



Global
Entrepreneurship
Monitor
UAE



مندوق خليفة لتطوير المشاريع
Khalifa Fund for Enterprise Development

ABU DHABI ENTREPRENEURIAL ECOSYSTEM INDEX

UNITED ARAB EMIRATES
2019 / 2020



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دبي، الإمارات العربية المتحدة
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UAEU

جامعة الإمارات العربية المتحدة
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منتزه جامعة الإمارات للعلوم والابتكار
UAEU SCIENCE & INNOVATION PARK
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**Global
Entrepreneurship
Monitor
UAE**

SPECIAL REPORT

UNITED ARAB EMIRATES
2019 / 2020

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Disclaimers:

Although GEM data were used in the preparation of this report, their interpretation and use are the sole responsibility of the authors. The authors would like to express their gratitude to all participating GEM 2019/20 national teams for their crucial role in conducting the GEM survey in their respective economies. The usual disclaimer applies. The authors would like to extend special thanks to Forrest Wright and GEM Data Team for their contribution to the data-collection procedures and data analysis.

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The United Arab Emirates University (UAEU) is the first and foremost comprehensive national university in the United Arab Emirates. Founded in 1976 by the late Sheikh Zayed Bin Sultan Al Nahyan, UAEU aspires to become a comprehensive, research-intensive university and currently enrolls approximately 13,000 Emirati and international students. As the UAE's flagship university, UAEU offers a full range of accredited, high-quality graduate and undergraduate programs through nine Colleges: Business and Economics; Education; Engineering; Food and Agriculture; Humanities and Social Sciences; IT; Law; Medicine and Health Sciences; and Science. With a distinguished international faculty, state-of-the-art new campus, and full range of student support services, UAEU offers a living-learning environment that is unmatched in the UAE.

In its drive to achieve international research stature, UAEU works with its partners in industry to provide research solutions to challenges faced by the nation, the region, and the world. The University has established research centers of strategic importance to the country and the region which are advancing knowledge in critical areas ranging from water resources to cancer treatments. UAEU has

also established in 2016 a Science and Innovation Park which aspires to become a global hub for research, innovation and entrepreneurship to foster the transitioning of the UAE economy towards a Knowledge Economy. UAEU is currently ranked #5 in the Arab World and #284 worldwide.

UAEU's academic programs have been developed in partnership with employers, so our graduates are in high demand. UAEU alumni hold key positions in industry, commerce, and government throughout the region. Our continuing investments in facilities, services, and staff ensure that UAEU will continue to serve as a model of innovation and excellence.



مندوقة خليفة لتطوير المشاريع
Khalifa Fund for Enterprise Development

The Khalifa Fund is an independent, not-for-profit development organisation of the Abu Dhabi Government. The Khalifa Fund's vision is to create a prosperous and innovative entrepreneurial ecosystem, through the mission of raising entrepreneurs' and SMEs' efficiency by building capabilities, unlocking financing and service options, integration with different stakeholders and advocating the entrepreneurial culture.

The Khalifa Fund is undertaking the responsibility of providing a wide range of training sessions to help entrepreneurs and SMEs improve and enhance their business skills and competitiveness. These training programmes are hosted on a regular basis, available virtually, and are open to all who wish to start a new business or develop their existing businesses. Training programmes are regularly updated based on the latest market trends and needs of entrepreneurs.

The Khalifa Fund provides financial support to SMEs and entrepreneurs through three main programmes: Khutwa (micro), supporting small entrepreneurs, up to AED 250,000; Bedaya (start-up), supporting new start-ups in a wide range of sectors, up to AED 1,500,000; and Zeyada (expansion), supporting existing and established SMEs who want to expand, up to AED 2,500,000. Moreover, the Khalifa Fund actively provides various business support services

such as support letters, event participation, new procurement opportunities, promotional co-branding, networking forums, and marketing support.

By end of 2020, number of activated loans by the Fund reached 1,163 since its inception. The activated loans were valued at AED 1.32 billion.

The Khalifa Fund's legacy of supporting entrepreneurs and SMEs continued in 2020 through the organisation of 36 workshops promoting entrepreneurship, which brought the total to 1014 workshops, and over 19,600 trained entrepreneurs more than 65% of them are women. Additionally, 2,263 new applications were received in 2020, totalling 30,000 applications, third of them are women. Throughout last year, the Khalifa Fund continued supporting national and international supporting projects, through strategic partnerships that supported the transfer of knowledge and economic growth in the UAE and internationally in 22 countries.

Despite challenges presented by COVID-19, the Khalifa Fund continued to successfully operate by establishing multiple major initiatives, such as: the e-Empower Initiative, which helps UAE SMEs to fully digitalise their businesses on industry leading e-commerce platforms such as Amazon.ae, Noon.com; and Akshak. She Means Business, a women's entrepreneur online training programme, with Facebook as the official partner; the Franchise Initiative, which saw multiple Khalifa Fund applicants expand their businesses globally; The Khalifa Fund Venturist Entrepreneurship Summer Camp, which focused on developing youth in the entrepreneurship sector; the SME Rating platform, which aids Khalifa Fund counsellors in helping SMEs and entrepreneurs improve on their ranking from services, to quality of products and market competitiveness; and the COVID-19 SME Impact Report, which highlighted economic challenges, business challenges and opportunities as a result of the pandemic. KF efforts during 2020 resulted in generating sales for its projects around half billion dirhams. KF proudly announced the launch of AI Mentor in collaboration with StartAD. A ground-breaking Artificial Intelligence platform with a diverse range of digital tools and resources for entrepreneurs during the business planning phase.

The United Arab University (UAEU) is the leading University of the UAE and a precinct of innovation that actively applies research for community impact. Through its Science and Innovation Park, the University is currently developing significant initiatives to support transforming Al Ain into a learning region and knowledge-based territorial economy. The new strategic plan of the Science and Innovation Park also supports the coordinated effort by the Emirate leadership, authorities and ecosystem players to transform Abu Dhabi to become home for more native scientific and technological focused businesses, knowledge, and highly skilled job opportunities, a dynamic and diversified economic activity and to attract more Foreign Direct Investments (FDI).

With this goal in mind, the UAEU as the institution leading the Global Entrepreneurship Monitor studies in the UAE since 2016, partnered with the Khalifa Fund for Enterprise Development in 2019 to study of the Abu Dhabi regional entrepreneurial ecosystem. The goal is to benchmark it against other regions worldwide and developing data to guide policy making and practice.

This study is also signaling to the world that Abu Dhabi is committed to entrepreneurship and innovation. The Emirate leadership has increasingly invested in various programs and incentives to attract talents, support R&D activities, and create the ecosystem conditions for entrepreneurs to thrive and contribute to Abu Dhabi's vision of building a knowledge economy.

GEM UAE believes that this special report will open-up new opportunities for collaboration with ecosystem players in the other Emirates to produce similar reports and provide the leadership with meaningful information about their regional ecosystems that could support evidence-based policy making and advancing entrepreneurship in the whole UAE.

The UAEU would like to extend its most sincere appreciation to its partner the Khalifa Fund for Enterprise Development, as well as its partners from industry and other educational institutions for their outstanding participation in this project and their commitment to support entrepreneurialism in the Emirate. To all those who actively engaged in the creation of this special report, we say "Many thanks for your efforts and dedication".



Prof. Nihel Chabrak
GEM UAE Team Leader

As an organization that's dedicated to the advancement of the entrepreneurial ecosystem in the Emirate of Abu Dhabi in particular and in the UAE in general, it is with great pleasure that the Khalifa Fund for Enterprise Development are partnering with the Global Entrepreneurship Monitor - UAE Team, to present the GEM ENTREPRENEURIAL ECOSYSTEM INDEX (ESI) report.

A central aspect of our ambition is the need to focus on, and thus, further advance our entrepreneurial performance on a global scale, as well as increase the contribution of SMEs to the non-oil GDP.

The Khalifa Fund are a prominent and leading figure in spearheading these efforts, ensuring that our leadership's directives are met and achieved. The Khalifa Fund has historically been an organization dedicated and devoted to the enhancement of Abu Dhabi's entrepreneurial ecosystem, developing a vast array of specialized programs, workshops, initiatives, training, guidance, and funding support.

Throughout 2019 and 2020, the Khalifa Fund has extended itself past its traditional means and has further exemplified how innovation will lead to a future full of promise and potential. The Khalifa Fund's forward-thinking efforts have led the way in making it possible for Abu Dhabi to be evaluated under the GEM Entrepreneurial Ecosystem Index (GEM-ESI). GEM-ESI is an undeniably useful tool for entrepreneurs and the ecosystem in which they operate. The GEM-ESI report considers the most important variables and factors which make up a thriving ecosystem, such as: networking, leadership, financing, talent, knowledge, support services, institutions, culture, infrastructure, and demand.

Fortunately, in Abu Dhabi we are supported by a fantastic physical infrastructure for entrepreneurship, as well as a rich culture that admires, respects and supports those that enter entrepreneurial endeavors.

Abu Dhabi's leadership has increasingly invested into promoting entrepreneurship, the SME sector, and the entire non-oil economy. I believe this is very much reflected in the insightful, resourceful and fascinating data presented in the GEM-ESI report.



Mouza Al Nasri
Acting CEO, Khalifa Fund

Moving forward, I look forward to utilizing the GEM-ESI data and building strategic plans that will further propel our entrepreneurial ecosystem forward both in the short-term as well as over the coming 50 years.

To conclude, I'd like to share my gratitude and appreciation to H.H. Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE and H.H. Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, for their generous support of the Khalifa Fund and their constant guidance towards entrepreneurship in the UAE.

I would also like to thank H.E. Mohammed Ali Al Shorafa, Chairman of the Khalifa Fund, for his support towards enabling the Khalifa Fund to operate as the leading SME development organization in the region.

I'd like also to thank all the dedicated parties that are taking an active role in advancing our entrepreneurial ecosystem. Thank you to all our strategic partners and stakeholders that continuously support our endeavours in making Abu Dhabi amongst leading entrepreneurial destinations in the world.

My vast appreciation also goes to the GEM UAE team for producing this report, which will undoubtedly prove to be an important resource to entrepreneurs in Abu Dhabi.

