



ASIAN DEVELOPMENT OUTLOOK 2022 UPDATE

ENTREPRENEURSHIP IN THE DIGITAL AGE

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ADB

Developing Asia's growth is softening

Growth is forecast to weaken in East and South Asia but improve in the other subregions

GDP growth, %

	2022		2023			2022		2023	
	Apr ADO 2022	Sep Update	Apr ADO 2022	Sep Update		Apr ADO 2022	Sep Update	Apr ADO 2022	Sep Update
Developing Asia (DA)	5.2	4.3 ↓	5.3	4.9 ↓					
DA excluding the PRC	5.5	5.3 ↓	5.8	5.3 ↓	Caucasus & Central Asia	3.6	3.9 ↑	4.0	4.2 ↑
					Kazakhstan	3.2	3.0 ↓	3.9	3.7 ↓
East Asia	4.7	3.2 ↓	4.5	4.2 ↓	Southeast Asia	4.9	5.1 ↑	5.2	5.0 ↓
Hong Kong, China	2.0	0.2 ↓	3.7	3.7 —	Indonesia	5.0	5.4 ↑	5.2	5.0 ↓
People's Rep. of China	5.0	3.3 ↓	4.8	4.5 ↓	Malaysia	6.0	6.0 —	5.4	4.7 ↓
Republic of Korea	3.0	2.6 ↓	2.6	2.3 ↓	Philippines	6.0	6.5 ↑	6.3	6.3 —
Taipei, China	3.8	3.4 ↓	3.0	3.0 —	Singapore	4.3	3.7 ↓	3.2	3.0 ↓
South Asia	7.0	6.5 ↓	7.4	6.5 ↓	Thailand	3.0	2.9 ↓	4.5	4.2 ↓
India	7.5	7.0 ↓	8.0	7.2 ↓	Viet Nam	6.5	6.5 —	6.7	6.7 —
					The Pacific	3.9	4.7 ↑	5.4	5.5 ↑

Notes: Data for India are on fiscal year basis, with FY2022 ending 31 March 2023. ↑ = forecast increased, ↓ = forecast decreased, — = no change.

Source: Asian Development Outlook database.

Entrepreneurs contribute to economic dynamism and resilience

- Sustained economic growth depends on a vibrant private sector, which depends on the emergence of entrepreneurs who start and run businesses.
- Innovative entrepreneurs matter more at middle income, when growth is increasingly driven by innovation.
- On-going digitalization of economy has opened up many opportunities for entrepreneurs.

Innovative entrepreneurs often think outside the box and create useful products such as BioNTech COVID-19 vaccine.



Source: BioNTech2021 Sustainability Report.

Some entrepreneurs also contribute to sustainable development

- The positive impact of entrepreneurship extends to UN SDGs.
- Entrepreneurs are motivated by profit but their innovations contribute to sustainable development.
- Innovative entrepreneurs are valuable assets in the global quest for SDGs.

Thinking outside the box helps entrepreneurs like Boyan Slat of The Ocean Cleanup devise innovative solutions to

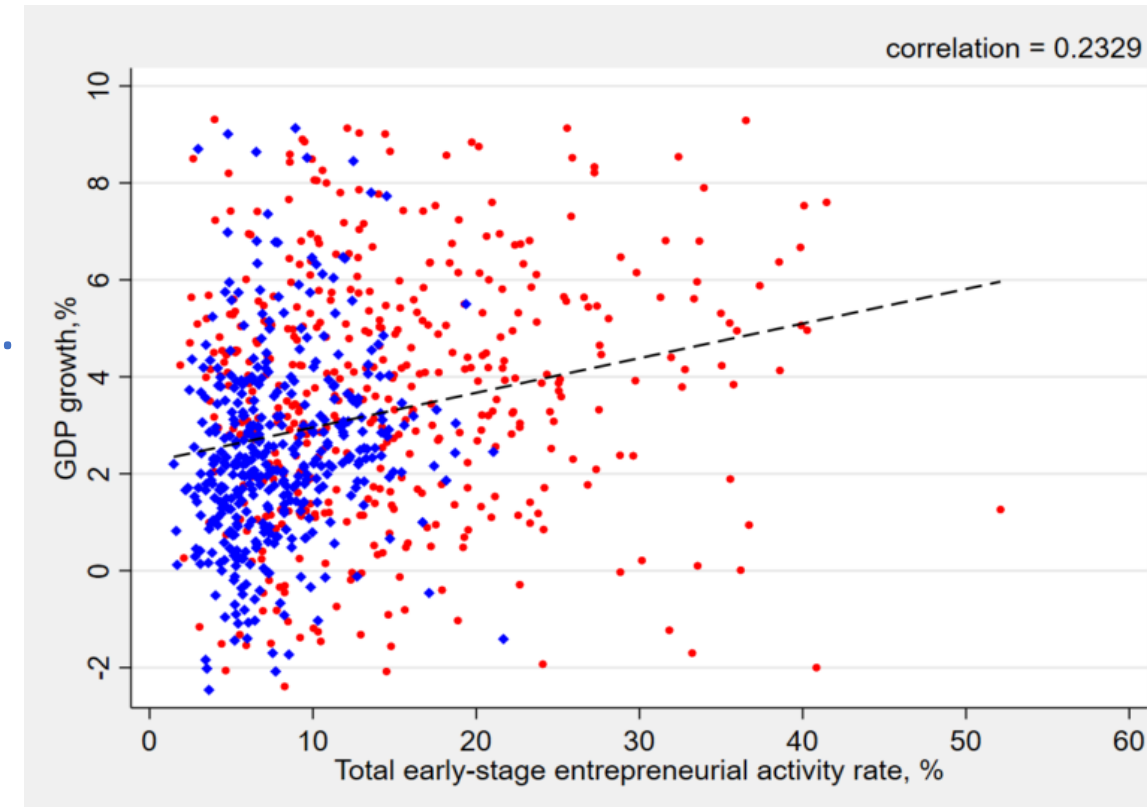


Source: enr.reset.org

Mixed evidence on entrepreneurship-growth link

- Empirical analysis shows that economic growth and total entrepreneurial activity is positively but insignificantly related.
- This finding is not surprising once given the heterogeneity and diversity of entrepreneurs.
 - Entrepreneurs range from street vendors to transformative innovators.
- Broadly speaking, we can divide entrepreneurs into opportunity-driven entrepreneurs versus necessity-driven entrepreneurs.

The relationship between total entrepreneurship and economic growth is positive but insignificant.



Source: Global Entrepreneurship Monitor (GEM) and World Bank

Some entrepreneurs are more productive than others

- Entrepreneurs are a highly diverse group, ranging from street food vendors to game-changing innovators.
- A small group of dynamic entrepreneurs contribute disproportionately to the economy.
- Those dynamic entrepreneurs are often innovators.

Few entrepreneurs account for the lion's share of jobs created by new businesses.

