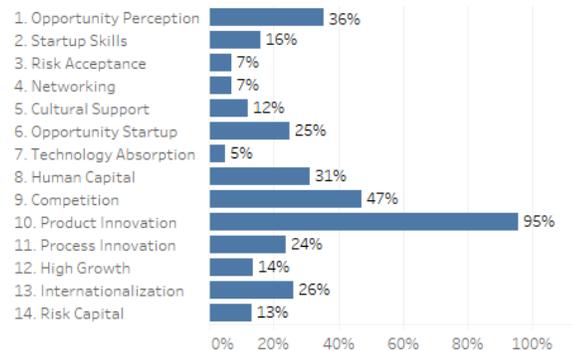


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Suriname

Global Rank:  
111 of 137

Strongest area:  
Networking

Weakest area:  
Technology Absorption

Overall GEI score:

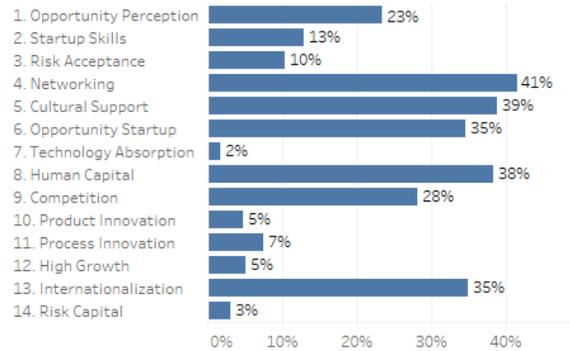


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Swaziland

Global Rank:  
86 of 137

Strongest area:  
Risk Capital

Weakest area:  
Startup Skills

Overall GEI score:

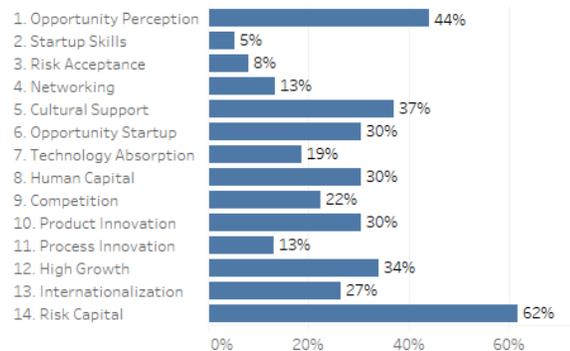


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Sweden

Global Rank:  
9 of 137

Strongest area:  
Opportunity Perception

Weakest area:  
Startup Skills

Overall GEI score:

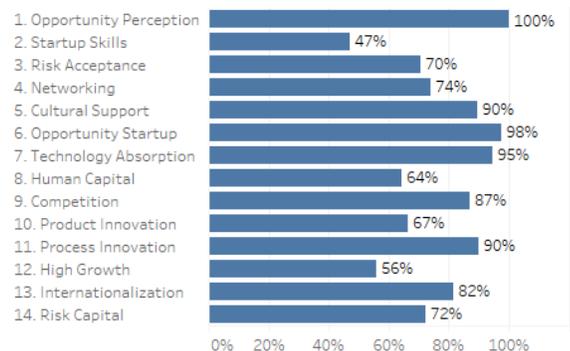


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Switzerland

Global Rank:  
2 of 137

Strongest area:  
Technology Absorption; Competition;  
Internationalization; Risk Capital

Weakest area:  
Networking

Overall GEI score:

80%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

71%

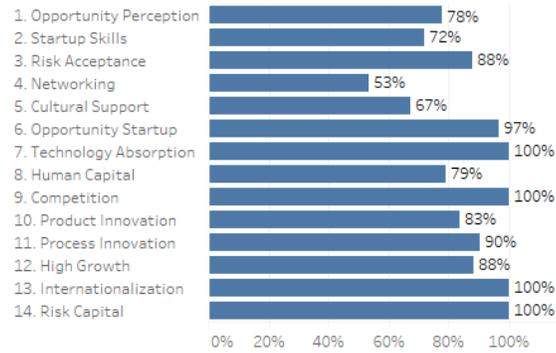
94%

Scores

0% 100%



Component scores



## Taiwan

Global Rank:  
18 of 137

Strongest area:  
Product Innovation

Weakest area:  
Competition

Overall GEI score:

59%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

64%

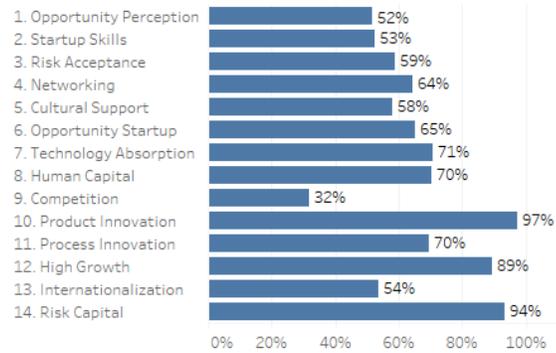
79%

Scores

0% 100%



Component scores



## Tajikistan

Global Rank:  
99 of 137

Strongest area:  
Human Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

20%

Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship

54%

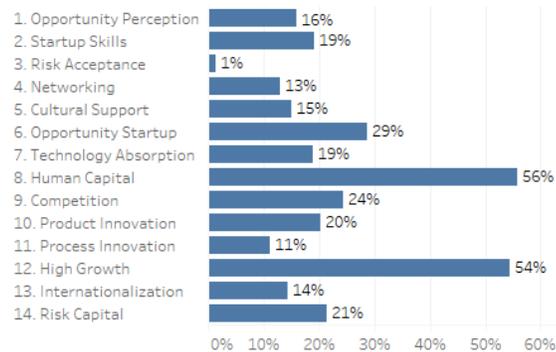
37%

Scores

0% 100%



Component scores



## Tanzania

Global Rank:  
115 of 137

Strongest area:  
Product Innovation

Weakest area:  
Startup Skills

Overall GEI score:

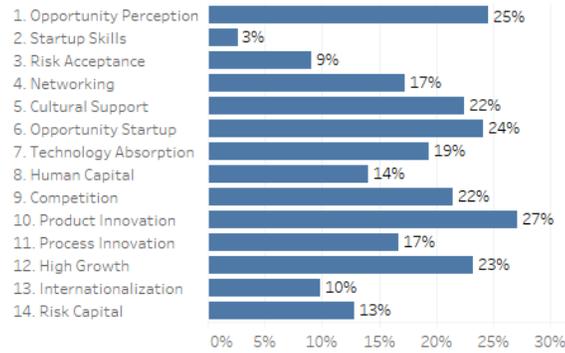


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Thailand

Global Rank:  
71 of 137

Strongest area:  
Human Capital

Weakest area:  
Internationalization

Overall GEI score:

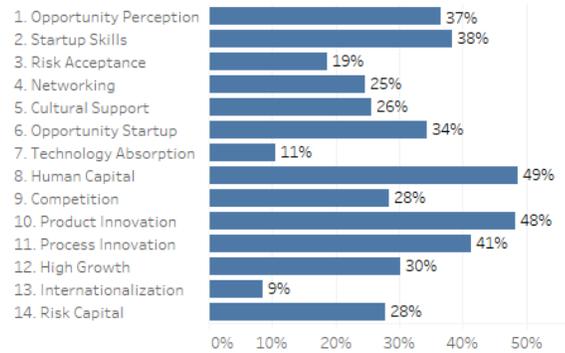


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Trinidad & Tobago

Global Rank:  
81 of 137

Strongest area:  
Risk Acceptance

Weakest area:  
Networking

Overall GEI score:

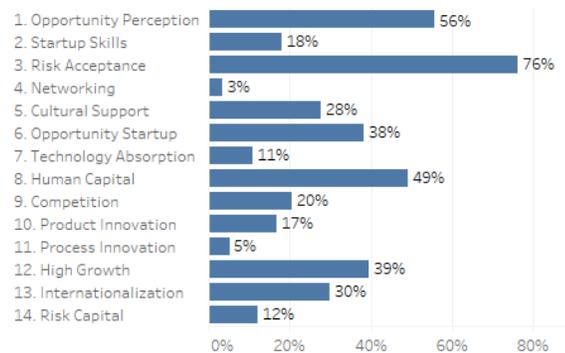


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Tunisia

Global Rank:  
40 of 137

Strongest area:  
Risk Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

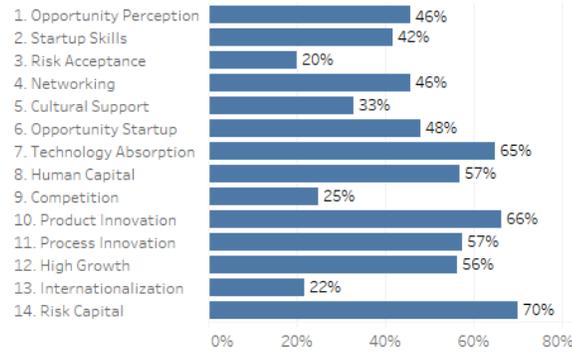


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Turkey

Global Rank:  
37 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Acceptance

Overall GEI score:

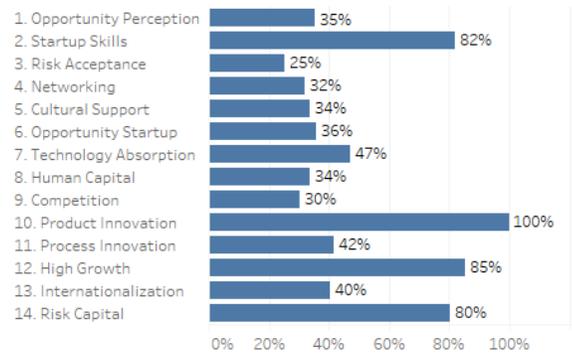


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Uganda

Global Rank:  
131 of 137

Strongest area:  
Opportunity Startup

Weakest area:  
Startup Skills

Overall GEI score:

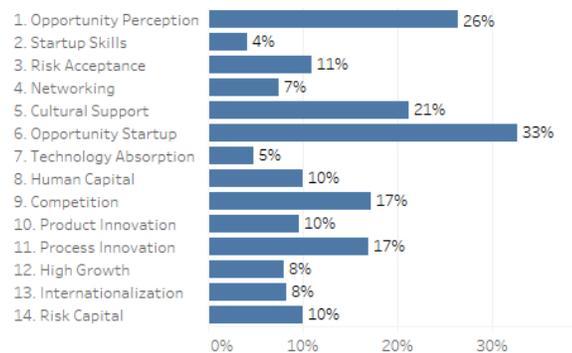


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Ukraine

Global Rank:  
73 of 137

Strongest area:  
Startup Skills

Weakest area:  
Risk Acceptance

Overall GEI score:

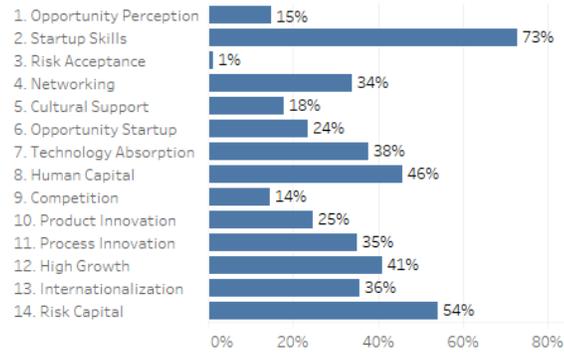


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## United Arab Emirates

Global Rank:  
26 of 137

Strongest area:  
Networking; Product Innovation

Weakest area:  
Technology Absorption

Overall GEI score:

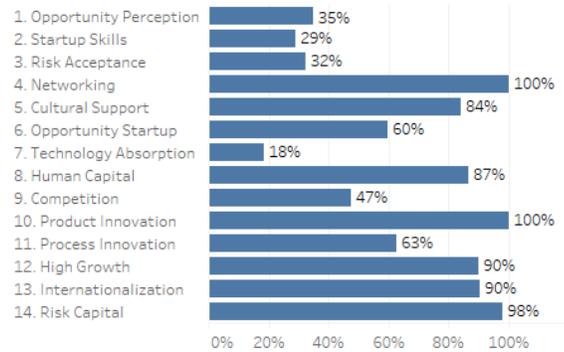


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## United Kingdom

Global Rank:  
4 of 137

Strongest area:  
Technology Absorption

Weakest area:  
Startup Skills

Overall GEI score:

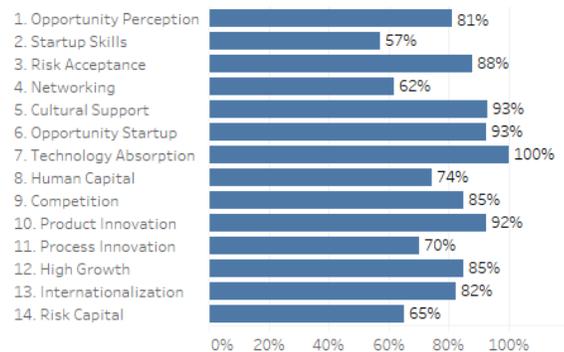


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## United States

Global Rank:  
1 of 137

Strongest area:  
Startup Skills; Human Capital;  
Competition; High Growth;  
Internationalization

Weakest area:  
Networking

Overall GEI score:

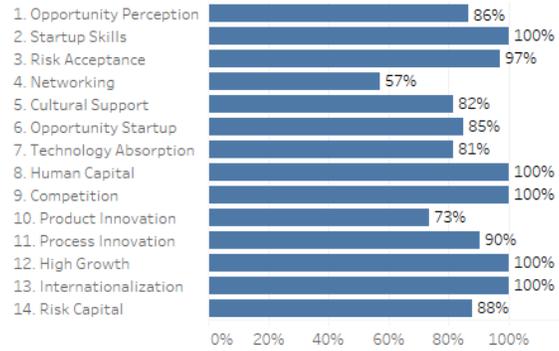


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Uruguay

Global Rank:  
51 of 137

Strongest area:  
Product Innovation

Weakest area:  
Risk Capital

Overall GEI score:

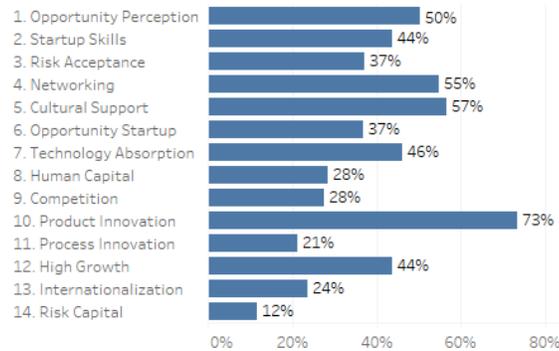


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



## Venezuela

Global Rank:  
126 of 137

Strongest area:  
Startup Skills

Weakest area:  
Opportunity Startup

Overall GEI score:

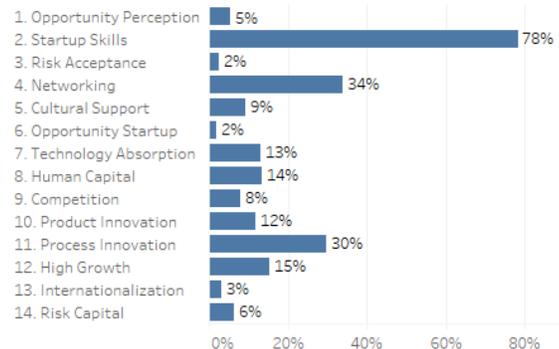


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Vietnam

Global Rank:  
87 of 137

Strongest area:  
Risk Capital

Weakest area:  
Risk Acceptance

Overall GEI score:

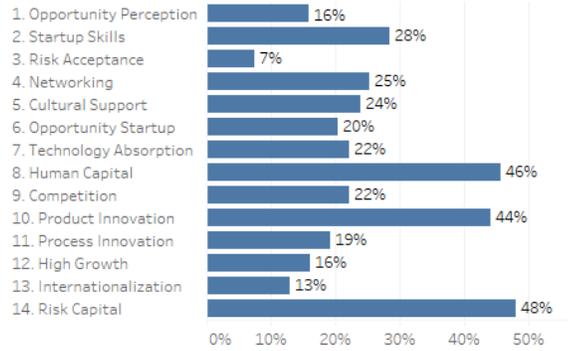


Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores



# Zambia

Global Rank:  
102 of 137

Strongest area:  
Internationalization

Weakest area:  
Startup Skills

Overall GEI score:



Individual score:  
entrepreneurial qualities of  
the people in the ecosystem

Institutional score:  
quality of the institutions  
that support  
entrepreneurship



Component scores