Executive summary

Abu Dhabi has a moderately high-quality entrepreneurial ecosystem, consistent with the good positioning it obtains in world rankings more generally for entrepreneurship. Overall, the Emirate is a favorable environment to develop innovative and high growth entrepreneurship. In particular, its physical infrastructure, culture, talent, networking, and demand stand out as its strengths. However, to improve the entrepreneurial ecosystem, stakeholders need to pay attention to the financing, formal institutions, leadership, support services, and knowledge.

1

Physical infrastructure

Abu Dhabi excels in the provision of physical infrastructure, with both physical and telecommunications infrastructure perceived as highly supportive of entrepreneurship, along with adequate access to physical space. However, the accessibility and affordability of both office space and telecommunications could be improved.

2

Culture

Culture is a strength of the Abu Dhabi entrepreneurial ecosystem, with many people considering becoming entrepreneurs and with entrepreneurship perceived as a favorable career choice with an average fear of failure. There is a high level of status and respect for entrepreneurs, with most people in Abu Dhabi being supportive, although large established firms appear to be less supportive.

3

Talent

Talent is one of the strengths of the Abu Dhabi entrepreneurial ecosystem, with employees seen as overall adequately skilled and affordable, as well as UAE being a desirable destination to work. That said, there appears to be concerns about the availability, quality, and quantity of highly skilled workers in the region, which requires improvement of the outputs of the higher education institutions in terms of graduates and their relevance to the market needs.

4

Networking

Networking is one of the strengths of Abu Dhabi. Abu Dhabi entrepreneurs and consolidated owner-managers find it easy to be introduced to other entrepreneurs. However, while there appears to be some interpersonal networking, there is much less awareness of local business networks, and that developing entrepreneurial business networks is an important challenge for Abu Dhabi.

5

Demand

While Abu Dhabi consumers are open to new and innovative products and services, they do not necessarily have a preference to buy locally produced goods, although most new and growing firms can sell their goods and services locally. This suggests it would be good to support more locally produced goods and services. However, there is a good access to markets outside of the region.

6

Knowledge

In Abu Dhabi role models have a significant influence, with entrepreneurs building businesses on the result of something they learned from a person or organization in their region. That said, new knowledge does not appear to flow as freely as it could between entrepreneurs, nor does new knowledge developed by large businesses or local universities and public research institutions act as an important source of ideas. There is room for improvement in sharing of knowledge and technology transfer.

7

Financing

Financing is one of the weaknesses of the Abu Dhabi entrepreneurial ecosystem. While most entrepreneurs feel there are adequate sources of start-up funding, this financing for entrepreneurs appears to be mostly in the hands of government rather than traditional financing sources, such as informal, debt, business angel, pre-start-up, and equity funding. While there is enough funding, these results suggest that funding sources need to be expanded and made more diverse.

8

Leadership

In Abu Dhabi, entrepreneurial role models play a strong role in the decision of entrepreneurs to start their own businesses. However, there appears to be few available mentors, and not many entrepreneurs received mentoring for their businesses, suggesting that mentoring is an issue for the region and needs to be developed.

9

Support services and intermediaries

Support services score favorably particularly programs aimed at business start-ups as well as workshops and other training opportunities. However, the affordability and availability of local subcontractors, suppliers, and consultants is holding back performance. While government services are adequate, there is a requirement for a restructuring of government support to provide an easier single point of contact for entrepreneurs that addresses their requirements.

10

Formal institutions

Formal institutions could be strengthened. While support for new and growing firms is perceived a high priority for the local government, chambers and educational institutions, there appear to be issues with dealing with government bureaucracy, regulations, and licensing requirements, particularly during founding, as well as government policies (e.g., public procurement) that consider entrepreneurs. These results suggest that government policy still needs to be adjusted to satisfy the current needs of entrepreneurs.

Introduction

The Emirate of Abu Dhabi is the federal Capital of the United Arab Emirates (UAE) and the largest of the seven emirates which comprise the country. Thanks to 9% of the world oil reserves and nearly 5% of the world gas reserves, Abu Dhabi is the wealthiest of the seven emirates and contributes three-quarters of the federal budget. The economy of Abu Dhabi depends on the oil sector, which represents more than 40% of the local annual GDP (oil GDP contributed 58.3% of Abu Dhabi's total GDP at current prices as per 2018 and 2019 Q1 and Q2 Reports). There are, nonetheless, concerted efforts at the government level to diversify the economy through the promotion of high value-added industries such as aviation and aerospace, pharmaceuticals and life sciences, and healthcare equipment and services. Entrepreneurship and SMEs are expected to play an important role in diversification strategies as well as in increasing the percentage of the local labour force (UAE nationals) in the private pillar (currently less than 10%).

9%
of the world oil
reserves



5%
of the world gas
reserves

Abu Dhabi as an entrepreneurial ecosystem

Entrepreneurship is an integral part of Abu Dhabi's economy and business culture. The concept of being an independent entrepreneur is well respected and thus has received significant attention to enlarge the enterprise base and enhance its competitiveness; a key component of Abu Dhabi economic aspirations. At the time of writing, SME enterprise and start-ups make up 98% of businesses in Abu Dhabi and 44% of Abu Dhabi's non-oil GDP; making it amongst the most important pillar in the Emirate.

The government of Abu Dhabi has implemented a multitude of legal frameworks, policies and initiatives in order to ensure the growth and success of entrepreneurs and their businesses, as a means to support and develop one of the most sought-after entrepreneurial hotspots in the world, which contributes to the economy while acting as a vital source of job creation.

The Khalifa Fund's efforts as an SME development organisation is a reflection of the government of Abu Dhabi's mission to empower the culture of entrepreneurship, encourage innovation, and support Abu Dhabi's entrepreneurial ecosystem by raising efficiencies through building capabilities, unlocking financing, integrating with vital stakeholders and advocating the entrepreneurial culture.

The Khalifa Fund's services are wide ranging and all-encompassing of the entrepreneurial journey. The capacity building workshops equip entrepreneurs with the necessary tools to navigate the entrepreneurial ecosystem, with knowledge and confidence, while counselling and support services guide entrepreneurs towards making wise decisions for their businesses. The Khalifa Fund also invests in innovative business ideas that meet the market needs, and supports entrepreneurs throughout their journey, to ensure their continued success.

Moreover, the Khalifa Fund has formed ground-breaking partnerships with innovative entities who offer an opportunity for growth and prosperity. Amongst a diverse range of enterprise empowering initiatives, e-Empower was launched in 2020 in partnership with Amazon and noon.com to assist entrepreneurs to diversify their offerings and expand their sales channels through e-commerce. The respective partners also offer training and workshops to further develop their capabilities in their respective fields.



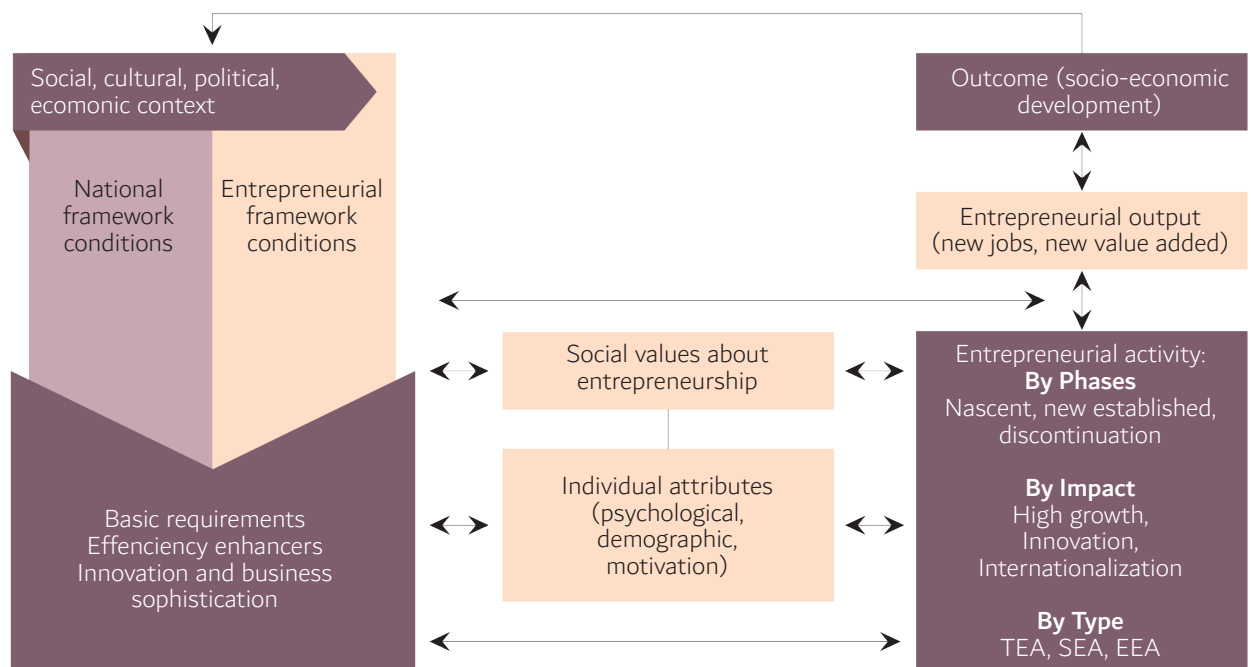
What is GEM?

GEM is a consortium of national country teams, primarily associated with top academic institutions, that carries out survey-based research on entrepreneurship around the world. GEM is the only global research source that collects data on entrepreneurship directly from individual entrepreneurs. GEM's Adult Population Survey provides analysis on the characteristics, motivations and ambitions of individuals starting businesses, as well as social attitudes towards entrepreneurship. The National Expert Survey (NES) looks at the national context in which individuals start businesses. The unique GEM tools and data benefit numerous stakeholder groups:

- Academics can apply unique approaches to studying entrepreneurship at the national level.
- Policymakers can make better informed decisions to help their entrepreneurial ecosystems thrive.
- Entrepreneurs have better knowledge on where to invest and influence.
- Sponsors collaborate with GEM to advance their organizational interests.
- International organizations leverage the entrepreneurial insights from GEM through reports and events.

