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Middle East & North Africa Talent Competitiveness Index 2015

A regional version of the Global Talent Competitiveness Index, Bruno Lanvin and Paul Evans editors.

Acknowledgements

The *MENA Talent Competitiveness Index* (MTCI) has been prepared by a working group of experts across academia and the public and private sectors. This report has been produced through leveraging existing data sets from the *Global Talent Competitiveness Index* (GTCI), along with extensive research, discussions and inputs from the experiences and expertise of various parties active within the talent competitiveness space in the Middle East & North Africa (MENA) region.

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Middle East & North Africa Talent Competitiveness Index 2015

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Letter from INSEAD and Centre for Economic Growth

In January 2015, the second edition of the GTCI was launched in Davos under the title *"Growing talent for today and tomorrow"*. In June 2015 – and for the first time ever – a region specific version of this report is being launched, devoted to the MENA region. Drawing upon the global findings of the GTCI, this report focuses on the particular opportunities and challenges in that region as they pertain to growing, retaining and attracting talent.

For the MENA region as a whole, demographics are both an important challenge and a unique opportunity: 65% of its population is under the age of 25, requiring the creation of some 100 million new jobs over the next two decades, but also representing a formidable source of dynamism and innovation. In order to meet the demands of a connected and hopeful generation of 'digital natives', governments, private sector organizations and civil society need to identify, develop and stimulate talent that is aligned with their national visions, economic priorities and business needs.

This MENA version of the GTCI offers a benchmarking tool to assess how various countries in the region are progressing in developing their greatest asset, i.e. their human capital. This first version of the MTCI report includes data on nine countries and examines in more detail six core areas that are critical if the region is to attain its development goals including leadership, women's roles in the workforce and skills development.

This report was a unique collaboration between INSEAD, the Centre for Economic Growth in Abu Dhabi, the Human Resources Development Fund (HRDF) of the Kingdom of Saudi Arabia and PwC. We are grateful to HRDF for their support and guidance and their insights into the challenges facing labour markets in the Gulf Cooperation Council (GCC) and in the Kingdom of Saudi Arabia. We are also thankful to PwC for their time and cooperation and identifying the pillars of talent growth that need to be enhanced in the region.

We sincerely hope that the MTCI will serve as a yearly benchmark and action tool for policy makers, private sector organizations and thought leaders and welcome feedback and guidance for future editions.

Dr. Bruno Lanvin
Executive Director, Global Indices
INSEAD

Patricia McCall
Executive Director
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Letter from PwC

We are privileged and honoured to have worked on this report in collaboration with INSEAD and the Human Resources Development Fund. It's our pleasure to present to you – policy makers, academic institutions, public sector and private sector partners and employers – our findings and policy recommendations in support of talent development and growth in the MENA region.

Talent is the key differentiator to any entity and the competition for talent is as fierce as ever. Nowhere is this more true than in the Middle East and North Africa region. We witness this every day with our clients, in the public and private sectors and across countries, who are continuously looking to transform and further develop their strategy and approach to promote and support talent.

Looking at the findings of the GTCI across nine MENA countries, we have highlighted six key focus areas for the region's talent competitiveness agenda and proposed a set of policy recommendations around each of these focus areas for government policy makers, employers, and academic and training institutions.

The six focus areas are to build employable skills, promote openness and mobility to enable talent growth, foster the next generation of leaders, develop technology and ICT skills for the 21st century economy, cultivate innovation and entrepreneurship talent and create an ecosystem for women's success.

We hope this report initiates, continues and advances discussions and debate around talent competitiveness, and encourages the collaboration and partnership across all talent development stakeholders.

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Letter from Human Resources Development Fund

The Kingdom of Saudi Arabia is at a significant turning point. From an economic standpoint, the need to drive greater levels of economic diversification has never been more pressing, to underpin both GDP growth and create sustainable jobs and opportunities for the national workforce.

From a social infrastructure standpoint, equipping young Saudis and future generations with the right support, skills and attitudes to fulfil jobs and encourage entrepreneurship and innovation is vital. For the Kingdom to thrive, both aspects are of equal importance and must be delivered together to meet the vision of a knowledge economy.

The HRDF has a central role in investing in the human capital development of Saudis to develop the workforce of the future. In particular, identifying and implementing labour programs that support young people, the unemployed, women and the socially disadvantaged to find and succeed in careers, be that as employees or business owners. And equally importantly, engaging and collaborating with private sector employers, education and skills providers and across government to ensure that solutions, policies, programs and incentives are practical and directly impact employment opportunities for Saudi nationals.

The HRDF recognizes that challenges and opportunities for economic growth and job creation vary on a sector-by-sector basis. For this reason, at the heart of our strategy is providing differential investment in developing human capital that will have the greatest social and economic impact on the Kingdom.

With one of the highest social media usage rates in the world, Saudi Arabia is evidence of how the digital and technology revolution can change the way that government operates, businesses work and citizens go about their day-to day-lives. Investing in human capital in Information and Communication Technology (ICT) is therefore a strategic priority for the government, so as to supply the economy with the right talent, at the right time, with the right skills and in the right locations across the Kingdom.

In recognizing its role as a thought leader in the human capital domain in the region, the HRDF is delighted to sponsor this important benchmark study that is fully aligned with our strategy and vision for investing in talent development.

Dr. Ahmed Al-Zahrani
Deputy Director General
Human Resources Development Fund

Executive Summary[i]

Talent has never been more important than it is today. Technological advances, occurring at a much faster rate than previously thought, and ever-increasing global interconnectedness have created a knowledge economy which today relies more on talent than ever before. In regions such as the Middle East & North Africa, where large youth populations are coupled with high unemployment rates, there is an urgent need to understand what skills must be developed and how they are to be used in order to achieve progress on economic and social goals in an increasingly competitive world.

The following report seeks to examine and present actionable recommendations in six areas where the MENA region must focus its efforts in order to address labour market inefficiencies, develop national talent and ultimately drive long-term sustainability into the 21st century and beyond. MENA policymakers, academic and training institutions and employers should be: building employable skills, enabling greater openness, developing ICT skills, cultivating innovation and entrepreneurship, creating the ecosystem for women's success and fostering the next generation of leaders.