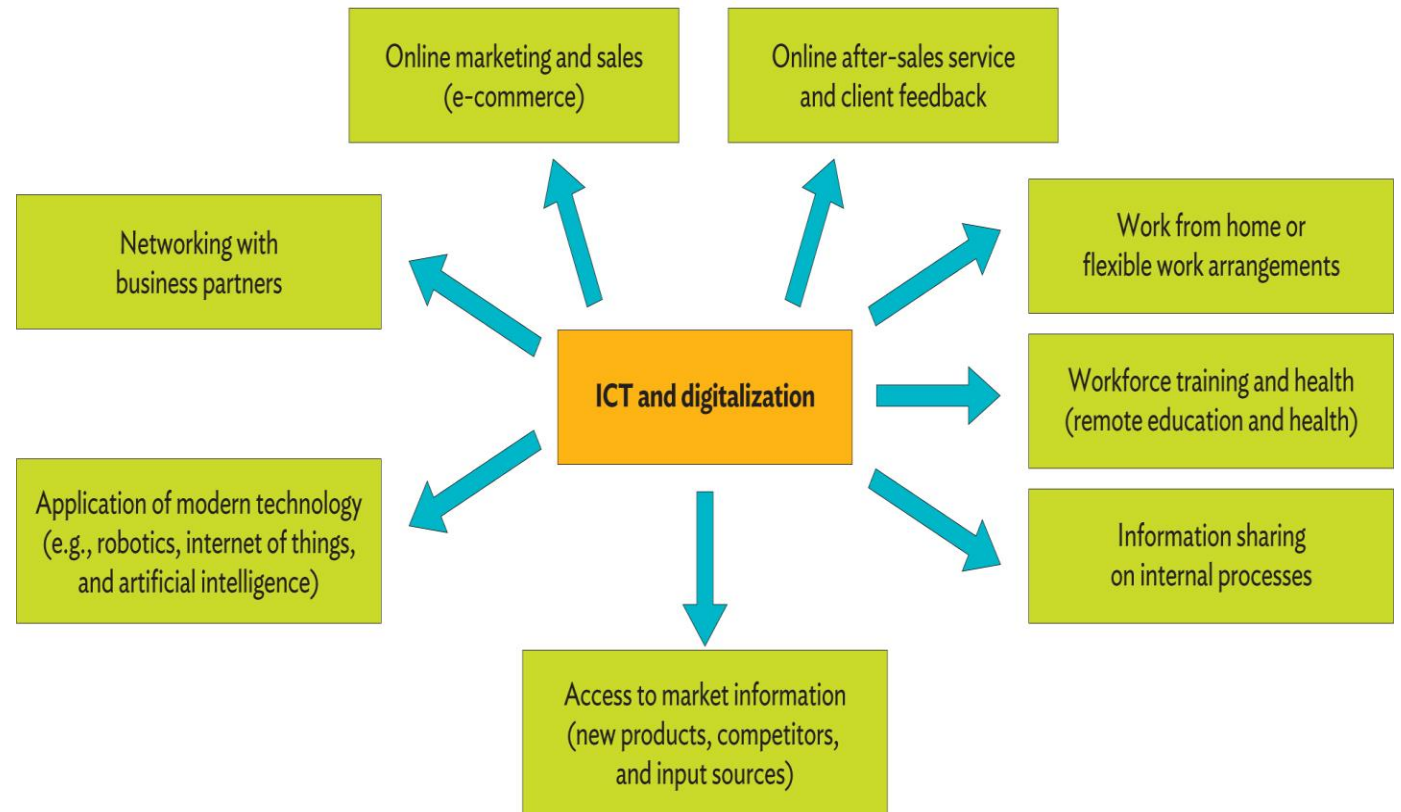
Firm Size (employees)	Number of firms	%	Total employees	%
250+	55	0.4	60,785	46.0
50-249	166	1.1	14,401	10.9
10-49	1,169	7.8	20,240	15.3
3-9	5,900	39.6	25,695	19.5
1-2	7,602	51.0	10,888	8.2
Total	14,892	100.0	132,009	100.0

Note: 14,892 firms are younger than 42 months old and they are from 17 ADB developing member countries (DMCs) for which data are available. Calculations from Global Entrepreneurship Monitor data. Source: Autio, E. and K. Fu. 2022. *Country-Level Institutional Conditions and Individual-Level Entrepreneurship Dynamics*. Asian Development Bank.

Digital technology lowers entry barriers to new firms

- ICT reduces the cost of starting a business by eliminating the need for physical retail space.
- The internet allows new firms to reach large numbers of potential customers, including overseas ones, at low cost.
- ICT expands opportunity landscape for entrepreneurs and also the avenues for pursuing opportunities.

Information and communication technology (ICT) and digitalization help entrepreneurs in many ways.

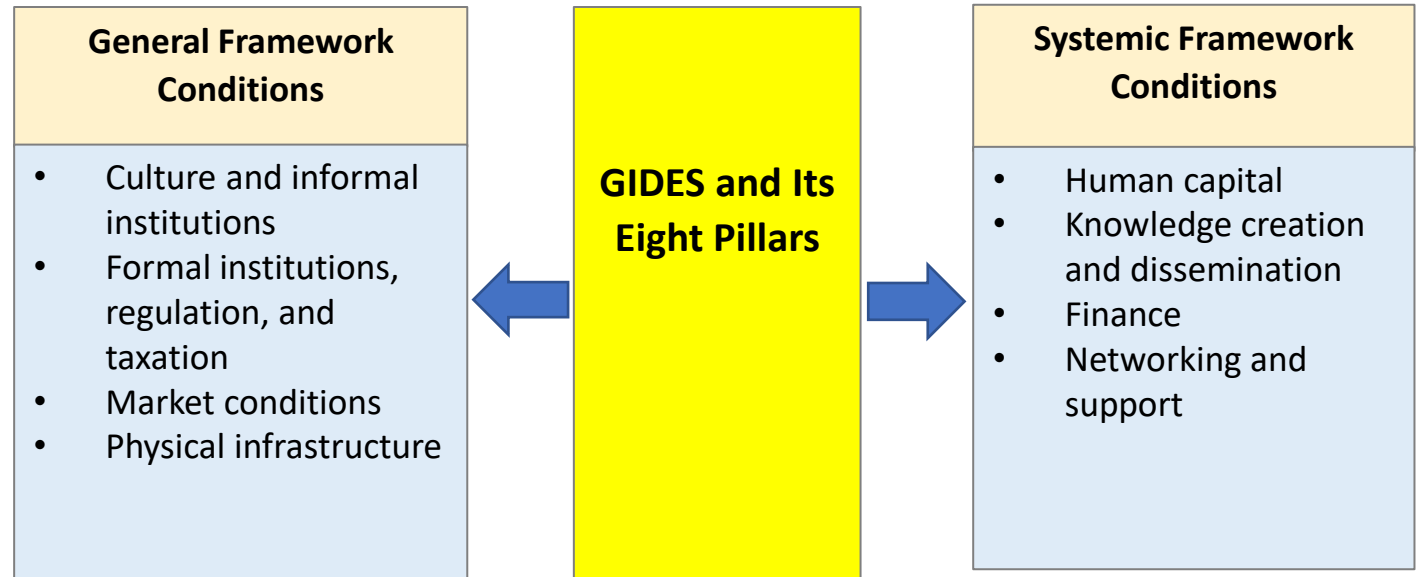


Source: Authors.