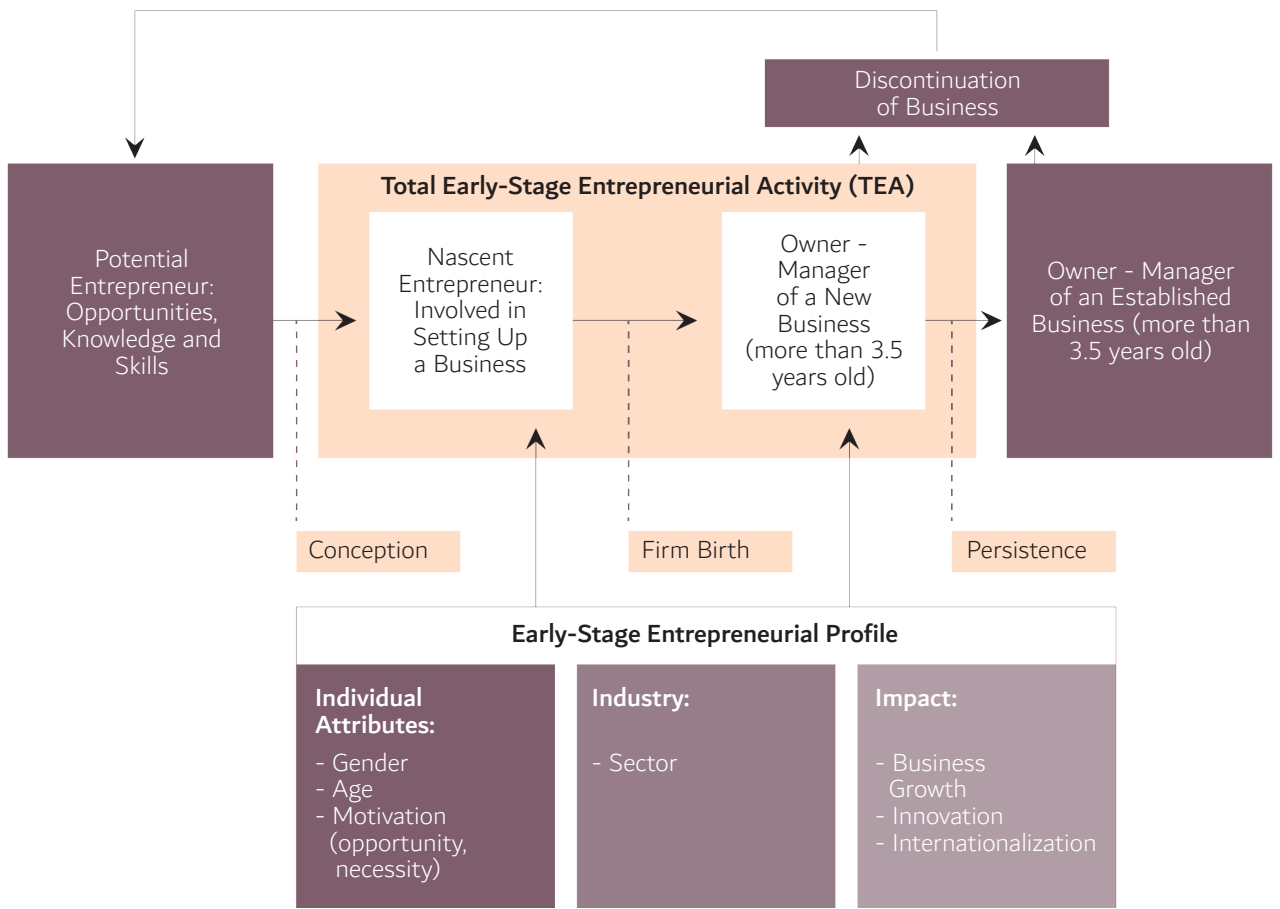
GEM Reports provide comprehensive information on entrepreneurial topics and regions thanks to a wide set of indicators on entrepreneurship that make-up its theoretical framework or conceptual model showed at **Figures 1 and 2**. These documents often cover an economy's entrepreneurial framework conditions, the prevalence of attitudes and social values related to entrepreneurship, and individual attributes of entrepreneurs. Additionally, figures are provided on a range of entrepreneurial activity indicators, such as: the stage or phase of a new venture (nascent, in consolidation, motivation (necessity versus opportunity), industry, dimension, growth, innovativeness, competitiveness, internationalization, job creation, social role, intrapreneurship, discontinuation and informal financing, among others.

Figure 1. The GEM framework



Source: GEM Global Report 2018/2019

Figure 2. GEM model of business phases and entrepreneurial characteristics



Source: GEM Global Report 2018/2019



The GEM-ESI methodology

GEM began as an assessment of entrepreneurial activity and its main features, but it is becoming a general platform to provide primary information on any aspect of entrepreneurship. GEM is unique as it annually collects primary survey data in each participating country. While other sources are based on registers or secondary sources of information, GEM has remained true to its origins, being the only project dedicated to creating new tools for measuring the aspects that make up the entrepreneurship sector at international level through data collection. This GEM-ESI report has been derived from these data, by a methodology consisting of indicators to quantify and measure entrepreneurial concepts.

GEM-ESI Sources of information

The sources of information for this GEM-ESI report are two surveys:

- **GEM-APS-ESI:** adult population survey applied to the Abu Dhabi entrepreneurial ecosystem.
- **GEM-RES-ESI:** survey to interview a pool of expertson the target entrepreneurial ecosystem conditions.

The GEM-APS-ESI survey utilized a representative sample of the 18-64 aged population resident in the Abu Dhabi entrepreneurial ecosystem. The survey was performed by a selected vendor, who used a specific questionnaire provided by GEM for that purpose. The questionnaire was a mixture of core questions and items included in the traditional GEM-APS questionnaire for all the individuals that make-up the sample plus a specific section focused on the target entrepreneurial ecosystem asked to all the individuals in the sample who apply as nascent, new, or established entrepreneurs.

The GEM-RES-ESI was a survey of experts (see Table 2) and was based on a questionnaire structured in 10 blocks of items and devoted to evaluating aspects of each of the 10 framework and systemic conditions (pillars). The sample was of convenience and formed by 30 experts: 3 experts on Networking, 3 on Leadership, 3 on Finance, 3 on Talent, 3 on Knowledge, 3 on Services / intermediaries, 3 on Formal institutions, 3 on Culture, 3 on Physical infrastructure and 3 on Demand. Experts were selected from actors that operate in the Abu Dhabi entrepreneurial ecosystem where entrepreneurs, formal institutions, private associations and support services and resources play a prominent role. To be selected, the experts must reside or work within Abu Dhabi or be related to it in a significant way.



Table 2. List of Abu Dhabi Experts in 2019

Networking	
Hana Barakat	Program Manager, Start AD
Cinar Kurra	CEO, Catalyst
Wasseem Abaza	Assistant Professor, Zayed University
Leadership	
Adeeb Alafeefi	Director, National Program for Small and Medium-Sized Enterprises at National Program for Small and Medium-Sized Enterprises, Ministry of Economy
Mohamed Al Qadhi	General Manager, Sandooq Al Watan
Dr. Nawaf Almoosa	Deputy Director and Head of Smart Infrastructure Research, EBTIC
Finance	
Wilson Samaha	Innovation Development Associate Director, ADGM
Hamza Chraibi	Founder, Arab Excellence
Tarig El-Sheikh	Entrepreneur and Investor
Talent	
Yehya Al Marzouqi	Tawazun, Executive Director for Strategy
Fareed Al Amiri	Acting Director, Student Happiness Division - Education Affairs Sector, ADEK
Elif Bascavusoglu	Assistant Professor, Sorbonne University Abu Dhabi
Knowledge	
Jagannathan, Ramesh	Research Professor of Engineering, Vice Provost for Entrepreneurship, Managing Director, StartAD
Ghaleb Al Hadhrami	Deputy Vice Chancellor, Research & Graduate Programs, United Arab Emirates University
Steve Griffith	Senior Vice President, Research and Development, Khalifa University
Support Services & Intermediaries	
Ounsi El Daif	Founder and CEO of Eedama, Environmental consultancy
Faisal Al Hmoudi	Director, Authority for Social Contribution - MAAN
Martin Tidestrom	Business Development Director, ADGM

Table 2. List of Abu Dhabi Experts in 2019

Formal Institutions	
Nizar Cheniour	Director of Innovation and Special Projects Department, Khalifa Fund
Tayseer Ismail	Manager, Business Intelligence Section, Department of Strategic Affairs, Khalifa Fund
Ahmed Abdulwahhab	Founder, CEO Next Arabia
Culture	
Mariam Abdulrahman Musallam	Project Manager, Innovation and Patents, Takamul, Department of Economic Development Abu Dhabi
Doaa Skaik	CIO, Tafkeer
Christina Andreassen	Womentum Accelerator Managing Director, WOMENA
Physical Infrastructure	
Dr. Petar Stojanov	Managing Partner, Ebtikaar
Abdulla Al Awadhi	Entrepreneur
Ibrahim bin Shaheen	CEO, i General Trading
Demand	
Ahmed Saleh	Partner, Head of Patents & Designs (R&D and Innovations) - Al Tamimi & Co.
Saif Al Shaali	Director - Economic Planning Policy Division, Abu Dhabi Council
Hadef Al Shamsi	Director, Department of Strategic Affairs, Khalifa Fund
Lina Hamdan	Founder, Enablinc

GEM-ESI indicators

The data collected by GEM-ESI surveys consisted of a set of 98 variables that described the quality of the Abu Dhabi entrepreneurial ecosystem. These variables were grouped into the 10 pillars that make up the entrepreneurial ecosystem environment. Table 3 summarizes the final set of indicators derived from combinations of this wide set of original variables regarding the evaluation of the quality of the Abu Dhabi entrepreneurial ecosystem.