The MENA region has an average unemployment rate of 22% and 39% for males and females between 15-24 years old, respectively.[1] MENA countries suffering from high unemployment rates have to both stimulate job growth and ensure that young people graduate into the labour force with the employable skills and behaviours demanded in the 21st century labour market. To do so, MENA countries must align their educational curricula with the needs of the labour market (for e.g., emphasise Science, Technology, Engineering and Maths (STEM) subjects), establish vocational programs to prepare their students for high-value jobs rather than low-end skills and provide lifelong learning programs to allow the existing workforce to stay current with rapidly changing technologies and business dynamics.

Labour and immigration openness are highly controversial topics in all societies, not least of all in the MENA region. Although openness is a key factor that allows countries to compete for talent and effectively stimulates economic growth, it does present challenges to existing workers. MENA countries that adopt policies towards openness must adequately prepare their nationals to compete with the inflow of workers that accompany the easing of residency and visa restrictions. These countries must also be prepared for the outflow of their own citizens and must work to encourage these emigrants to eventually return with technology, skills and connections they can then leverage in their home countries.

Economies are becoming more globalised, exposed to technological shifts and opportunities arising from increasing digitisation across the world, with an increasing demand for workers with ICT skills. To prepare for this demand, which to date outstrips supply, policy makers and business leaders in the MENA region must not only prepare IT-skilled workers through education and training, but also support IT-savvy policy development as well as lead the private sector to drive the technology and ICT agenda for countries in the long-term.

The pressure on countries to cultivate innovation and entrepreneurship talent has also increased as the global economy becomes more open and competitive. Innovation, which drives the development of new ideas and entrepreneurship, which brings these applications to market, are present in some MENA countries but significantly lacking in others. To grow both, MENA countries must prepare and train their students from an early age to be creative, adaptable thinkers, create opportunities for them to exercise these skills in real-world environments and develop a talent, business and intellectual property (IP) ecosystem to support such innovators and risk-takers.

Women in the MENA region are active in seeking educational opportunities, but their numbers in the workforce are not increasing in the same way. Cultural forces, social norms and individual mindsets contribute to their limited participation in the labour force, as societal pressures place priority on domestic responsibilities and familial commitments. Innovative strategies will aim to target women in different stages of their careers to encourage their engagement. Flexible job design, work readiness schemes to ease the transition from school to work and reskilling and recertification programs for returning mothers, will collectively improve women's potential for career growth and success.

[i] Report prepared by PwC
[1] Mottaghi (2014)

In order to develop and implement all the above initiatives in a successful and sustainable manner, countries in the MENA region must strive to develop the next generation of leaders. These leaders must be able to work in volatile, uncertain, complex and ambiguous (VUCA) environments. Organizations across government, private sector and academia will need to develop programs to identify and gauge leadership talent and harness their ability to work in VUCA environments. Through higher education programs in leadership development, job shadowing, rotational programs sponsored by private firms and mentorship and coaching guidance provided by existing leaders, MENA countries will be able to develop local leadership talent to direct MENA organizations in the future.

Introduction

In order to address its most urgent social and economic needs, it has been estimated that the MENA region would need to create over 100 million jobs from 2000 to 2020.[2] The current demography, skills disparities and low economic growth that affect the region have led to high youth unemployment levels and increased expectations of economic reform. Considering the significant growth and competitiveness potential of the MENA region, it is becoming clear that the way in which talent is developed, attracted and retained will play a critical role in unleashing the potential of the region in the years to come. Although many governments in the region have identified talent development as a key priority in their medium-term plans, governments are still lacking reliable metrics to produce the necessary performance indicators and comparison tools to guide and monitor efforts to support informed decision making on key policy interventions. There are significant opportunities to foster discussion, policies, best practices and lessons learned from pioneers in the region.

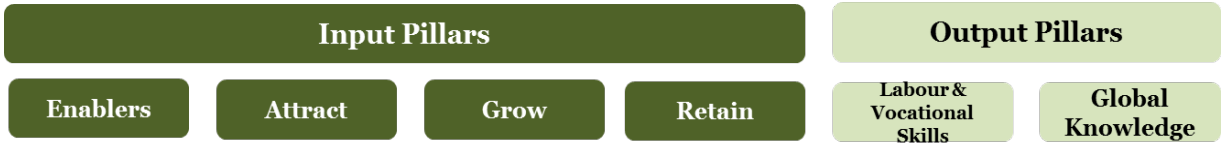
INSEAD's GTCI, now in its 2014 edition, ranks over 90 countries across six pillars to determine their ability to compete for global talent. INSEAD has partnered with the HRDF in the Kingdom of Saudi Arabia and PwC to leverage the GTCI and its underpinning methodology to produce the MTCI. It examines the findings of the GTCI for the MENA region and aids regional policy makers, educational institutions and other interested parties to identify policies and actions to support talent development and growth – from the local population, as well as through selective attraction of expatriate workers. The 2014 GTCI focuses on the theme of growing talent for today and tomorrow, which is reflected in this MTCI report.

The goals of this report are first, to provide the quantitative tools to help improve policy decisions and business strategies in the MENA region with respect to developing, attracting and retaining talent, second, to enhance the quality and effectiveness of business-government-education interactions in the area of talent and stimulate the emergence of innovative approaches in this regard, and third, to attract worldwide attention to the talent-related policies designed and implemented in the MENA region, with a view to further mutual exchange between efforts made in the region and experiences gathered from other parts of the world.

This report builds on the findings of the GTCI data for nine Arabic-speaking countries in the MENA region: the Kingdom of Saudi Arabia, Qatar, the United Arab Emirates, Yemen, Lebanon, Egypt, Algeria, Tunisia and Morocco, noting that several additional countries narrowly missed being included because the necessary threshold coverage of indicators were not met. The recommendations in this MTCI report are intended to provide regional leaders and policy makers with actionable steps that can be tailored to craft country-specific solutions to human capital challenges. The GTCI suggests key performance indicators and serves as a benchmarking tool against which the audience of this report can further investigate performance of talent growth and competitiveness.