A new index rates environment for digital entrepreneurship

- Global Index of Digital Entrepreneurship System (GIDES) measures quality of an economy's environment for digital entrepreneurship.
- The index is constructed from eight pillars that capture diverse elements of the environment—culture, institutions, market conditions, infrastructure, human capital, knowledge, finance, and networking.
- The index allows for a meaningful comparison of 113 global economies.

Global Index of Digital Entrepreneurship System (GIDES) is based on 8 pillars, reflecting multi-dimensional nature of entrepreneurship.



Source: Autio, E. et al. 2022. *Asian Index of Digital Entrepreneurship Systems 2021*. Asian Development Bank.

Singapore tops the world in digital entrepreneurship environment

The quality of digital entrepreneurship environment tends to be better in more advanced economies.

- Singapore and 14 other advanced economies are the “leaders” group.
- The next group is 10 “followers”, followed by 15 “catchers-up”. The final two groups 32 “laggards”, and 41 “tailenders”.
- The average scores of the 5 groups are 71.2, 53.8, 39.1, 26.0, and 14.2, revealing a huge gap between groups.

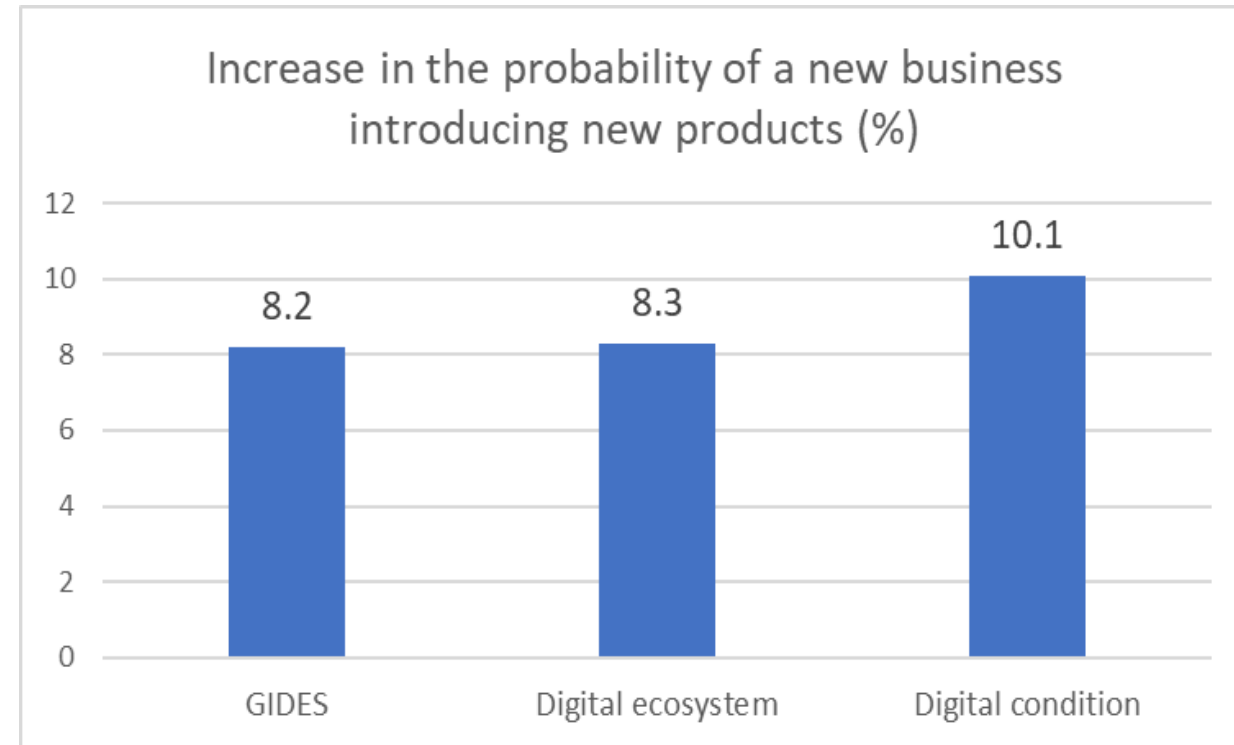
Economy	Stand-up system		Start-up system		Scale-up system		GIDES	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Singapore	79.8	2	83.6	1	80.4	1	81.3	1
United States	79.9	1	79.3	4	79.7	2	79.7	2
Sweden	78.3	4	82.3	2	78.2	3	79.6	3
Denmark	79.4	3	79.6	3	77.5	4	78.8	4
Switzerland	77.1	5	77.0	6	76.7	5	76.9	5
Netherlands	76.3	6	75.0	7	75.3	6	75.6	6
Finland	72.1	7	77.2	5	70.6	7	73.3	7
Norway	71.7	8	70.8	9	67.1	10	69.9	8
Luxembourg	69.1	10	71.8	8	67.8	9	69.6	9
United Kingdom	70.0	9	68.8	10	68.1	8	69.0	10
New Zealand	67.9	11	65.1	12	63.1	12	65.3	11
Germany	63.1	13	67.3	11	63.6	11	64.7	12
Canada	63.4	12	63.6	13	61.2	13	62.7	13
Australia	63.0	14	61.7	15	59.3	15	61.3	14
Austria	59.2	15	62.6	14	59.8	14	60.5	15

Source: Autio, E. et al. 2022. *Asian Index of Digital Entrepreneurship Systems 2021*. Asian Development Bank.

Sound digital environment fosters productive entrepreneurship

- Analysis of 190,000 entrepreneurs in 14 DMCs explored the link between GIDES and firm productivity.
- For new businesses, the digital entrepreneurship environment was positively linked with product innovation and job creation.
- For instance, a one-standard deviation increase in GIDES was associated with an 8.2 percentage point increase in the probability of a new business innovating.

The link between digital environment and entrepreneurial innovation is economically significant.