Table 3. GEM-ESI main indicators

Indicator	Method (all indicators are re-scaled into 10 points)	Description purpose
N	Combination of 15 APS & RES variables (re-scaled)	Network pillar
L	Combination of 10 APS & RES variables (re-scaled)	Leadership pillar
F	Combination of 11 APS & RES variables (re-scaled)	Financing pillar
T	Combination of 12 APS & RES variables (re-scaled)	Talent pillar
K	Combination of 5 APS & RES variables (re-scaled)	Knowledge pillar
S	Combination of 10 APS & RES variables (re-scaled)	Services pillar
G	Combination of 9 APS & RES variables (re-scaled)	Formal institutions pillar
C	Combination of 10 APS & RES variables (re-scaled)	Culture pillar
P	Combination of 10 APS & RES variables (re-scaled)	Physical infrastructure pillar
D	Combination of 6 APS & RES variables (re-scaled)	Demand pillar
ESI_SC	Average of the 6 systemic conditions	Index on systemic conditions
ESI_FC	Average of the 4 framework conditions	Index on framework conditions
ESI	Average of the 10 conditions	Index of the entrepreneurial ecosystem quality

Abu Dhabi's entrepreneurial ecosystem quality

The ESI composite index is designed to give a measure of the quality of the Abu Dhabi entrepreneurial ecosystem in one figure. It is comprised of an average of the two partial indexes ESI_SC and ESI_FC which are simple averages of 6 pillars that comprise the systemic environment and the 4 pillars which comprise the framework environment. We now review each pillar.

Pillar 1: Networking

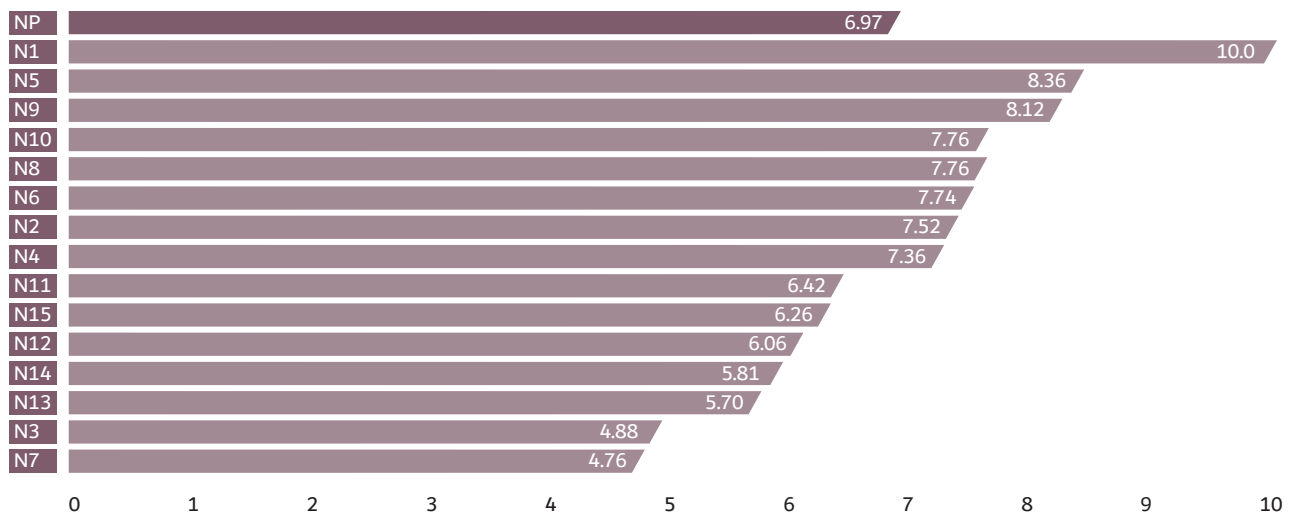
The Networking pillar summarizes the average state of the networking and communication resources used by actors of Abu Dhabi's entrepreneurial ecosystem. With this pillar, it is possible to evaluate to what degree networking makes it easy (or prevents) the establishment of professional and business contacts, helping (or making difficult) interaction among the ecosystem's actors. The Network pillar is formed of 15 variables. The average scores for Abu Dhabi in 10-point scales are presented in Table 4 and Figure 4.

Table 4. The average state of the Networking pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
NP	Networking pillar	6.97
N1	Easy to get in touch with other owner-managers of young businesses personally for nascent entrepreneurs	10.0
N2	You can easily find the right people through your network for help/advice for nascent entrepreneurs	7.52
N3	Most owner-managers in same industry/region participate in at least one local business network for nascent entrepreneurs	4.88
N4	How often do you attend local business networking events? For nascent entrepreneurs	7.36
N5	Easy to get in touch with other owner-managers of young businesses personally for new and established owner-managers	8.36
N6	You can easily find the right people through your network for help/advice for new and established owner-managers	7.74
N7	Most owner-managers in same industry/region participate in at least one local business network for new and established owner-managers	4.76
N8	How often do you attend local business networking events? For owner-managers	7.76
N9	% of population that thinks that media favor entrepreneur's activities spread	8.12
N10	Public organizations run start-up events with sufficient frequency to support new and growing businesses effectively	7.76
N11	Private organizations or members of the start-up community run start-up events with sufficient frequency to support new and growing businesses effectively	6.42
N12	There are examples of well-connected community of SU with active investors, advisors...	6.06
N13	In the region: start-up community networks are well known and accessible	5.70
N14	Different local organizations often jointly organize events to foster regional e-ship activity	5.81
N15	% of TEA+EB individuals that know other entrepreneurs	6.26

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement. Nascent entrepreneurs refer to businesses up to 3 months in the market, while new and established owner-manager refers to businesses active between 3 and 42 months and more than 42 months in the market respectively.

Figure 4. The average state of the Network pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (N1 to N15) can be consulted at Table 4.

Diagnostic for the Networking pillar in Abu Dhabi the year 2019

- Abu Dhabi has a quite healthy Networking Pillar with an average score of 6.97.
- The strongest component of this pillar indicates that Abu Dhabi community of entrepreneurs and consolidated owner-managers find it easy to get in touch with other owner-managers of young businesses personally.
- The weakest component of the pillar is that few owner-managers in Abu Dhabi participate in at least one local business network for new and established owner-managers. This component got just 4.76 points over 10, pointing out that this collective is much less involved in going to local networking events. Similarly, few owner-managers in Abu Dhabi participate in at least one local business network for nascent entrepreneurs, with a score of 4.88. However, the results also suggest that both nascent (7.36) and established owner-managers (7.76) participate in business networking events, suggesting that although there is healthy interaction, the entrepreneurs do not view themselves as members of a local business network. This insight is also supported by the low scores (5.70) for the accessibility and knowledge of start-up community networks (5.70), as well as few examples of well-connected start-up communities with active investors and advisors (6.10), or local organizations that support start-ups (5.81). This suggests that developing entrepreneurial networks is an important challenge for the entrepreneurial ecosystem.
- Relatedly the second strongest component of this pillar suggests that entrepreneurs find it easy to get in touch with other owner-managers of young businesses personally. This suggests that personal networking is quite healthy in the region between young and established owner-managers.
- Finally, the Abu Dhabi entrepreneurial ecosystem shows good average scores regarding the contribution of media in keeping its actors informed and connected, with quite strong agreement on that the media is favoring entrepreneurs' activities spread (8.12 points).

Pillar 2: Leadership

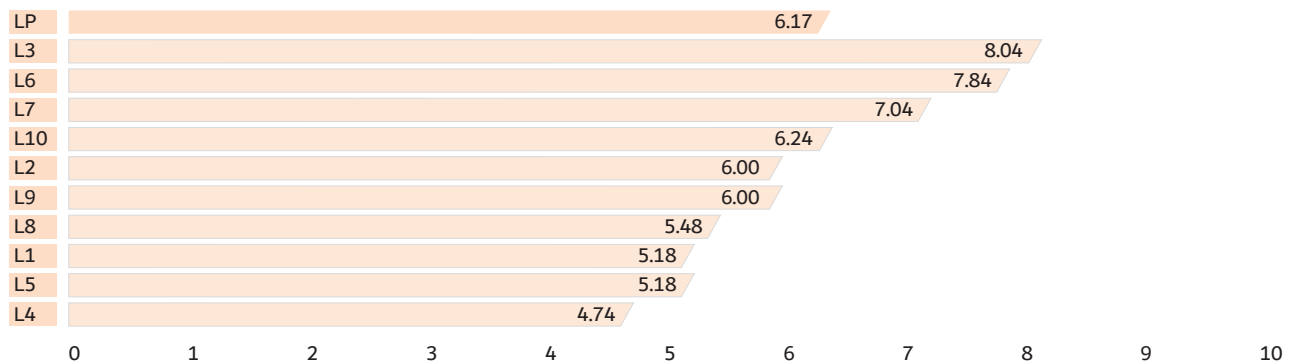
The Leadership pillar summarizes the average state of leadership for the Abu Dhabi entrepreneurial ecosystem. It covers whether important and influential individual or teams of entrepreneurs shape the entrepreneurial ecosystem. This includes mentoring as well as role model functions among other aspects. The Leadership pillar is formed of 10 variables. The average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 5 and Figure 5.

Table 5. The average state of the Leadership pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
LP	Leadership pillar	6.17
L1	How often do you receive advice for your new business in form of mentoring from established business founders in your region? For nascent entrepreneurs	5.18
L2	How often do you give advice in form of mentoring to new business owner-managers? For nascent entrepreneurs	6.00
L3	Your decision to start your own business was strongly inspired by a start-up or business from your region. For nascent entrepreneurs	8.04
L4	How often did you receive advice for your new business in form of mentoring from established business founders in your region? For new and established owner-managers	4.74
L5	How often do you give advice in form of mentoring to new business owner-managers? For new and established owner-managers	5.18
L6	Your decision to start your own business was strongly inspired by a start-up or business from your region. For new and established owner-managers	7.84
L7	In my region: At least one strong entrepreneurial group or individual with high economic impact is a visible part of an entrepreneurial community	7.04
L8	In my region: there is a broad pool of well-respected mentors and advisors offering support for new and growing firms, acting for the long term rather than pursuing short time financial gain	5.48
L9	In my region: public and private organizations cooperate with each other to enhance entrepreneurship in the region	6.00
L10	In my region: the development of the ecosystem is not constrained due to a single public or private organization or actor having too much power (reversed variable)	6.24

Note: one variable is reversed when a high value damages the quality of an entrepreneurial ecosystem. In the case of variable L10, originally, the text was expressed in positive. Thus, if experts agree a lot in that the development of the entrepreneurial ecosystem is constrained due to a single public or private organization or actor having too much power, a high score of this individual component would aggregate value where there is not. The value reveals that the experts agree more than disagree on the reversed proposed statement, or in other words, that there is a quite strong agreement on that the development of the ecosystem is not constrained due to a single public or private organization or actor having too much power.