The GTCI defines "talent competitiveness" as "the set of policies and practices that enables a country to attract, develop and retain human capital that contributes to its productivity (where productivity is defined as Output per unit of Input)."[3] The GTCI is built on a framework of six themes: four *Input* pillars of *Enablers, Attract, Grow and Retain and* two *Output* indicators of *Labour and Vocational Skills* and *Global Knowledge,* further broken down into 14 sub-pillars. The GTCI report should be consulted as a reference compendium to this MTCI report since it provides a detailed presentation of the methodology, definitions of indicators and ranking and reporting of all countries against each indicator.

Global Talent Competitiveness Index (GTCI) Framework



[2] World Bank (2004)
[3] GTCI (2014)

This MTCI report identifies six relevant topics drawn from the GTCI 2014 report to examine in further detail in the MENA context. The first section, *Building employable skills* calls attention to the shortcomings of MENA's educational systems in preparing current and future students for careers in the 21st century, which will require a flexible skill set to remain competitive across local, regional and international markets. This section also highlights the importance of vocational training and re-skilling opportunities to support an alternative path for both young and older workers to be prepared with the skills and knowledge that set them up for attractive and competitive jobs. The second section, *Promoting openness and mobility to enable talent growth* addresses how the conditions of openness are affected by labour policies, the business environment and national economic competitiveness, as well as the positioning of a national workforce value proposition that is sufficient to retain nationals and attract expatriates.

MENA Talent Competitiveness Index (MTCI) Topics

- Building employable skills
- Promoting openness and mobility to enable talent growth
- Developing technology and ICT skills for the 21st century economy
- Cultivating innovation and entrepreneurship talent
- Creating an ecosystem for women's success
- Fostering the next generation of leaders

While the first two sections (1 and 2) examine factors which facilitate talent growth in the MENA region, the next four sections (3, 4, 5 and 6,) examine selected critical profiles that the current and future labour force in the MENA region must possess in order to drive economic competitiveness as well as social development. The third section, *Developing technology and ICT skills for the 21st century economy* addresses the imperative to produce talent with ICT skills – which is a critical gap in MENA markets – as the use of technology has become increasingly widespread and permeates just about every industry in every country, dictating the way people spend their time both at work and outside of it. The fourth section, C*ultivating innovation and entrepreneurship talent* acknowledges the importance of small-scale entrepreneurs and the power of innovation to enable problem solving and efficiency gains throughout society and firms. The fifth section, *Creating an ecosystem for women's success*, highlights how the MENA region can empower all of its nationals through training, mentorship and educational programs to drive inclusive growth, while the sixth section addresses the importance of *Fostering the next generation of leaders.*

MTCI Countries

High Income Countries:	*Upper-Middle Income Countries*:	*Lower-Middle Income Countries*:
• United Arab Emirates (UAE)	• Lebanon	• Egypt
• Qatar	• Tunisia	• Morocco
• Saudi Arabia	• Algeria	• Yemen

An analysis of the GTCI data was undertaken primarily by the comparison between a country's score on an indicator, sub-pillar or pillar and the average of that score for the full cohort of countries in that income group category. The analysis attempted to highlight sub-regional similarities, where relevant, for e.g. amongst Gulf Cooperation Council (GCC) countries or North African/Maghreb countries. This report leverages INSEAD, HRDF and PwC's knowledge of these topics in the region to apply the lens of the GTCI and highlight potential policy recommendations. The report is intentionally broad and is meant to provoke discussion, debate and provide useful directions for practical action.

1. Building employable skills

MENA countries face high unemployment rates while experiencing a shortfall in required workforce skills. Policy makers, employers and education and training organizations must do more to identify high-demand skills, orient education and training towards producing workers with those skills and support the existing workforce to keep their skills current and avoid becoming obsolete. The MENA region has an average unemployment rate of 22% for young males and 39% for young females between 15-24 years old.[4] Countries with high unemployment, especially among youth and young workers, face the dual challenges of stimulating job growth and ensuring that young people graduating from school, university and training are prepared with the employable skills and behaviours demanded in the 21st century labour market. Namely, workers must be prepared to enter the labour market and manage career growth in a world in which technological change and global inter-connectedness require an increasingly adaptable workforce.

MENA countries still face difficulty producing graduates who meet the needs of the labour market, even though education reform, including upgrades to teacher selection and training, curricular reform and better use of technology, has been on policy agendas across the region. The report titled *Enabling Job Creation in the Arab World, A Role for Regional Integration*, collaboratively authored by PwC and the Human Resources Development Fund (HRDF) identifies that "...Arab countries' unemployment rates are highest among the most educated segments of the youth population," underscoring the mismatch between educational systems and job market needs. Furthermore, Science, Technology, Engineering and Math (STEM) subjects have been noted as the most valuable fields in today's competitive job market, "but the MENA countries produce relatively fewer students in these fields compared to many other rising developing nations. Around the region, science, technology and engineering programs represent 22.6% of university enrolments on average, compared to 30.8% in Asia." As such, most MTCI countries have low graduation rates in the sciences: Algeria, Lebanon, Qatar and the UAE graduated between 5% and 12% of students in STEM fields. Saudi Arabia and Tunisia are exceptions, where between 20% and 25% of graduates completed science programs in 2012.

These statistics illustrate that MENA educational systems, their curricula and instructional methods and quality of teachers are not effective in engaging students and equipping them with the basic foundational skills in literacy and numeracy needed to prepare them for careers in the competitive 21st century labour force, nor are they producing enough graduates with needed technical specialties. This insufficiency has also been acknowledged by business leaders, for example, the CEO of DDB Gulf, a highly ranked advertising agency, who believes that "...the challenges are bringing high-quality talent into the region, making them interact with local talent and retaining that talent, so that overall standards can go up."[5] In addition, cultural forces and perceptions should also be diminished in hiring practices to fight against "stickiness" in the labour market, whereby people do not actively seek improved job opportunities. For example, a survey conducted by PwC's International Survey Unit found that across 20 countries in the Arab world, 69% of respondents believe nepotism contributes to youth unemployment figures, because young people don't believe that choice jobs could be available to them in the absence of a personal connection and therefore don't seek the opportunities.[6] Likewise, challenging private sector jobs are passed over in favour of obtaining or remaining in comfortable public sector jobs.