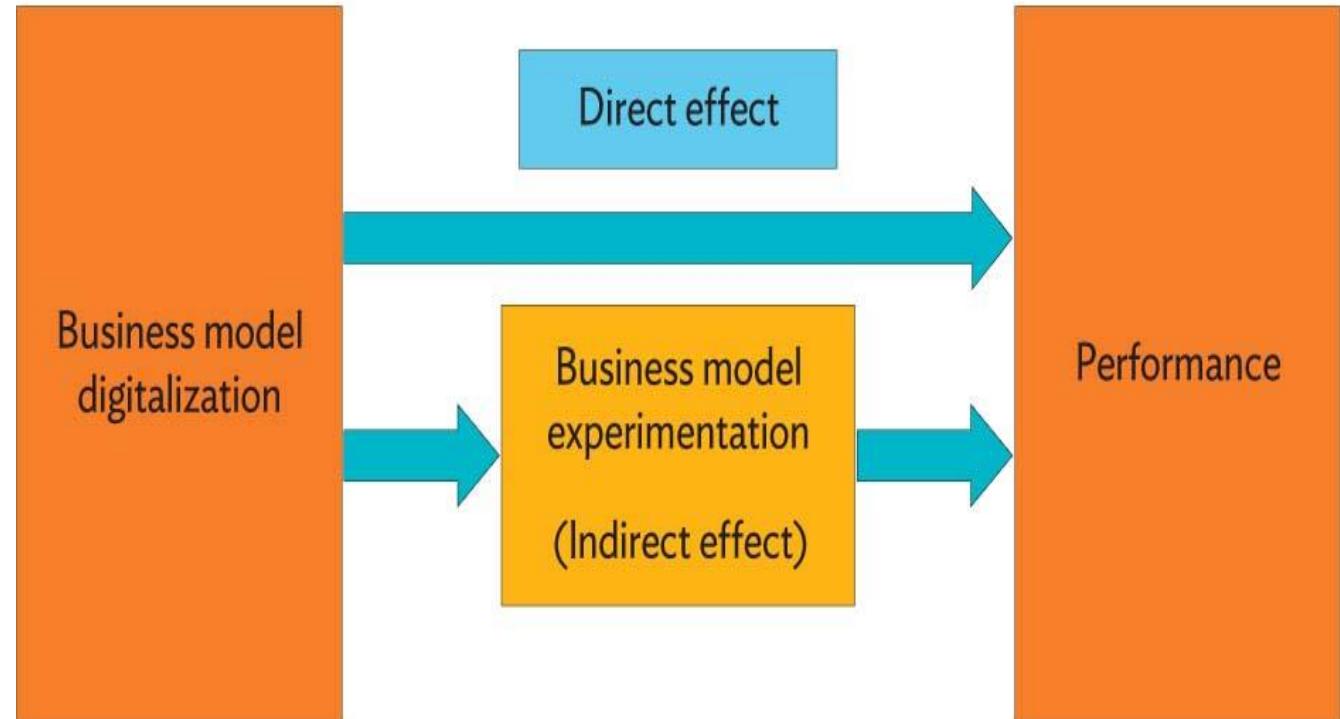
Estimates are statistically significant at 1 percent level. GIDES = Global Index of Digital Entrepreneurship Systems. Digital ecosystem and digital condition are two alternative measures of the digital environment. New businesses are businesses that are less than 42 months old.

Source: Autio, E. and K. Fu. 2022. *Digital Framework Conditions and the Productivity Potential of a Country's Entrepreneurial Dynamic: A Study of Selected ADB Member Economies*. Asian Development Bank.

Digital technology is fundamentally re-shaping entrepreneurship

- Digital technology is changing the very nature of entrepreneurship.
- Digitalization significantly expands the scope of entrepreneurial opportunity.
- Digitalization facilitates entrepreneurial experimentation, which enables greater innovation.

Digitalization affects entrepreneurial performance both directly and indirectly through experimentation.

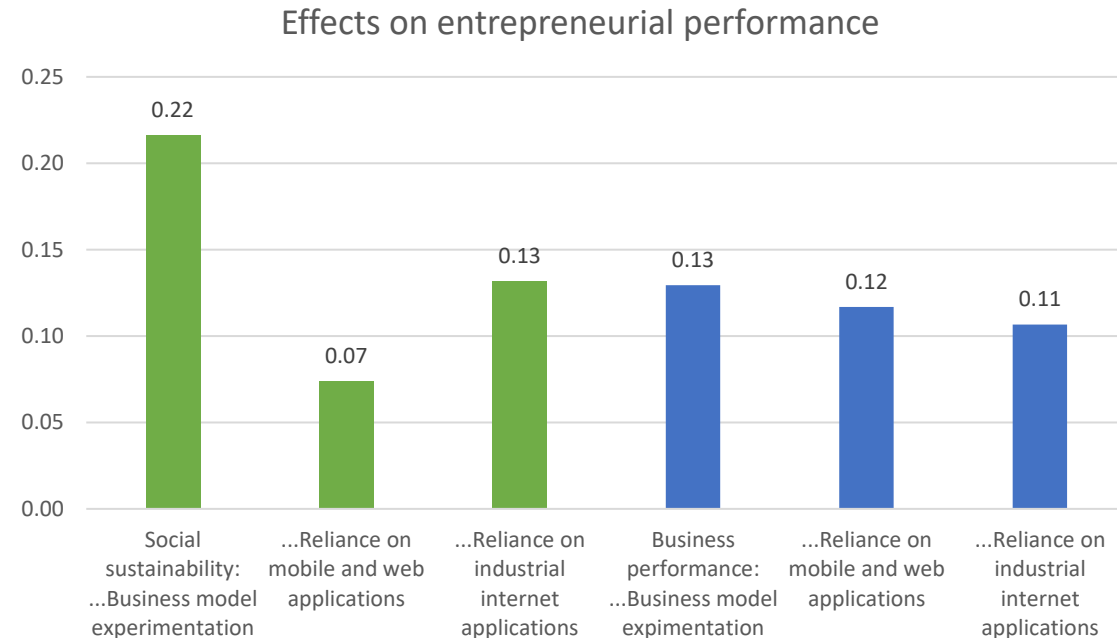


Source: Authors.

Digital entrepreneurs outperform nondigital peers

- We undertook an in-depth survey of 685 entrepreneurs in 6 ASEANs to assess the impact of digitalization on entrepreneurial performance.
- The survey indicated that digitalization is positively linked with business profitability and contribution to sustainability.
- In addition, the survey confirmed that digitalization is strongly associated with likelihood of experimentation.

Digitalization is positively linked with both business and sustainability performance.

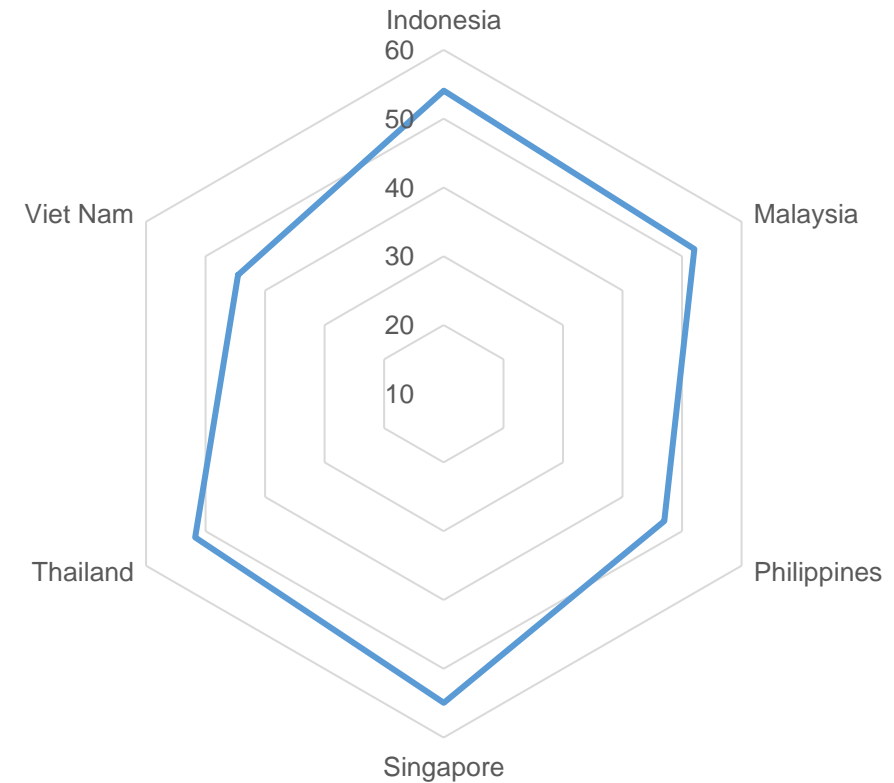


Source: Authors.