Figure 5. The average state of the Leadership pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (L1 to L10) can be consulted at Table 5.

Diagnostic for the Leadership pillar in Abu Dhabi the year 2019

- Abu Dhabi has a moderately healthy Leadership pillar with an average score of 6.17.
- The strongest component of this pillar is the effect of role models, with the decision of both nascent (8.04) and established entrepreneurs (7.84) to start their own businesses were strongly inspired by a start-up or business from their region.
- The weakest components of the pillar refer to mentoring activities involving nascent (4.74) and established (5.18) owner-managers. Neither types of entrepreneur received advice for their new business in form of mentoring and, at the same time, nor did established business founders give mentoring to nascent entrepreneurs (5.18). Similarly, experts think (5.48) that there are not enough well-respected mentors and advisors offering support for new and growing firms and acting for the long term rather than pursuing short time financial gain. These results, considered together, suggest that mentoring is an issue for the region and needs to be developed.
- Experts believe (6.00) that Abu Dhabi public and private organizations do cooperate with each other to enhance entrepreneurship in the region, but that this could be improved.

Pillar 3: Financing

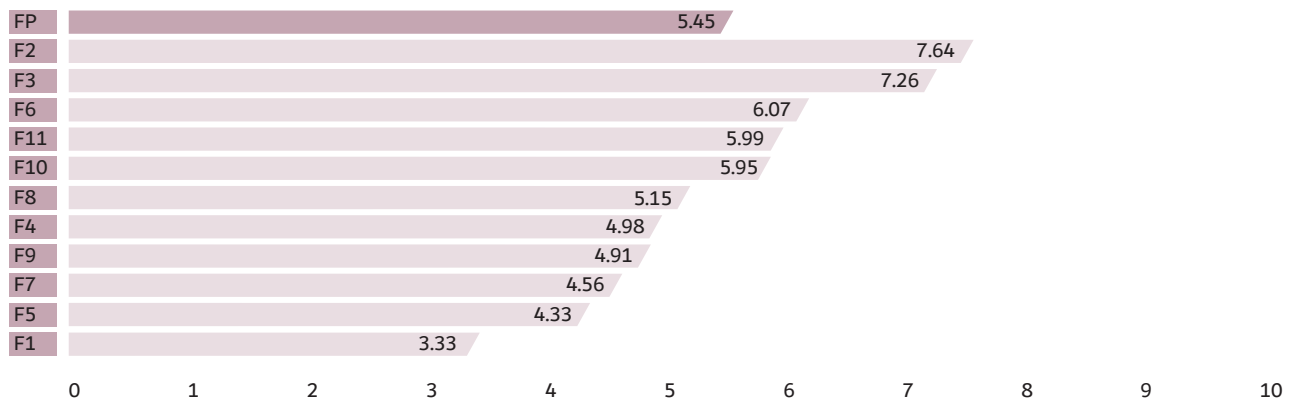
The Finance pillar summarizes the average state of the availability and access to capital for nascent entrepreneurs and consolidated owner-managers based on different types of financing channels within the Abu Dhabi entrepreneurial ecosystem. The Finance pillar is formed by 11 variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 6 and Figure 6.

Table 6. The average state of the Finance pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
FP	Finance pillar	5.45
FP1	Type of situation about informal investment. Assigns a code to the entrepreneurial ecosystem depending on the value of the regional rate of informal investors/national rate of informal investors	3.33
FP2	You feel there are adequate sources of external start-up funding in your region. For nascent entrepreneurs	7.46
FP3	You feel there are adequate sources of external start-up funding in your region. For new and established owner-managers	8.04
FP4	In Abu Dhabi, new and growing firms have sufficient access to equity funding	4.98
FP5	In Abu Dhabi new and growing firms have sufficient access to debt funding	4.33
FP6	In Abu Dhabi, new and growing firms have sufficient access to government subsidies	6.07
FP7	In Abu Dhabi, new and growing firms have sufficient access to funding from business angels	4.56
FP8	In Abu Dhabi, new and growing firms have sufficient access to funding from venture capitalists	5.15
FP9	In Abu Dhabi, entrepreneurs have sufficient access to pre-start-up funding	4.91
FP10	In Abu Dhabi, entrepreneurs have sufficient access to funding for their start-up phase	5.95
FP11	In Abu Dhabi, entrepreneurs have sufficient access to funding for business growth	5.99

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement. With respect to the type of situation about informal investment, a value below 5 points indicates that the percentage of population involved in this type of investment is lower for the target entrepreneurial ecosystem than for the nation where the entrepreneurial ecosystem is embedded.

Figure 6. The average state of the Finance pillar and its components in Abu Dhabi in 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's (F1 to F10) can be consulted at Table 6.

Diagnostic for the Finance pillar in Abu Dhabi the year 2019

- The Finance pillar scores moderately low with an average score of 5.45.
- The strongest component of this pillar is that both nascent (7.46) and established (7.26) entrepreneurs show a quite high degree of agreement (7.46) on the fact that they feel there are adequate sources of external start-up funding in Abu Dhabi.
- The weakest component is informal investment (3.33), which is compounded with the low scored for debt funding (4.33), business angels (4.56), pre-start-up funding (4.91), and equity funding (4.98). These results suggest that financing for entrepreneurs is mostly in the hands of government rather than in hands of traditional financing sources. The result is coherent but have room for improving.
- Finally, and perhaps a little more positively, experts give a stronger evaluation that propose that Abu Dhabi entrepreneurs have enough access to funding for their start-up (5.95) and growth (5.99) phases.

Pillar 4: Talent

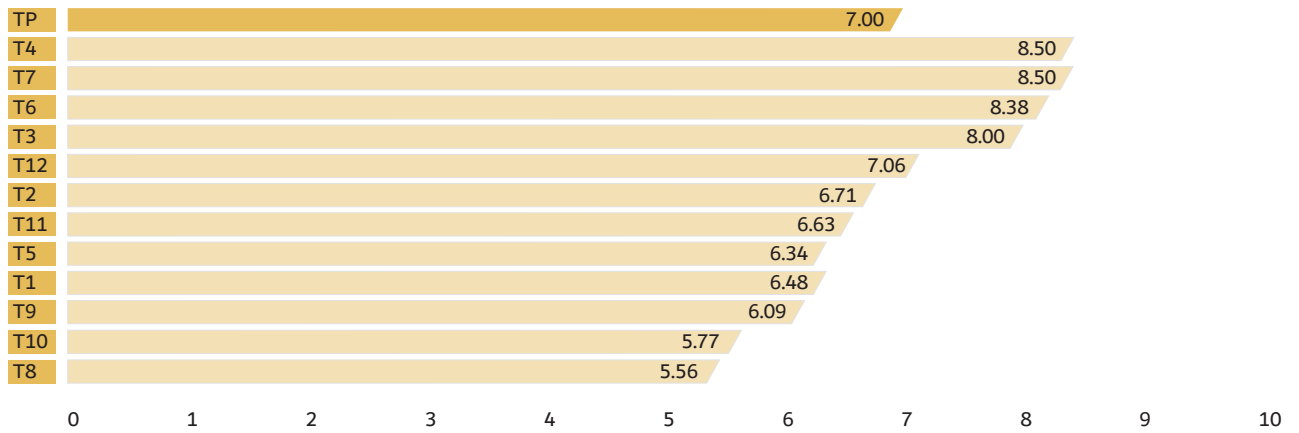
The Talent pillar summarizes the average state of the quality, availability, and costs of employees to cover the current and future workforce needs of regional businesses. The Talent pillar also partly covers possible knowledge spill-over or technology transfer from higher education institutions into start-ups or new business foundations. It is formed by 12 variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 7 and Figure 7.

Table 7. The average state of the Talent pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
TP	Talent pillar	7.00
T1	Type of situation about skills: you have the knowledge, skill and experience required to start a new business	6.34
T2	There is a shortage of the types of employees you need for your business in your region. For nascent entrepreneurs (reverted variable showing degree of disagreement with the proposed statement)	6.71
T3	You can afford to hire the employees you need for your business locally. For nascent entrepreneurs	8.00
T4	You are satisfied that the skill levels of people in Abu Dhabi are sufficient for your business needs. For nascent entrepreneurs	8.50
T5	There is shortage of the types of employees you need for your business in your region. For new and established owner-managers (reverted variable showing degree of disagreement with the proposed statement)	6.48
T6	You can afford to hire the employees you need for your business locally. For new and established owner-managers	8.38
T7	You are satisfied that the skill levels in Abu Dhabi are sufficient for your business needs. For new and established owner-managers	8.50
T8	In Abu Dhabi a broad array of highly skilled workers is available for new and growing firms	5.56
T9	In Abu Dhabi higher education institutions ensure the workforce for new and growing firms is sufficient in quality	6.09
T10	In Abu Dhabi higher education institutions ensure the workforce for new and growing firms is sufficient in quantity	5.77
T11	In Abu Dhabi highly qualified young people tend to stay within the region	6.63
T12	Abu Dhabi is an attractive location to move to for people with the skills needed by new and growing firms	7.06

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 7. The average state of the Talent pillar and its components in Abu Dhabi in 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (T1 to T12) can be consulted at Table 7.

Diagnostic for the Talent pillar in Abu Dhabi the year 2019

- The Talent pillar has a moderately high evaluation with an average score of 7.00.
- The strongest component of this pillar is that both nascent (8.5) and established (8.5) entrepreneurs believe that skill levels in Abu Dhabi are sufficient for their business needs. Furthermore, both nascent (8.0) and established (8.38) entrepreneurs believe that they can afford to hire the employees for their business locally. This is a strength of the Abu Dhabi entrepreneurial ecosystem.
- The weakest component of the pillar is related to the availability of an array of highly skilled workers. Similarly, there is some concern about the quality (6.09) and the quantity (5.77) of the outputs of the higher education institutions to ensure the workforce for new and growing firms is sufficient. Furthermore, the suggestion that there is a shortage of the types of employees for both nascent (6.71) and established (6.48) entrepreneurs. While these results are not bad, they suggest that more is required to improve the quality and range of skilled workers in the Abu Dhabi entrepreneurial ecosystem.
- While Abu Dhabi is seen as an attractive location to move to (7.06), less young people stay in the region (6.63). The result suggests that the Abu Dhabi entrepreneurial ecosystem offers good opportunities for experienced people while it is not enough able to embrace recent and well-trained young.