Three factors must be addressed in order to ensure that young people in the MENA region are able to enter the job market and help drive economic growth. The outcomes of formal education should be aligned to the needs of the labour market. Vocational training should focus on preparing students for high-value jobs rather than on low-end skills and students from both tracks should receive job-hunting and career coaching to increase their awareness of job options. Finally, the existing workforce should have access to training and re-skilling during their careers in order to stay current with rapidly changing technologies and business dynamics.

[4] Mottaghi (2014)
[5] International Advertising Association (2015)
[6] PwC (2013)

Align educational curricula with the needs of the labour market

The failure of formal education systems in the MENA region to provide youth with the in-demand skills needed to find employment is a key element that must be tackled if countries are to effectively address youth unemployment and grow their talent pool. PwC's 18th Annual Global CEO Survey revealed that 75% of MENA CEOs are concerned about a lack of availability of key skills to their growth prospects. Furthermore, 87% of MENA CEOs are looking for a much broader range of skills than in the past, so workers have to possess not only today's job-specific skills, but must also be flexible and adaptable life-long learners of new skills to meet firms' changing needs.[7]

Growth of a university-educated population and workforce requires that primary and secondary schools successfully develop the appropriate skills and knowledge of students, but educational performance in the MENA region is below global standards. Of the nine selected MENA countries, the UAE, Qatar and Tunisia participate in the Programme for International Student Assessment (PISA). PISA is an international survey administered by the OECD which evaluates education systems worldwide by testing the skills and knowledge of 15-year old students.[8] All three countries scored at least 40% below the average of OECD countries. The Brookings Institution has collected similar data on education for 13 Arab countries and found that across the region, "the average proportion of children not learning while in school stands at 56 percent at the primary level and 48 percent at the lower secondary level," as determined by the proportion of tested students in Grade 4 and 8 that fail to meet minimum literacy and numeracy thresholds.[9] The countries which face the most severe challenges are Morocco, Yemen and Kuwait, each with over 70% of primary school children failing to meet the minimum thresholds. To mitigate this challenge, schools should participate in national and international testing, thereby creating a benchmark to compare students in the MENA region to students in other OECD countries and contributing to a business case for undertaking sweeping educational reforms. With appropriate training and encouragement by the government and educational institutions, students will be enabled to meet international standards of numeracy and literacy and graduate with employable skills in the coming years.

Table 1.1 illustrates the performance of the nine selected MENA countries across key GTCI work-readiness indicators. *Tertiary enrolment* scores for the selected MENA countries are at least 20% below their income cohort averages, with the exception of Lebanon and Egypt, which are near average. On the GTCI sub-pillar of *higher skills and competencies*, all GCC countries, Morocco and Algeria score below 30% of their income cohort averages while Egypt and Lebanon score above 30% of their income cohort averages. The high scores of Egypt and Lebanon can be attributed to strong historical investments in both Islamic educational traditions and secular education introduced through western colonialism.[10] Barring these two countries, the GTCI statistics underscore the low performance of educational systems in the MENA region, with lower levels of university preparation and poorer outputs of competitive skills and aptitudes when compared to their income cohort counterparts.

Bahrain National Strategy

The Higher Education Council of Bahrain has developed a national higher education strategy to set out the vision and objectives to improve outcomes of the Bahraini education system for the next ten years. The Strategy focuses on six strategic themes: quality for impact, skills for the future, strategic access, Bahrain as a first choice education destination, Ed-tech Bahrain and Start-up Bahrain.

The Strategy aims to improve the excellence, relevance and agility of the higher education sector to provide a workforce capable of dealing with the increasingly complex demands of the global economy, attract high value investment and create jobs through entrepreneurship, increase the research base to lead to innovation of new products and services and impact positively on GDP and improvements in living standards. This is complemented by a national research strategy that details five strategic objectives: establish a national research governance infrastructure, strengthen university research capacity, strengthen integration of academic, international and specialist entities, improve public awareness and understanding of research and innovation and address national research priorities.

Source: Higher Education Council of Bahrain, "National Higher Education Strategy 2014-2024: Putting Higher Education at the Heart of the Nation" and "National Research Strategy 2014-2024: Creating a Smart Bahrain based on Knowledge & Innovation"

[7] PwC (2015)
[8] OECD (2015)
[9] Brookings Institute (2014)
[10] Ashkenazi (2009)

Table 1.1: Global Talent Competitiveness Index - MENA Countries: Select Work Readiness Related Indicators

Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
MENA Region	GCC	GCC	GCC		Levant+	Maghreb	Maghreb		Levant+	Maghreb	Levant+	
Grow	**54.78**	**54.66**	**45.43**	**56.92**	**45.50**	**33.15**	**22.51**	**40.38**	**29.56**	**29.01**	**24.54**	**34.00**
Tertiary Enrolment	n/a	8.33	48.44	65.37	43.61	32.17	28.31	40.23	25.51	12.48	6.41	24.46
International student inflow	100.0	100.0	17.76	37.09	58.94	2.45	2.53	12.04	8.52	8.87	19.59	7.14
University ranking	29.09	8.43	43.95	47.40	22.99	0.00	0.00	21.34	28.55	0.00	0.00	9.13
Lifelong Learning	67.07	74.43	53.98	61.88	60.79	49.08	28.17	50.31	26.43	44.12	24.16	42.69
Global Knowledge	**29.28**	**25.36**	**37.58**	**44.91**	**30.73**	**31.21**	**13.70**	**27.02**	**22.26**	**13.46**	**22.50**	**21.49**
Higher Skills and Competencies	34.14	31.57	29.87	49.68	33.44	28.57	16.74	25.04	27.09	12.23	16.42	20.44
Tertiary-educated workforce	23.74	n/a	30.64	49.57	36.53	28.45	21.38	31.62	28.11	11.28	9.76	21.97
Tertiary-educated Population	29.87	34.75	34.91	46.81	25.50	20.77	n/a	25.46	n/a	n/a	n/a	21.90

Source: GTCI Report 2014

Professional HR departments at larger employers can contribute to increased alignment by articulating and sharing descriptions of their high-demand competencies and skills. By collaborating with private sector employers to identify the required competencies, MENA governments can set standards for learning outcomes and monitor progress. Academic and training institutions can partner with government to reform curricula and introduce necessary additional learning modules.