Entrepreneurs leverage digital technology in versatile ways

- Predictably, the entrepreneurial ecosystems of the six countries differ substantially.
- The entrepreneurs of the six countries have different relative strengths.
- Digital entrepreneurs have become active in a wide range of diverse industries across the subregion.

Singaporean entrepreneurs led the way in business model experimentation.

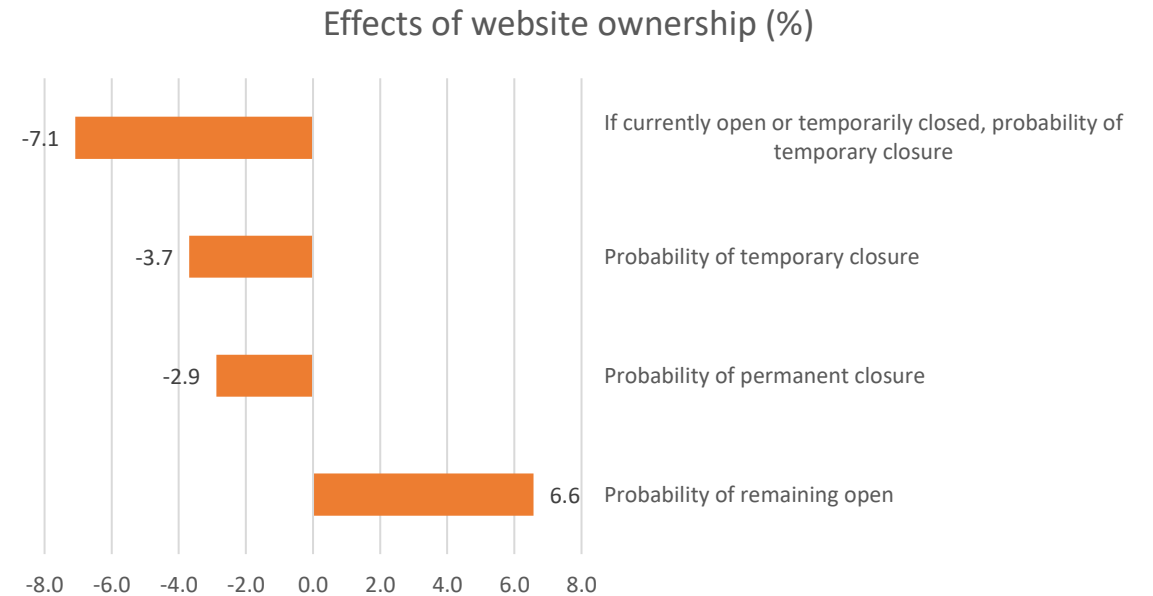


Source: Authors.

Digitalization helped entrepreneurs survive COVID-19

- ICT helped keep many entrepreneurs afloat during the pandemic.
- New analysis of 12,990 firms in 32 countries and 28 industries globally from May to September 2020 empirically confirms that more digitalized firms suffered less.
 - As the chart shows, they were less likely to shut down.
- Entrepreneurial resilience due to ICT, in turn, contributed to the resilience of the economy and society.

Entrepreneurs with websites were less likely to close during the pandemic.



Estimates are statistically significant at 1 percent level.

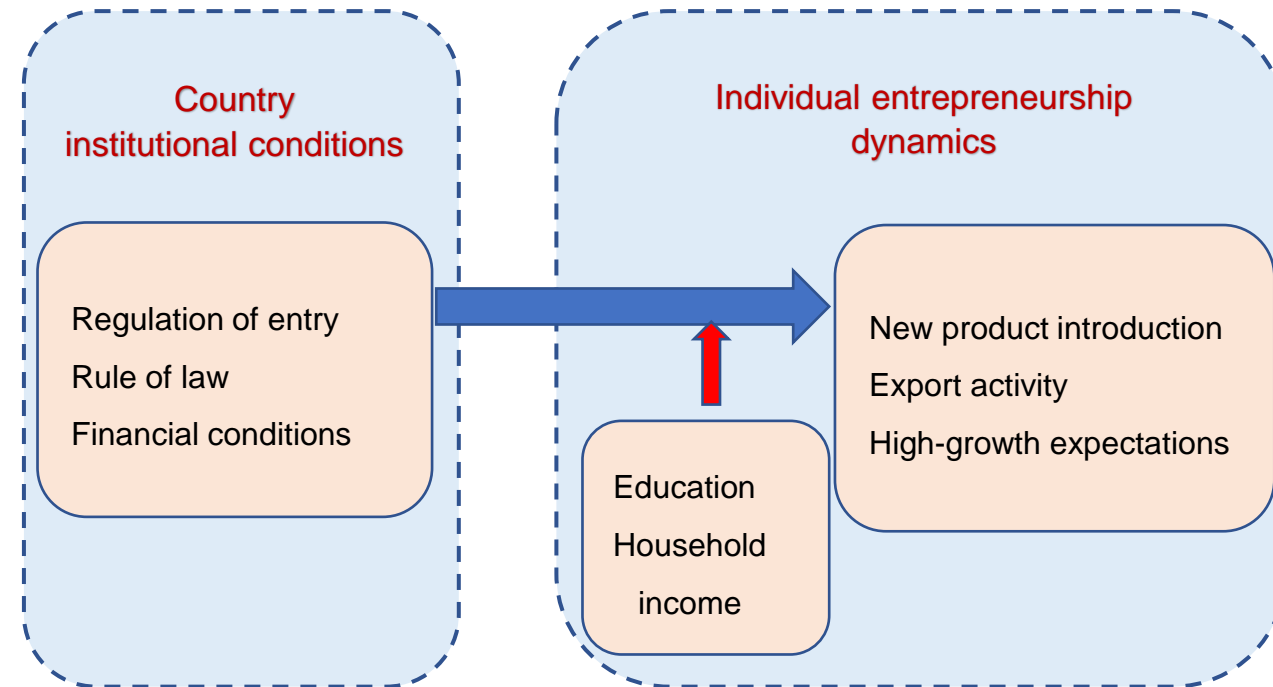
Notes: (i) There are two groups of control variables: (a) firm characteristics, including share of permanent, full-time production workers in unskilled jobs, growth rate of annual sales, firm size, firm age, firm ownership type, the type of main market for main product; and (b) country and industry-level factors, including daily economic support index, daily growth rate of new COVID-19 cases per million people, and sector type. (ii) The results for probit and ordered probit models are average marginal effects and are multiplied by 100. These are the changes in the probability of a firm closing its business when it owns a website.

Source: Vo, Le, and Park 2022.

Sound institutions mitigate risk and uncertainty for entrepreneurs

- Solid institutions create a conducive environment for entrepreneurs.
- Sound institutions such as strong property rights and reliable legal systems reduce the cost of starting and running a business.
- Intuitively, good institutions are beneficial for entrepreneurial activity because they mitigate the high risk and uncertainty that entrepreneurs face.

There is an economically significant link between country-level institutions and individual-level entrepreneurial productivity.