Pillar 5: Knowledge

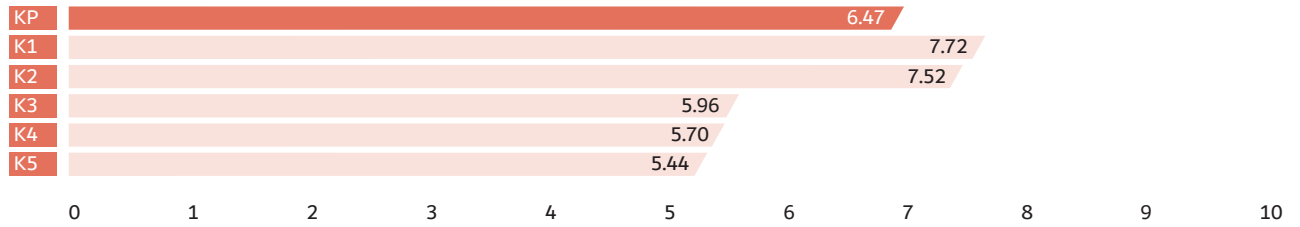
The Knowledge pillar summarizes the average state of the availability and access to knowledge and technologies as well as knowledge spill-over within the region. This covers the other part of knowledge transfer from higher education institutions to supplement the talent pillar but also in how far the business idea was influenced by other regional actors or businesses. The Knowledge pillar is formed of 5 variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 8 and Figure 8.

Table 8. The average state of the Knowledge pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
KP	Knowledge pillar	6.47
K1	Your business is built on the result of something you learned from a person or organization in your region. For nascent entrepreneurs	7.72
K2	Your business is built on the result of something you learned from a person or organization in your region. For new and established owner-managers	7.52
K3	There are many examples of new and growing firms that use new technology, science, and other knowledge developed in local universities and public research institutions	5.70
K4	New knowledge developed by large businesses in Abu Dhabi are an important source of ideas for new and growing firms within Abu Dhabi	5.96
K5	New knowledge about doing business flows freely between entrepreneurs in Abu Dhabi	5.44

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 8. The average state of the Knowledge pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (K1 to K5) can be consulted at Table 8.

Diagnostic for the Knowledge pillar in Abu Dhabi the year 2019

- Abu Dhabi's Knowledge pillar has a positive evaluation with an average score of 6.47.
- The strongest component of this pillar is the outside influence of role models, with both nascent (7.72) and established (7.52) entrepreneurs stating that their businesses are built on the result of something they learned from a person or organization in their region.
- This contrasts with the weakest component (5.44) where entrepreneurs believe that new knowledge does not flow business as freely as it could between entrepreneurs in Abu Dhabi. Similarly, entrepreneurs do not seem to believe that new knowledge is developed by large businesses (5.96), nor that new technology, science, and other knowledge developed in local universities and public research institutions (5.7) are an important source of ideas for new and growing firms.
- Together these results suggest that it is entrepreneurial role models that act as triggers for entrepreneurs, and there is room for improvement in sharing of knowledge and technology transfer.

Pillar 6: Support services and intermediaries

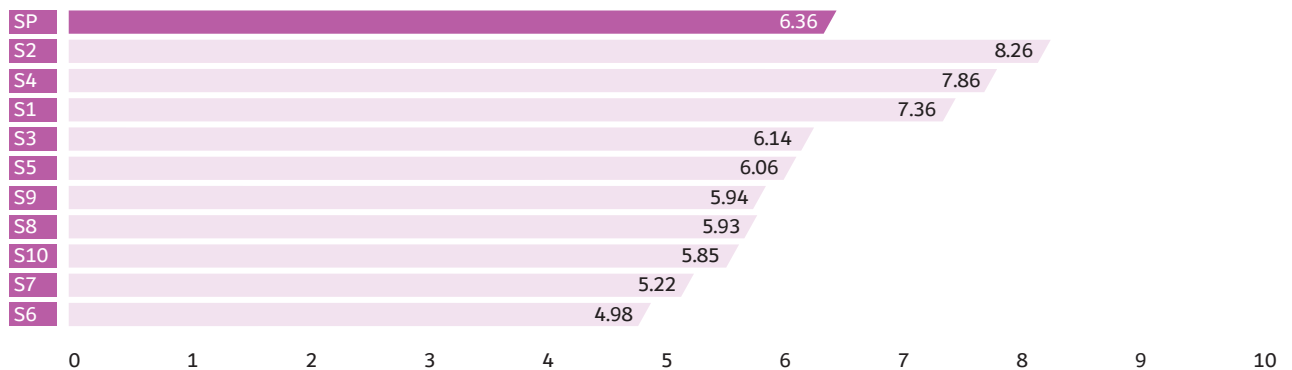
The Support services and intermediaries' pillar summarizes the average state of the availability and access to commercial and professional services along with public infrastructures and facilities for entrepreneurs. The Support services and intermediaries' pillar is formed by ten original variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 9 and Figure 9.

Table 9. The average state of the Support services and intermediaries' pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
SP	Support services and intermediaries' pillar	6.36
S1	There are, in general, enough workshops and other training opportunities accessible within your region for accounting, tax and legal issues, business planning, etc. which are usable for your type of start-up. For nascent entrepreneurs	7.36
S2	How strongly is your new business supported by a program in your region which is aimed at business start-ups (e.g. an accelerator or incubator program). For nascent entrepreneurs	8.26
S3	There are, in general, enough workshops and other training opportunities accessible within Abu Dhabi to learn the business skills you need for your business. For new and established owner-managers	6.14
S4	How strongly was your new business supported by a program in your region which is aimed at business start-ups (e.g. an accelerator or incubator program). For new and established owner-managers	7.86
S5	There are enough high-quality subcontractors, suppliers, and consultants to support new and growing firms	6.06
S6	New and growing firms can afford the cost of local subcontractors, suppliers, and consultants	7.86
S7	A wide range of government assistance for new and growing firms can be obtained through contact with a single agency	5.22
S8	An impartial agency exists as first contact point for entrepreneurs, helping them to find the optimal sources of support for their specific needs	5.93
S9	Government programs for new and growing businesses are sufficiently tailored to regional needs	5.94
S10	Regional agencies efficiently enable access to national and international support programs for new and growing businesses	5.85

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 9. The average state of the Support services and intermediaries' pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (S1 to S10) can be consulted at Table 9.

Diagnostic for the Support services and intermediaries' pillar in Abu Dhabi the year 2019

- The Support services and intermediaries' pillar has a positive evaluation with an average score of 6.36.
- The strongest component of this pillar is the support by programs aimed at business start-ups (e.g. an accelerator or incubator programs), for both nascent (8.26) and established entrepreneurs (7.86). Similarly, nascent entrepreneurs (7.36), and to a lesser extent established entrepreneurs (6.14), believe that there are, in general, enough workshops and other training opportunities accessible within Abu Dhabi to learn the business skills they need for their business.
- Despite this support, there is lesser agreement that a single agency can provide government assistance (5.22), or that there is an impartial agency that exists as first contact point for entrepreneurs, helping them to find the optimal sources of support for their specific needs (5.93). Similarly, there is less agreement that regional agencies efficiently enable access to national and international support programs (5.85) or that government programs for new and growing businesses are sufficiently tailored to regional needs (5.94). Thus, there is a requirement for a restructuring of government support to provide an easier single point of contact for entrepreneurs that addresses their requirements.
- However, the weakest component corresponds to the affordability of local subcontractors, suppliers, and consultants (4.98), nor that there are enough of them available (6.06).

Pillar 7: Formal Institutions

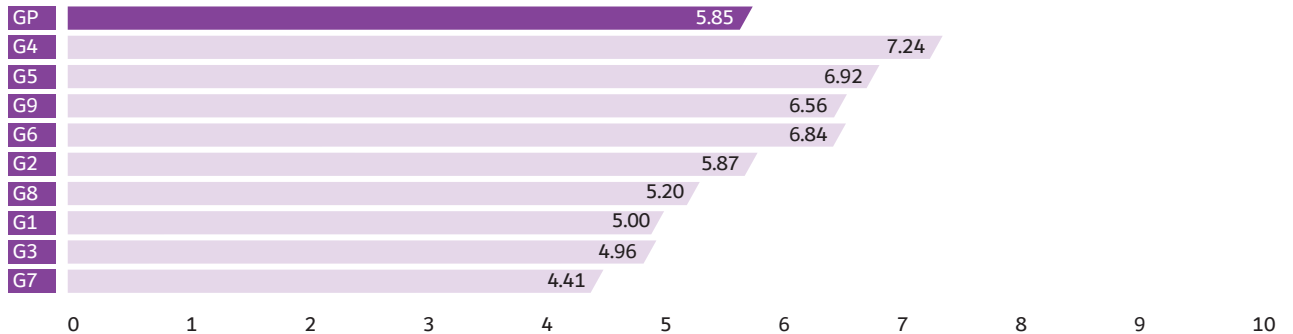
The Formal Institutions' pillar summarizes the average state of the political or governmental institutions support of new business creation as well as rules and regulations affecting the start-up landscape. The Formal Institutions' pillar is formed by nine original variables whose average scores along with the pillar average state for Abu Dhabi in 10-point scales are presented in Table 10 and Figure 10.

Table 10. The average state of the Formal Institutions' pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
GP	Formal Institutions pillar	5.85
G1	Bureaucracy and regulations, you encounter during the founding of your business are NOT a serious problem. For nascent entrepreneurs	5.00
G2	Bureaucracy and regulations, you encountered during the founding of your business are NOT a serious problem. For new and established owner-managers	5.87
G3	Government policies (e.g., public procurement) consistently consider new and growing firms	4.96
G4	Support for new and growing firms is a high priority for the local government	7.24
G5	Support for new and growing firms is a high priority for Chambers (of Craft, of Commerce, of Industry, etc.).	6.92
G6	Support for new and growing firms is a high priority for Educational Institutions	6.48
G7	It is extremely easy for new and growing firms to cope with government bureaucracy, regulations, and licensing requirements	4.41
G8	Almost anyone who needs help from a government program for a new or growing business can find what they need	5.20
G9	Government programs aimed at supporting new and growing firms are significantly improving the chances of survival and success of those firms	6.56

Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 10. The average state of the Formal Institution pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (G1 to G9) can be consulted at Table 10.