A national skills strategy could be implemented in MENA countries to bring together employers and government bodies across multiple sectors to identify the skills that are currently in demand and that must be available to fuel national economic visions. This helps governments strengthen their skills systems by designing and implementing an evidence-based national skills strategy, funding skills through public and private sources and designing effective incentives for employers and individuals.[11] This has a proven track record, including in Sweden where, for example, the Adult Education Initiative aimed to advance adult education as a means of promoting inclusive economic growth. Through counselling and orientation courses, special education grants, short term study grants and other forms of student aid supplied to municipalities directing local job centres, the initiative resulted in "higher participation rates in adult education, validation of learning outcomes, increased personal incomes, better cooperation between the education system and trade unions and the involvement of many new educational providers."[12]

[11] OECD (2015)
[12] Ibid.

Align vocational training to fields in high demand

An effective vocational training system is an important part of the system for preparing workers and growing talent. As an alternative to traditional education, vocational education should provide practical, industry-specific training to enable graduates to move quickly into competitive jobs. Traditionally, vocational training has been viewed as a means of reducing unemployment among low-skilled workers. However, this perception should be changed and vocational training should be part of the national effort to become competitive. Vocational training can focus on fast-track training for well-paying jobs, for example in industries such as oil & gas, information technology (IT), manufacturing, utilities, hospitality and retail.

Expanding vocational training offerings to prepare workers for jobs in sectors that can drive the economy will raise the profile of such training, resulting in more students being attracted to this track. By teaching the precise skills required by private industries at high-quality standards, MENA vocational training institutes can empower fresh graduates and the jobless by enhancing their skill sets, match certified employees to enterprises and raise the skill and income levels of a broad section of workers. Furthermore, vocational training institutes can supplement skills training with coaching and mentoring to help students understand how to seek, hold and succeed in jobs.

According to the GTCI, vocational enrolment scores are more than 30% below income cohort averages for most of the MENA countries. These scores report the percentage total number of students enrolled in vocational programs at a given level of education out of the total number of students enrolled in all programs (vocational and general) at that level. The exceptions to these low scores are Egypt, which scores more than 30% greater than other lower middle income countries and Lebanon and Tunisia which are slightly above average. Correspondingly, Egypt, Morocco and Tunisia have high scores for vocational skill-intensive exports, (Egypt +20%, Morocco and Tunisia +40%), which could indicate a positive feedback loop where workers with vocational skills are able to find jobs and people are compelled to complete secondary and vocational training because they are aware that they will be employable.

Human Resources Development Fund (HRDF), Kingdom of Saudi Arabia

The Human Resources Development Fund (HRDF) in Saudi Arabia was established as a financially and administratively independent legal entity, with the aim of "supporting national workforce training and employment in the private sector." HRDF is affiliated to the Ministry of Labour, with the Minister serving as the Board Director. The two organizations collaborate on many aspects related to the labour market and human capital development.

HRDF aims to provide a well-trained competent Saudi cadre to become a national workforce that is both competitive and stable through initiatives and programs that correspond to the needs of the labour market. The national program of Hafiz assists job seekers and provides them with rehabilitation, training and employment services. The Taqat program uses various employment channels that serve to facilitate the employment of job seekers in the private sector.

The Doroob initiative exemplifies HRDF's commitment to talent development in Saudi Arabia by increasing the employability of Saudi youth. This initiative provides products and services targeted to improve four key areas: critical employability skills, attitude and work-ethic, work-relevant experience and job searching skills. In addition to offering e-learning and on-the-job training to improve these four areas, Doroob also provides certifications for students to demonstrate their abilities to future employers.

HRDF has undertaken to develop high calibre Human Resource professionals as a source for Saudi national employment. An innovative HR Academy will develop national occupational skills standards, an accredited HR training program and a national HR certification program to accomplish this aim. HRDF has also developed a "Strategic Partnerships" program which aims to facilitate employment of Saudi job seekers in major private sector enterprises, a wage subsidy program associated with additional employment, programs which seek to place more females and people with disabilities into employment and many other programs and initiatives. In addition, HRDF also conducts research and studies related to labour market and national workforce rehabilitation and training.

Source: Human Resources Development Fund Guidebook: hrdf.org.sa/downloads/GuideBookEng.pdf

The cases of Egypt and Tunisia exemplify the positive outcomes of aligning vocational trainings and enterprise needs. When the appropriate structures are in place and public and private sectors collaborate to ensure relevant trainings are delivered and that graduates are easily able to find work that makes use of their new skills, vocational careers are perceived as respectable alternatives to traditional educational paths. Through clearly articulating the value proposition for vocational and technical training, programs can attract and retain students, provide them with practical skills and capabilities and then funnel these resources into the enterprises which need those most, thereby reducing unemployment and creating a more productive economy.

MENA countries should continue to expand and refine their vocational training strategies, examining international best practices and replicating successful programs to fit the needs of their markets by placing and sustaining workers in competitive careers. Vocational education providers and companies should work closely to ensure that training courses are aligned with the most in-demand skills, particularly in technology and other high-priority fields. Partnerships can also provide students with a mix of formal classroom instruction and on-site training or other exposure to companies, benefiting both students through exposure to work environments and firms through access to a pipeline of reliably-skilled workers. Furthermore, training developed by cluster or industry organizations can also cater to specific industry needs, sponsored by groups of employers. Altogether, a reliable and sustainable pipeline of competent employees will be created.

Support lifelong learning and raise awareness of mid-career training and re-skilling

Lifelong learning involves accessing formal, non-formal and informal patterns of learning throughout an individual's career. Support for ongoing learning by the existing workforce is necessary to ensure that the skills and knowledge of the active workforce are kept current and that previous investments in education, training and on-the-job experience are not wasted as skills and knowledge become outdated. Rapid technological advances and changing global patterns of interaction contribute to the mega-trend of an increasing pace of change across many sectors. The national workforce has to renew and refresh existing skill sets and acquire additional capabilities on an ongoing basis to keep competitive in the 21st century.