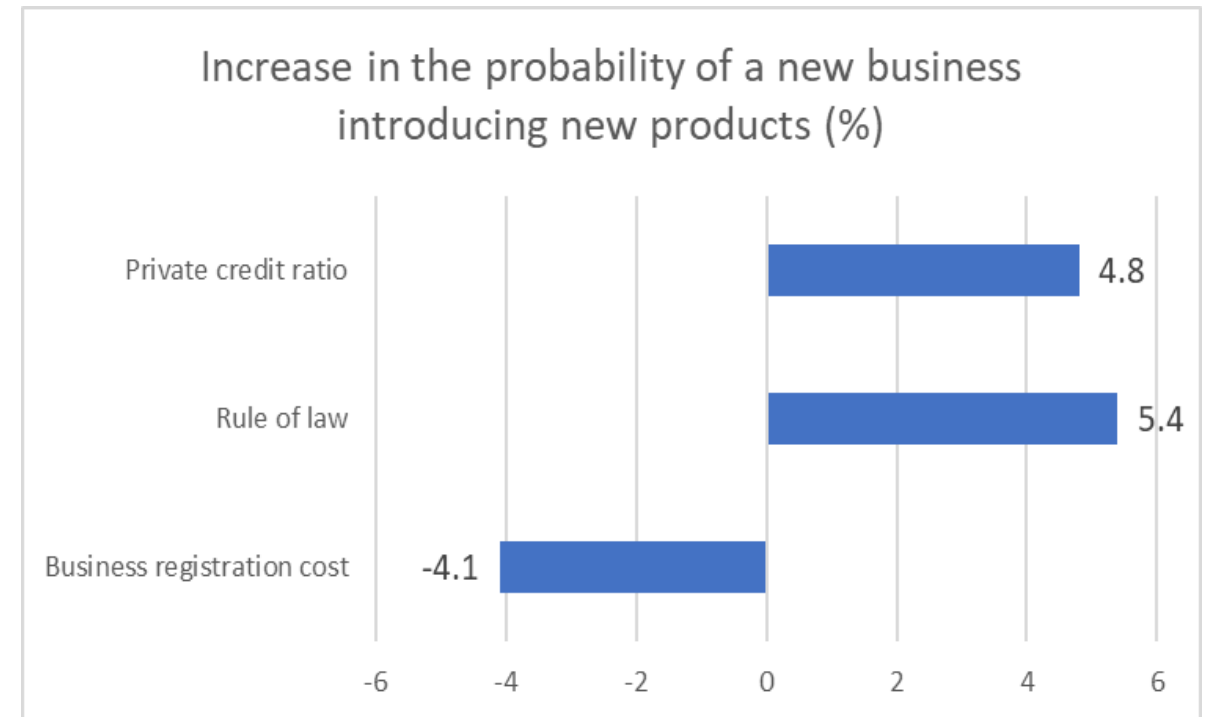


Source: Authors

New evidence confirms the important role of institutions

- Analysis of 230,000 individuals in 15 DMCs confirms a positive link between a country's institutional environment and productivity of its entrepreneurs.
- For instance, a one-standard deviation improvement in rule of law was associated with a 5.4 percentage point increase in the likelihood of product innovation by a new business.
- Lower business registration cost and higher financial development was also positively linked to productive entrepreneurship.

There is an economically significant link between country-level institutions and individual-level entrepreneurial productivity.



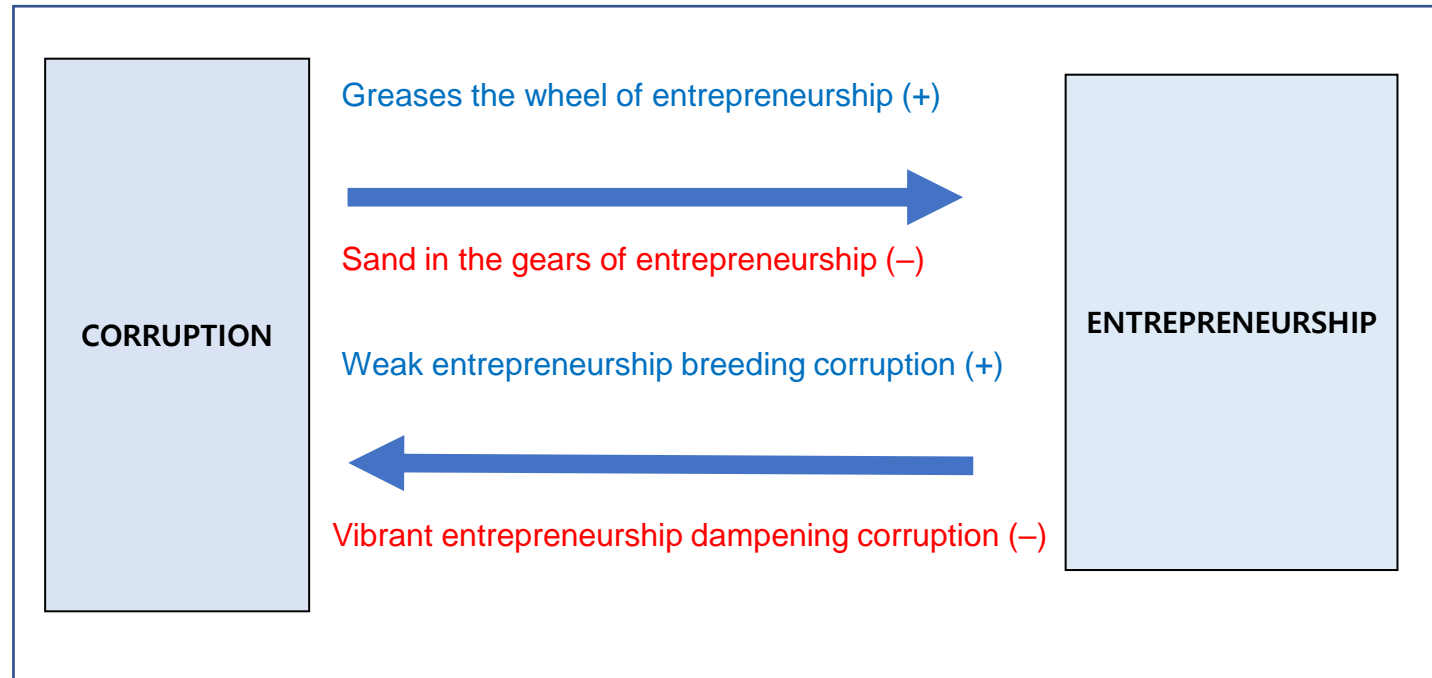
Estimates are statistically significant at 1 percent level. New businesses are businesses that are less than 42 months old. Business registration cost is in percent of per capita income. Rule of law is a measure of the extent to which individuals and firms have confidence in and abide by the rules of society. Private credit to GDP ratio is a proxy for financial development.

Source: Autio, E. and K. Fu. 2022. Country-Level Institutional Conditions and Individual-Level Entrepreneurship Dynamics. Asian Development Bank.

Corruption can encourage or discourage entrepreneurship

- Corruption can boost entrepreneurship by allowing entrepreneurs to get around excessive regulation.
- On the other hand, corruption can discourage entrepreneurship by reducing the reward from risk taking.
- Furthermore, there may be two-way causality between corruption and entrepreneurship because entrepreneurship can affect corruption.