Diagnostic for the Formal Institutions' pillar in Abu Dhabi the year 2019

- The Formal Institutions' pillar achieved a positive evaluation with an average score of 5.85.
- The strongest component is support for new and growing firms, which is perceived a high priority for the local government (7.24). Supporting this is a perceived high priority for Chambers of Craft, Commerce, and Industry (6.92) and for educational institutions (6.48). Government programs aimed at supporting new and growing firms are also viewed as improving the chances of survival and success of those firms (6.56).
- The weakest component is the difficulty in dealing with government bureaucracy, regulations, and licensing requirements (4.41). Similarly, government policies (e.g., public procurement) are not viewed as consistently considering new and growing firms (4.96), and that it can be difficult to find needed information from government departments (5.2). Similarly, the bureaucracy and regulations during the founding phase present somewhat a problem for both nascent (5.0) and established entrepreneurs (5.87). These results suggest that government policy still needs to be adjusted to satisfy the current needs of entrepreneurs.

Pillar 8: Culture

The Culture pillar summarizes the average state of entrepreneurial culture within the target society and the degree of openness of good practices among the entrepreneurs and owner-managers within the Abu Dhabi entrepreneurial ecosystem. This covers risk aversion, perceived reputation of entrepreneurs, existence of events and an overall entrepreneurial vibe amongst other things. The Culture pillar is formed by ten original variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 11 and Figure 11.

Table 11. The average state of the Culture pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
CP	Culture pillar	7.15
C1	Fear of failure would prevent you from starting a business. Reversed variable	5.92
C2	In my country, most people consider starting a new business a desirable career choice	7.02
C3	In my country, those successful at starting a new business have a high level of status and respect	7.70
C4	Share of respondents who answered yes to: Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years? The share compares the regional and national values and results are organized in 3 possible scores for the target entrepreneurial ecosystem	10.00
C5	Most people in Abu Dhabi are supportive of individuals who are interested in becoming entrepreneurs. For nascent entrepreneurs	8.12
C6	Most people in Abu Dhabi are supportive of individuals who are interested in becoming entrepreneurs. For new and established owner-managers	7.88
C7	Large established firms are supportive of high-growth start-ups, pursuing a long-term interest or investment rather than hostile or short-term motives (takeover to shut down, dismantling, etc.)	5.22
C8	There are many events for start-up entrepreneurs, such as meet-ups, pitch days, start-up weekends, boot camps, hackathons and competitions	6.85
C9	New and growing firms can enter markets without being unfairly blocked by established firms	5.95
C10	Most people are supportive of individuals who are interested in becoming entrepreneurs	6.85

Note: In this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 11. The average state of the Culture pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (C1 to C10) can be consulted at Table 11.

Diagnostic for the Culture pillar in Abu Dhabi the year 2019

- The Culture pillar is positively evaluated with an average score of 7.15.
- The strongest component of this pillar considers the outstanding share of respondents who are expecting to start a new business, including any type of self-employment, within the next three years. This expectation is bolstered by entrepreneurs having a high level of status and respect (7.7), as well as most people in Abu Dhabi being supportive of individuals who are interested in becoming entrepreneurs (8.12 for nascent and 7.88 for established entrepreneurs), higher than the national average (6.85).
- The weakest component is the perceived low support of large established firms; this may be due to them not having long-term investment goals, and instead have hostile or short-term motives (5.22), such as unfairly blocking access to markets (5.95).
- There remains a fear of failure in the UAE, however this seems to be lower than in previous years (5.92), and entrepreneurship is perceived as a favorable career choice (7.02), supported by some events for start-up entrepreneurs, such as meet-ups, pitch days, start-up weekends, boot camps, hackathons, and competitions (6.85).
- Overall, there is a strong level of cultural support for entrepreneurship in Abu Dhabi, although perhaps established businesses could be somewhat more supportive. Moreover, more entrepreneurship focused events could be initiated.

Pillar 9: Physical Infrastructure

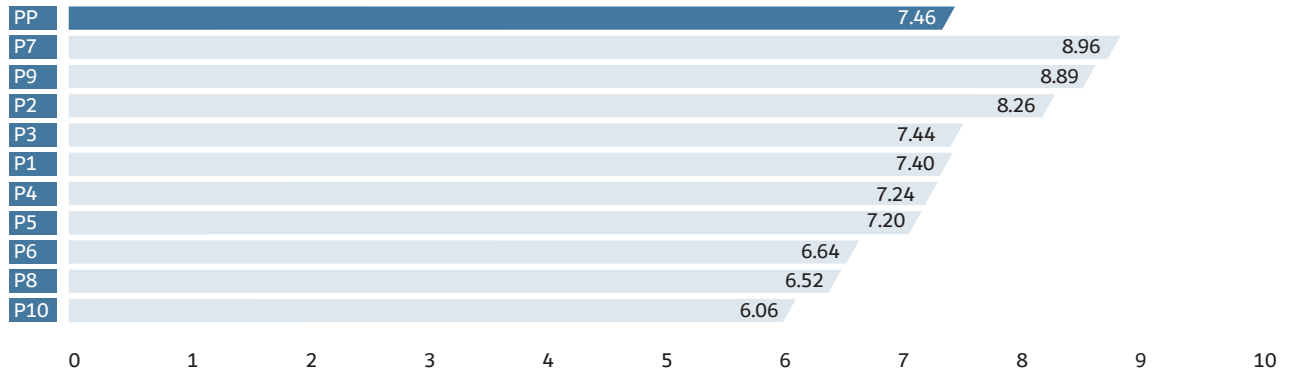
The Physical Infrastructure pillar summarizes the average state of the infrastructure, critical to new business foundations. It covers transport, telecommunication and (office or production) space infrastructure, its state, accessibility, and costs. The Physical Infrastructure pillar is formed by ten original variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 12 and Figure 12.

Table 12. The average state of the Physical Infrastructure pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
PP	Physical Infrastructure pillar	7.46
P1	Transport infrastructure (for example, roads parking space, traffic flow). For nascent entrepreneurs	7.40
P2	Telecommunications, internet access and speed. For nascent entrepreneurs	8.26
P3	Price and availability of additional physical space to grow your business. For nascent entrepreneurs	7.44
P4	Transport infrastructure (for example, roads parking space, traffic flow). For new and established owner-managers	7.24
P5	Telecommunications, internet access and speed. For new and established owner-managers	7.20
P6	Price and availability of additional physical space to grow your business. For new and established owner-managers	6.64
P7	The general physical infrastructure like roads, utilities, waste disposal provides good support for new and growing firms	8.96
P8	It is not too expensive for a new or growing firm to get good access to communications (phone, Internet, etc.)	6.52
p9	New or growing firms have access to state-of-the-art internet connection speed	8.89
P10	New or growing firm have access to affordable office space	6.06

Note: In this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 12. The average state of the Physical Infrastructure pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (P1 to P10) can be consulted at Table 12

Diagnostic for the Physical Infrastructure pillar in Abu Dhabi the year 2019

- The Physical Infrastructure pillar has a favorable evaluation with an average score of 7.46.
- The strongest components of this pillar consist of the infrastructure in Abu Dhabi. There is strong agreement (8.96) that the general physical infrastructure like roads, utilities, waste disposal provides good support for new and growing firms. Furthermore, there is strong agreement for both nascent (8.26) and established (8.89) entrepreneurs that telecommunications, particularly the internet, is available. There is also agreement that transport infrastructure is available for both nascent and established (7.24) entrepreneurs. These results highlight the positive effect of the ongoing investment in infrastructure in Abu Dhabi.
- The weakest component (6.06) is the accessibility of affordable office space. This is somewhat offset by the better perceived access and affordability of physical space for both nascent (7.44) and established entrepreneurs (6.64). However, the affordability to get good access to communications (phone, Internet, etc.) is seemed as somewhat poor (6.54).

Pillar 10: Demand

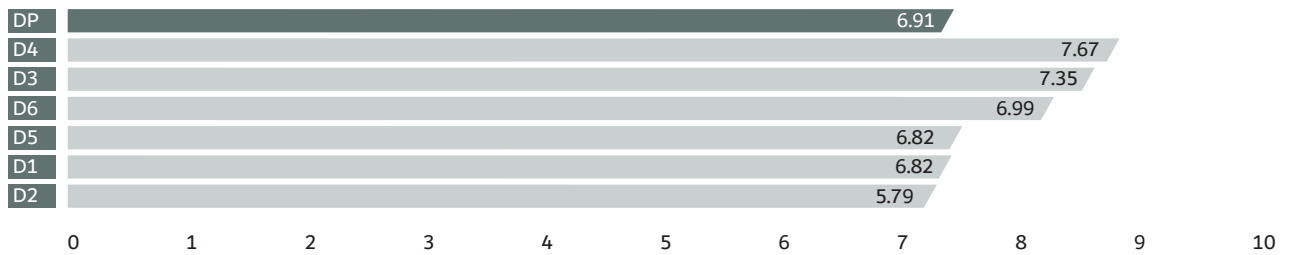
The Demand pillar summarizes the average state of the market dynamics, estimation of a regional market and accessibility of region external markets. The Demand pillar is formed by six variables. Their average scores and the pillar average state for Abu Dhabi in 10-point scales are presented in Table 13 and Figure 13.

Table 13. The average state of the Demand pillar and its components in Abu Dhabi the year 2019

Name	Variables / indicators	Average Score (0-10 points)
DP	Demand pillar	6.91
D1	In the next six months, will there be good opportunities for starting a business in the area where you live?	6.82
D2	Customers prefer, if possible, to buy goods and services which are produced by local firms	5.79
D3	Most new and growing firms can sell their goods and services locally	7.35
D4	Consumers are open to new and innovative products and services	7.67
D5	The first customers of many new firms are located in this region	6.82
D6	It is easy to access markets outside of the region	6.99

*Note: in this Likert scale, 0 represents the lowest value while 10 represents the highest value for each statement.

Figure 13. The average state of the Demand pillar and its components in Abu Dhabi the year 2019 (individual components of the pillar ordered from the strongest to the weakest)



Note: In this Likert scale, 0 represents the lowest value while 10 represents the highest value for each component. The meaning of the pillar's components (D1 to D6) can be consulted at Table 13.