Education for Employment

Education for Employment (EFE) is a non-profit network with a mission "to create economic opportunity for unemployed youth in the Middle East and North Africa (MENA) by providing world-class professional and technical training that leads directly to jobs and entrepreneurship support." EFE's core service provides job training and placement to unemployed youth. Through direct outreach, targeted research and contacts with board s of directors and influential business leaders, EFE seeks to understand the professional and vocational skills in demand by local employers, from small and -to-medium enterprises to multinational corporations. It then develops training programs tailored to these labour market demands and works to place provide job placement program to program participants into jobs. Where possible, EFE also seeks to secure job commitments with businesses prior to commencing the training.

EFE has placed graduates in job fields as varied as construction management, HVAC installation and repair, ICT, teaching, banking and e-commerce. EFE has also expanded to offer a "pathways" program to help guide current students to work by providing job search skills, internship opportunities and employability skills training, enabling youth to become aware of opportunities in their region and equip them with CV, search and interviewing skills. In Morocco and Tunisia, EFE affiliates have created partnerships with universities to increase the capacity of these institutions to support students to transition to work. Finally, EFE supports youth entrepreneurs with new business skills training and connections to mentoring and financing.

The EFE Network is comprised of locally-run affiliates in Egypt, Jordan, Morocco, Palestine, Tunisia and Yemen and a presence in the Gulf, with and support organizations in the USA, Europe and the UAE that support the regional affiliates. Over the past decade, EFE has supported over 30,000 youth across the region in their quest for meaningful work and a brighter future.

Source: Education for Employment website: efe.org

Lifelong learning enables the current workforce to pursue further knowledge and skills development by taking on new responsibilities and experiences at work, participating in formal on-the-job training programs, pursuing career-related off-site education such as advanced degrees and certificates and receiving career guidance through coaching, mentoring and structured growth programs offered by employers.

Raising expectations among modern employees that they will have to upgrade their skills throughout their career will help develop mindsets that embrace change and new opportunities. These workers will learn to adapt to new markets and cultures, ideas, systems and methods of working. Possessing the flexibility, adaptability and ability to deal with change will not only be an asset for existing employees, but will help companies to stay competitive within continuously evolving market dynamics. One way to foster adaptable, learning-oriented employees is for companies to encourage their managers, leadership and technical specialists to gain cross cultural exposure by participating in international projects, trainings and exchanges.

MENA countries must raise awareness of the need for continuous learning and emphasise support to current workers as a core component of their human capital and competitiveness strategies. All stakeholders, policy-makers, employers and academic and training institutions can and should participate. Governments can raise awareness of the need for ongoing training, develop incentives to support private sector firms that offer in-house employee training programs, offer public scholarships for continuing education and increase accreditation of executive education programs. Employers can routinely offer firm-based training programs at all levels and can sponsor employees to take courses at local institutions on a Part-time basis. Academic and training institutions can offer their courses as executive programs at rates and times that are aimed at adult workers. Programs can also be offered to adults who need new skills in order to transition out of Non-competitive jobs or return to the workforce after a period of inactivity, including programs specially aimed to support working mothers returning to work.

Summary of key steps to be taken by MENA countries

The table below summarises the steps government policy-makers, employers and academic and training institutions can take to improve openness of MENA countries:

Building employable skills

- *Align educational curricula with the needs of the labour market*
- *Align vocational training to fields in high demand*
- *Support lifelong learning and raise awareness of mid-career training and re-skilling*

Government policy-makers	Employers (public and private sector)	Academic and training institutions
• Collect and publish job-placement and educational acceptance rates • Accredit executive education and adult re-skilling programs; stimulate development of programs at vocational institutions and universities • Provide incentives to firms that develop in-house employee training programs or sponsor employees for continuing education • Improve K-12 educational outcomes in numeracy and literacy • Build critical thinking, teamwork and problem-solving skills necessary for work readiness • Promote flexible approaches to career-building to support re-skilling and continuing education	• Lead the development of internship and apprenticeship programs with secondary, university and vocational training partners • Sponsor or create cluster-based training programs in partnership with universities or academies • Implement firm-based training programs for employees at all levels • Implement global mobility at multinational corporations for rising managers, leadership and technical specialists • Identify and articulate high-priority competencies • Support pathways between work and education	• Create a competency-based framework for educational outcomes to drive curricular reform • Participate in national and international testing and set results-based goals • Improve teacher selection and training • Offer re-skilling courses to adult workers, including programs specifically aimed at supporting mothers returning to work • Build links to employers and support students to make the transition from school to work through counselling, internship experiences and job matching • Align vocational training programs with the labour market • Focus vocational training on in-demand skills, such as those related to technology

Cross-sector	• Implement and participate in a planning process such as a national skills strategy approach • Identify the critical skills and competencies necessary to support the long-term economic vision and link those to educational outcomes • Diminish negative cultural forces which contribute to the "stickiness" of the labour market

2. Promoting openness and mobility to enable talent growth

Labour and immigration openness is a key factor that allows countries to successfully compete for talent. By reducing residency and visa restrictions and acknowledging international qualifications, countries enable the inflow of expatriate specialists to the workforce and encourage the flow of national workers to travel abroad to gain education, training and experience and to return as productive workers. Greater regional integration also holds the potential to generate greater levels of economic competitiveness, improve export potential and strengthen the region's overall economy.[13] In order to compete for workers in an open environment, countries must offer workers an environment that enables the industries, services and ideas that drive the economy to freely connect to the rest of the world and to be effectively mobilized within those economies. The 2014 GTCI report highlights the importance of "openness [as] a key ingredient of talent competitiveness", underscoring the degree of fluidity among people, trade and investments as not only a consequence of globalization but also as key enablers of development.[14] The GTCI measures both external and internal openness, where external openness accounts for foreign direct investment, prevalence of foreign-ownership, migration flows and the degree of emigration and immigration of highly-trained skilled professionals. Internal openness is measured by the GTCI as the amount of tolerance to minorities and immigrants, the degree of social mobility and percentage of female tertiary graduates as well as the female-to-male earnings ratio.