Corruption can affect entrepreneurship, but entrepreneurship can also affect corruption.

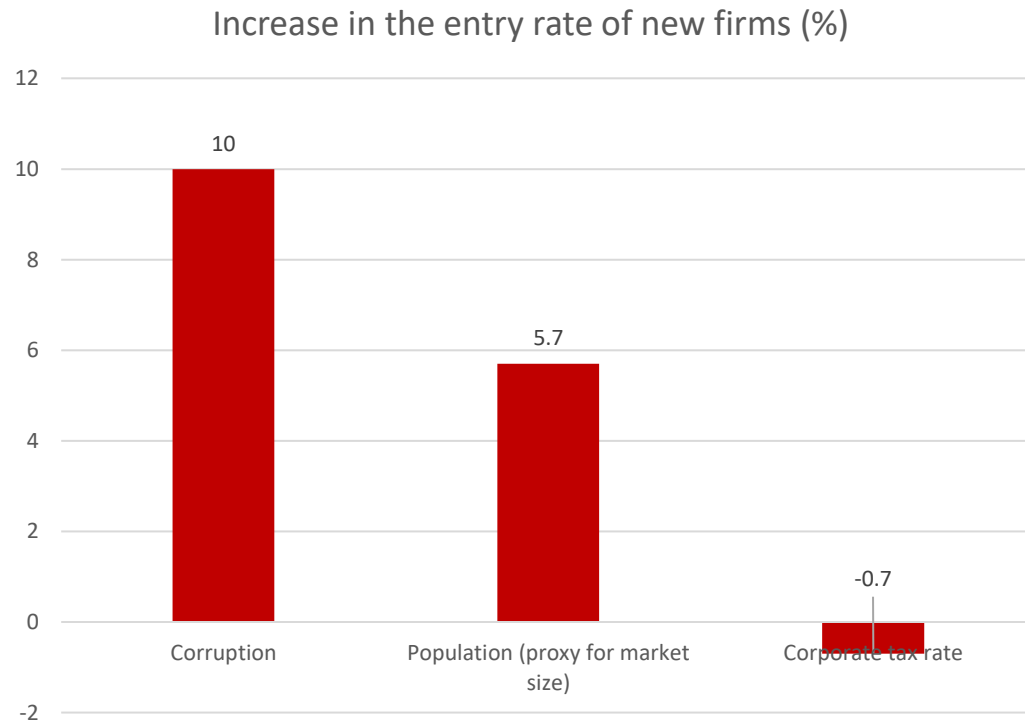


Source: Authors.

Corruption discourages entrepreneurship

- New cross-country empirical analysis confirms that corruption is significantly associated with lower entrepreneurship.
- A decrease in corruption by one standard deviation is associated with an increase in the entry of new entrepreneurs by as much as 10 percentage points.
- Furthermore, the result remains even after we control for potential two-way causality.

Reduction in corruption boosts the entry rate of new firms by as much as 10 percentage points.



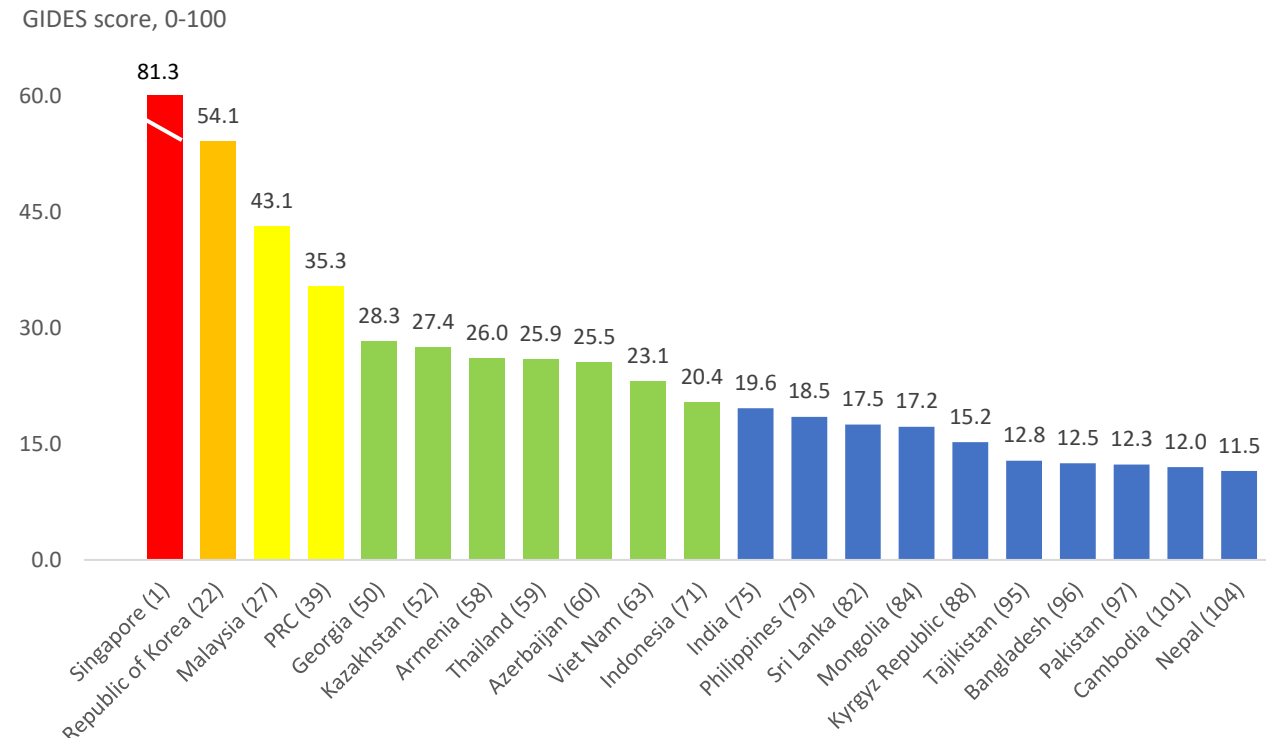
Source: Authors.

Region must improve environment for entrepreneurs

- Singapore, along with Korea, Malaysia, and the PRC, scored well in GIDES.
- But 17 out of 21 developing Asian countries that were measured by GIDES were in the bottom two tiers of GIDES scores.
- This suggests there is plenty of scope for improving the quality of the entrepreneurial climate across the region.

Digitally underdeveloped economies tend to have weaker legal systems for digital entrepreneurship.