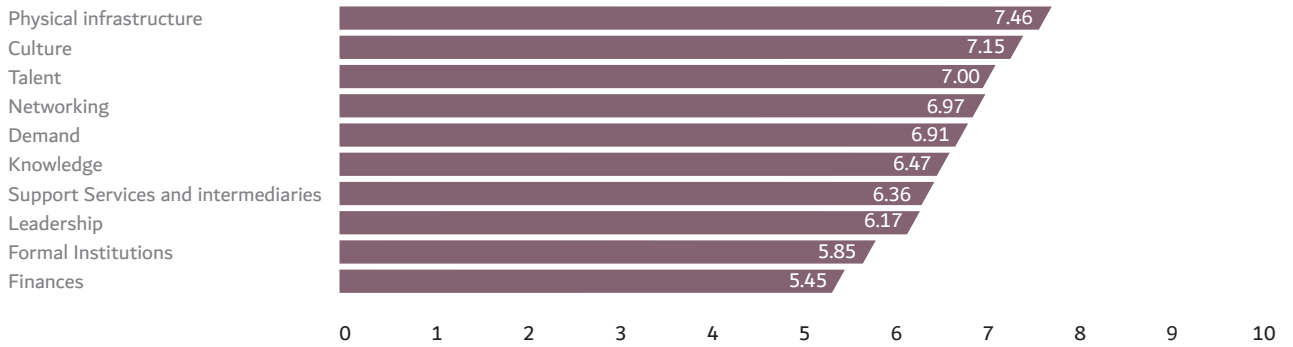
Diagnostic for the Demand pillar in Abu Dhabi the year 2019

- The Demand pillar has a quite positive evaluation with an average score of 6.91.
- The strongest component of this pillar (7.67) is the openness of Abu Dhabi consumers to new and innovative products and services.
- The weakest component (5.79) is the preference of customers, if possible, to buy goods and services which are produced by local firms. This is somewhat offset by the belief that most new and growing firms can sell their goods and services locally (7.35), and that many first customers are located within the region (6.82). This suggests it would be good to support more locally produced goods and services.
- Finally, experts are moderately optimistic about the easiness to access markets outside of the region (6.99).

The Abu Dhabi ESI composite index and its components

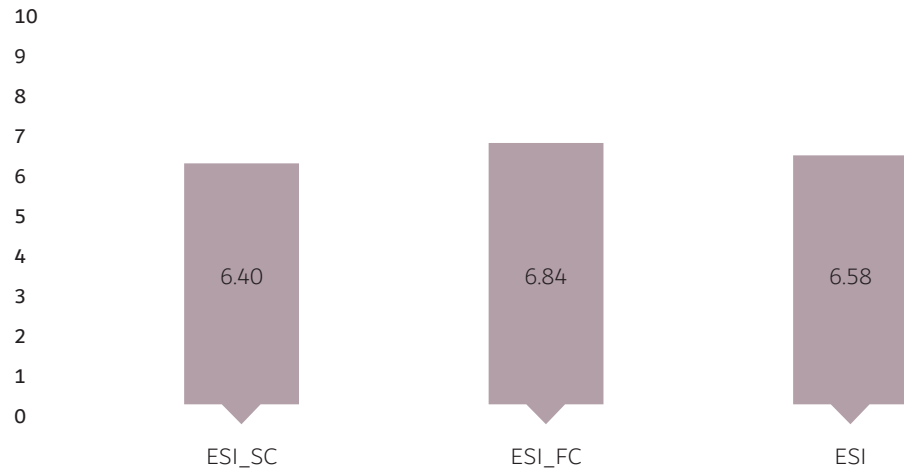
The ESI composite index is calculated as an average of its two components: the sub-index that represents the entrepreneurial ecosystem systemic conditions (ESI_SC) and the sub-index that represents the entrepreneurial ecosystem framework conditions (ESI_FC). In turn, these sub-indexes are calculated as simple averages of the pillars that form them. A summary of the overall performance of the individual pillars is presented in Figure 14 below.

Figure 14. The average quality of the 10 pillars of the Abu Dhabi ordered from stronger to weaker

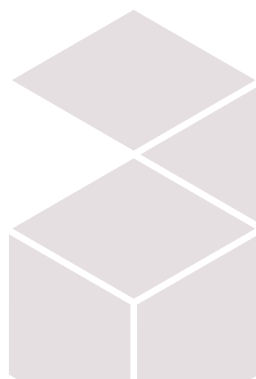


The ESI score represents the average quality of the main components of any entrepreneurial ecosystem. Measured by a ten-point scale this composite index allows benchmarking among different entrepreneurial ecosystems and is useful to rank them and show their relative positions. The value of this index and its components for Abu Dhabi is presented in Figure 15.

Figure 15. The ESI composite index and its components in Abu Dhabi the year 2019



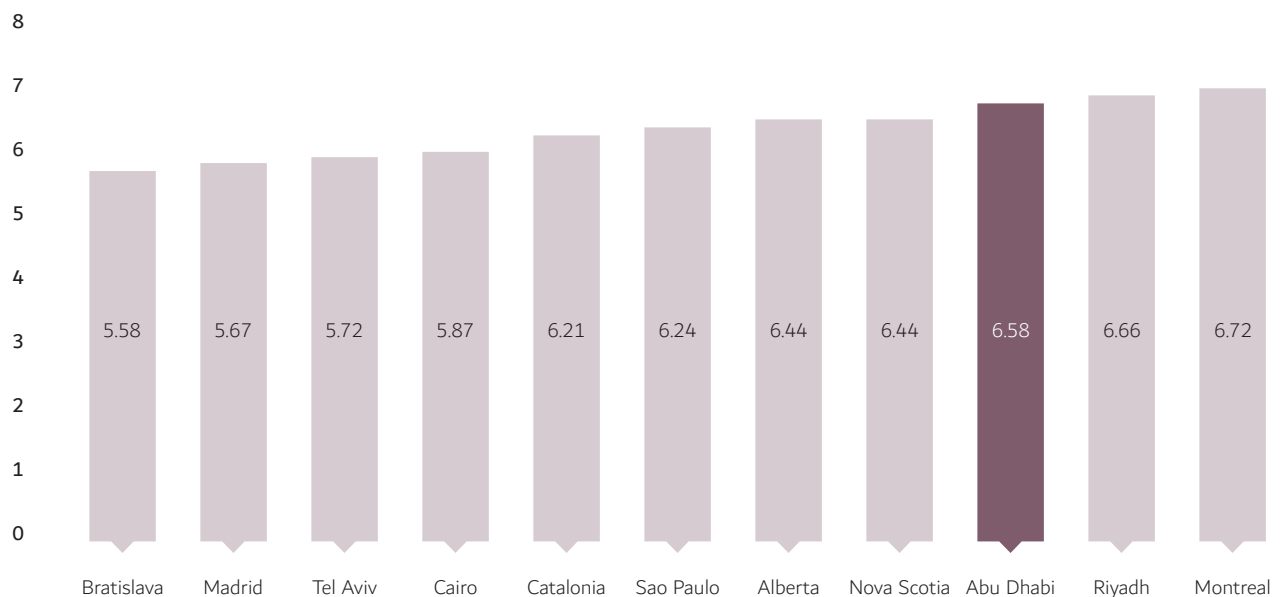
Note: the ESI_SC index represents the average quality of the conditions identified as systemic for Abu Dhabi the year 2019 (N, L, T, K, S, C), while the ESI_FC represents the average quality of the framework conditions (F, G, P, D) and the ESI the overall quality of the Abu Dhabi entrepreneurial ecosystem.



In 2019, Abu Dhabi achieved a score of 6.58, representing the slightly above average quality of its regional entrepreneurial ecosystem. The result is moderately positive. The index is composed by two components that represent the systemic and framework conditions of the entrepreneurial ecosystem. The average scores of these components reveal that the six components identified as systemic (networking, leadership, talent, knowledge, support services and demand) in the composite index (6.40) and in total, have a slightly stronger impact on the overall ESI index than the total of the 4 framework conditions (financing, formal institutions, physical infrastructure and culture) with 6.84. This suggests that the Abu Dhabi entrepreneurial ecosystem has stronger framework conditions, and that, although there is room to improve both sets of conditions, the systemic conditions need more attention right now to balance the context.

Figure 16 presents an international comparison of the Abu Dhabi entrepreneurial ecosystem with other regions. Abu Dhabi performs well, placing third only slightly behind Riyadh (6.66) and the leader Montreal (6.72), and slightly ahead of Nova Scotia (6.44), Alberta (6.44) and Sao Paulo (6.24).

Figure 16 : ESI Index Composite International Comparison



In conclusion, Abu Dhabi enjoys a moderately high-quality ecosystem, where physical infrastructure, culture, talent, networking, and demand stand out as the strongest pillars. This provides an optimistic platform to develop innovative and high growth entrepreneurship. However, to improve the entrepreneurial ecosystem, stakeholders should pay attention to the financing, formal institutions, leadership, support services, and knowledge.

Conclusions and recommendations

The GEM-ESI study on the Abu Dhabi entrepreneurial ecosystem provides the following recommendations:

1. Support entrepreneurs' awareness of local communities, businesses, mentors, and investors networks to make it easy for them to establish professional and business contacts, receiving advice from and interacting with other ecosystem's actors.
2. Support diversification of funding for entrepreneurs beyond the government financing sources and facilitate creating private associations of business angels and improving equity and debt funding in the Emirate.
3. Provide grants for specific startups in alignment with the Emirate focus areas and the Abu Dhabi Economic Vision 2030.
4. Support attracting quality and quantity of highly skilled workers in the Emirate through talent packages that reduces living costs and specific visa options that facilitates temporary employment and mobility between companies.
5. Reform higher education to support creating highly skilled workforce in the relevant industries.
6. Support knowledge sharing and technology transfer by activating the triple helix model collaboration.
7. Support providing entrepreneurs with a one-stop-shop for business set-up and reducing bureaucracy burden for licensing requirements.
8. Enforce government policies such as public procurement to secure business opportunities for entrepreneurs.
9. Create a strong cultural support for "Made in UAE" and confidence in consuming localized products to support local entrepreneurs against the established international brands.
10. Make services and infrastructure more accessible and affordable and allow business registration with virtual office spaces when applicable.