The MENA region has a decidedly mixed track record of openness and its subsequent ability to retain and attract skilled labour to its countries, industries, communities and jobs where they can flourish is impacted. For example, GCC countries offer the most politically stable environments, are comparatively more open for industries and score highly on having a strong *tertiary educated workforce*. The UAE ranks in fourth place out of all 93 countries featured within the GTCI under the *Attract* pillar. The UAE ranks in third place for *external openness*, while Qatar ranks in fourth place and Saudi Arabia ranks in ninth place, each demonstrating favourable polices towards foreign labour, trade and capital. In order to attract and retain talent, MENA countries must offer a positive quality of life, presented through a national value proposition for the workforce. They must also adopt more flexible labour and immigration policies, while taking a balanced approach to reliance on national and expatriate workers. While, historically, governments in MENA countries have relied on public sector jobs to tackle unemployment issues, this reliance has had negative repercussions on the ability and willingness of nationals to work in the private sector. To counter this trend, MENA governments now have to reduce reliance on public sector hiring while improving opportunities for both nationals and expatriates in the private sector. Finally and to build on the gains made by implementing the first three recommendations, leaders in the public, private and education sectors should encourage and work towards the establishment of partnerships that leverage international technology and skills transfers across the regions.

Create a national value proposition to the workforce that establishes an environment to attract and retain talent

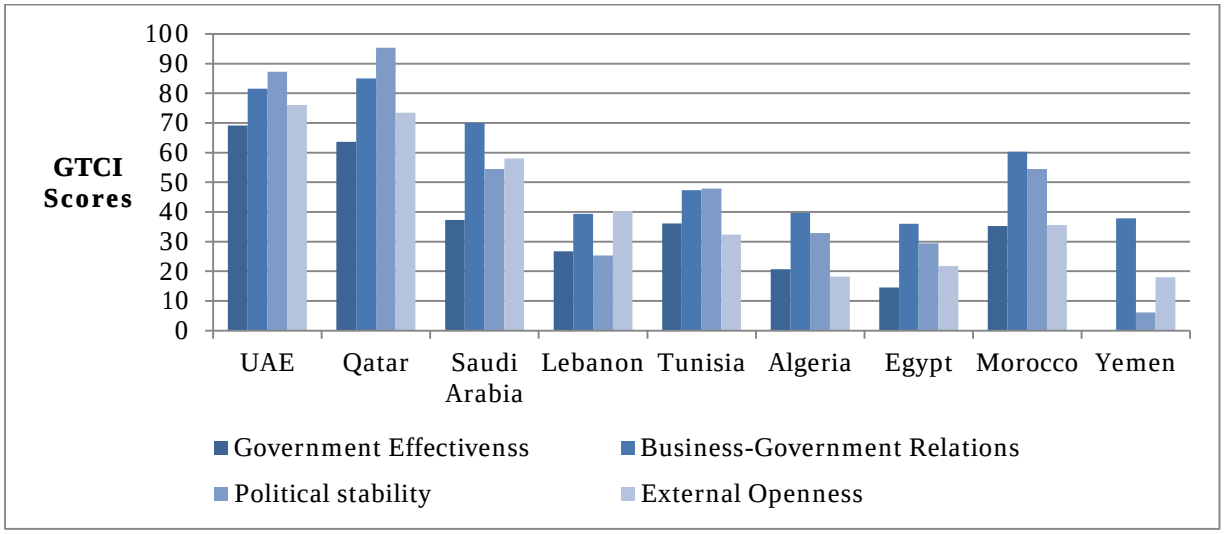
Job availability is a prerequisite for talent attraction, but the competition for regional and international talent can only be won by a country that displays a strong "workforce value proposition." A national workforce value proposition extends beyond remuneration and ease of labour flow (e.g., regulations for residency, labour permits, etc.), to address growth and professional development opportunities, as well as issues such as socio-political stability and quality of life, including the work environment for women, youth and minorities.

In terms of positive quality of life, several GTCI indicators are relevant to the development of a national workforce value proposition, addressing whether the government is effective in driving positive change and the country is a place where people can feel safe, be treated well and enjoy their lifestyle. Figure 3.1 illustrates country performance across *government effectiveness, business-government relations, political stability* and *external openness*. GCC countries offer the most politically stable environments and are comparatively more open for industries. Qatar ranks in second place overall within the GTCI in *business-government relations and the UAE ranks in fourth place*

[13] PwC (2013)
[14] GTCI (2014)

demonstrating cooperation between the business and regulatory communities in both GCC countries. The UAE and Qatar also tie for first place in *migration openness*, further demonstrating their successful abilities to attract and retain external labour.