GIDES 2021 score and global ranking



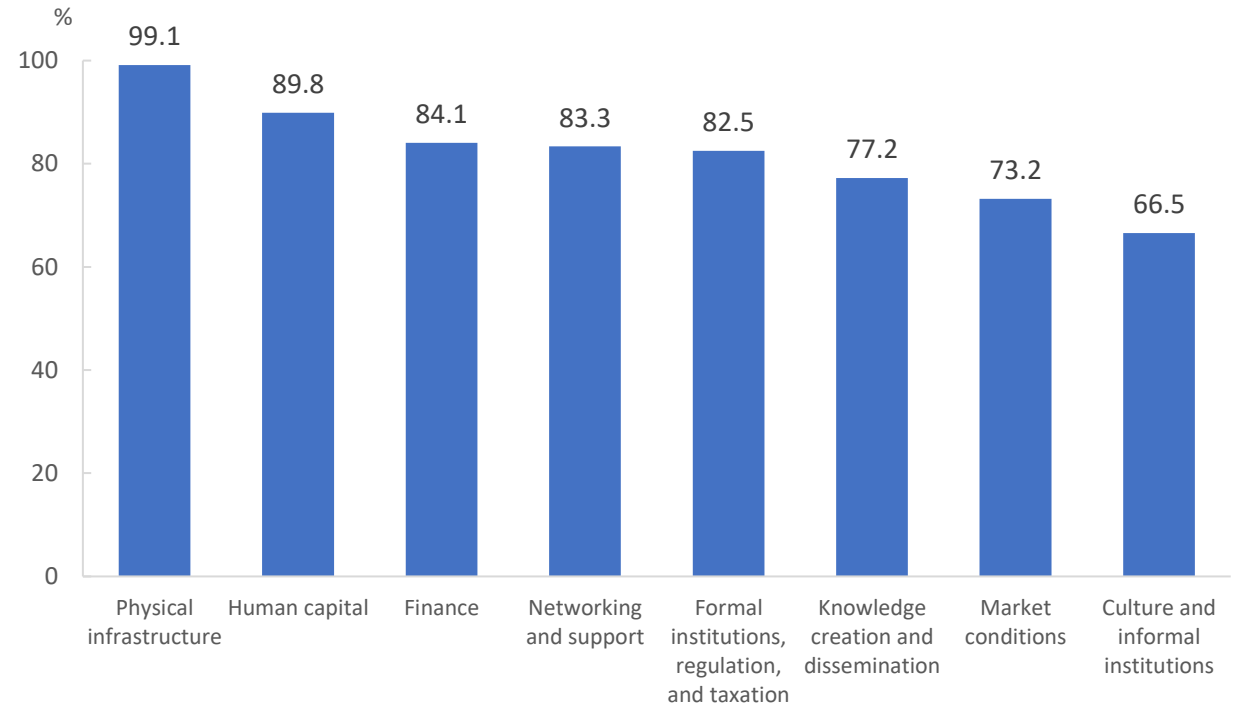
Source: Authors

Note: Red = leaders, orange = followers, yellow = catchers-up,

Broad policy mix is best for improving Asia's entrepreneurial climate

- Developing Asia's scores of the different GIDES pillars are relatively balanced.
- This suggests that a broad policy mix will have a bigger impact on entrepreneurial environment than focusing on any single policy area.
- The region scores the lowest on culture and informal institutions, which suggests a need to improve public perceptions of entrepreneurship through education.

On average, developing Asia performs the best on physical infrastructure and worst on culture and informal institutions.



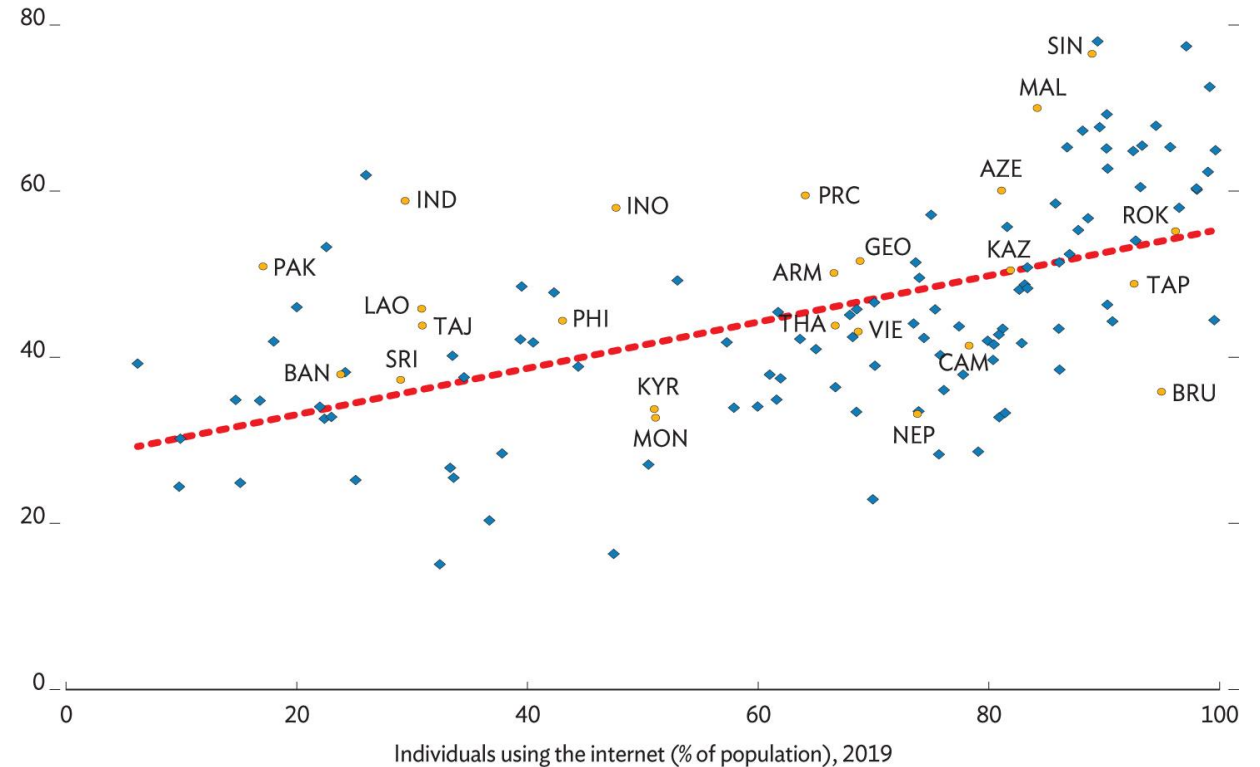
Source: Authors

Dynamic entrepreneurship rests on good hardware and software

- Policymakers cannot pick dynamic entrepreneurs, but they can create the right environment for them to grow.
- In particular, they can create the right digital and institutional environment which induces more innovative individuals to start businesses.
- Such an environment encompasses both hardware—e.g., high speed broadband network—and software—e.g., reliable dependable legal system.

Digitally underdeveloped economies tend to have weaker legal systems for digital entrepreneurship.

Legal framework adaptability score, 2019



Note: Scores derived from responses to the survey question: "In your country, how fast is the legal framework adapting to digital business models (e.g., e-commerce, sharing economy, fintech, etc.)?" [1 = not fast at all; 7 = very fast]. The score is from 0 to 100.

Source: Quising, P. and A. Ramayandi. 2022. *Entrepreneurship and Competition Policy*. Asian Development Bank.

Toward a more entrepreneurial Asia

- Entrepreneurship, including digital entrepreneurship, can be a vital engine of growth and development for Asia.
- In particular, dynamic entrepreneurs who innovate, create lots of jobs, and propel growth can level up the economy.
- Policy makers have plenty of scope to foster a more entrepreneurial Asia full of dynamic entrepreneurs, especially by creating a conducive digital and institutional environment.

Transformative entrepreneurs innovate, create lots of jobs, and propel growth.