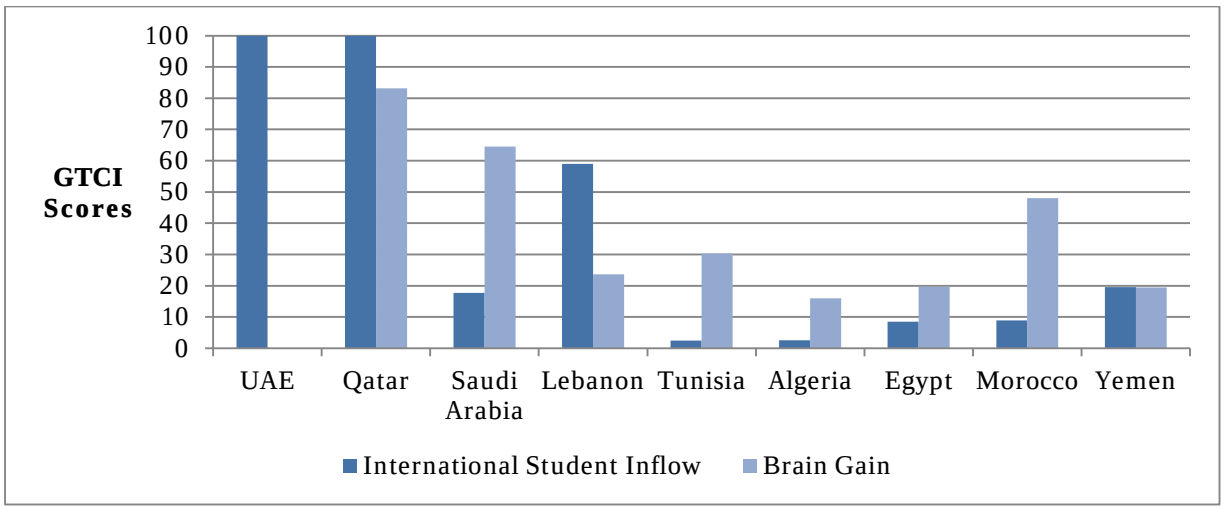
Figure 2.1: Governance and Openness



**Government Effectiveness data for Yemen: N/A*
Source: GTCI Report 2014

However, in terms of *tolerance to minorities*, the UAE and Morocco scored below average (<15%) and most other MENA countries score extremely poorly, with Lebanon, Tunisia, Algeria, Egypt and Yemen scoring more than 50% below average. To counter this, MENA countries should pro-actively protect against discrimination in the labour markets. Figure 3.2 indicates that the GCC countries and Lebanon, have a very high rate of migration, defined by the GTCI as the percentage of adult male and female migrant stock out of their male and female populations within their respective age group (above 25 years old).This is further supported by their GTCI ranks for *international student flow*, *brain gain and migration openness*, where Lebanon ranks in tenth place overall for *international student flow* and places in the top twenty for *migration openness* and as mentioned previously, Qatar and the UAE both rank in the top five for *migration openness and* Saudi Arabia ranks in fourth place for *male adult migrants.*

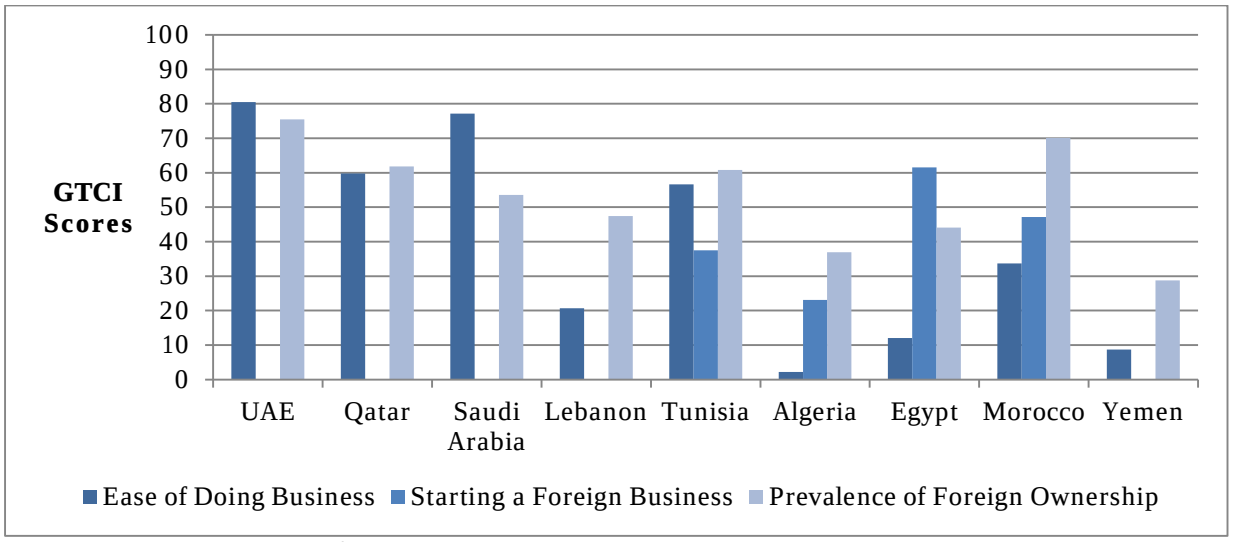
Figure 2.2: Inflow and Brain Gain



**Brain Gain data for UAE: N/A*
Source: GTCI Report 2014

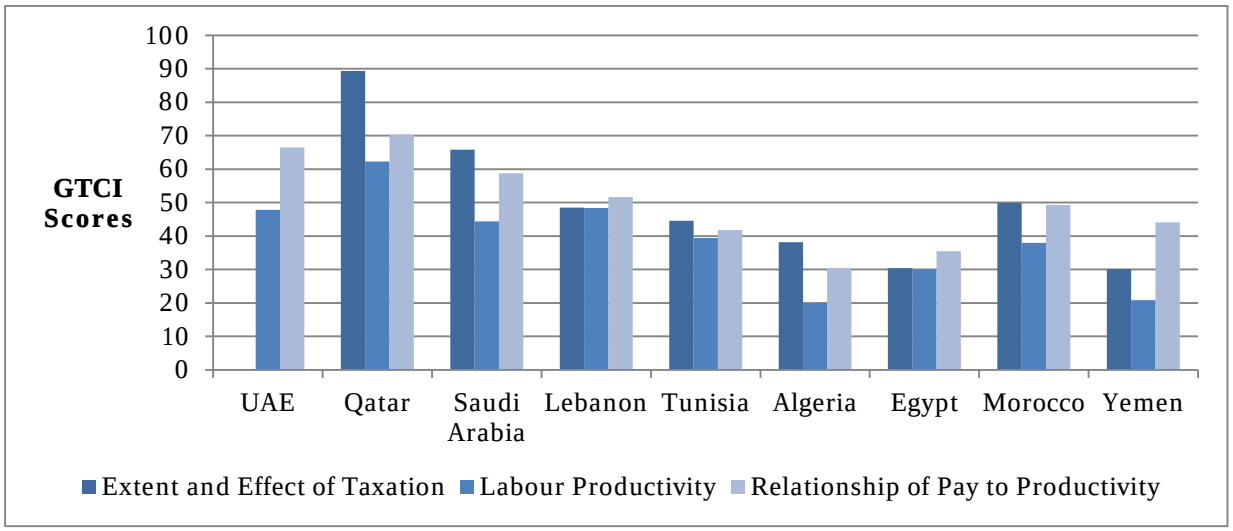
Part of the workforce value proposition must also address the question, *does this country have a conducive business environment?* MENA countries are uneven in this regard, both across countries and in terms of how individual countries perform across the indicators illustrated in Figure 3.3. In answering the question of whether the country is a place where people can find opportunities and are rewarded for work, the GCC performs well on indicators such as the *extent and effectiveness of taxation, labour productivity and relationship of pay to productivity* (Figure 3.4).

Figure 2.3: Business Environment



**Starting a Foreign Business data for UAE, Qatar, Saudi Arabia, Lebanon and Yemen: N/A*
Source: GTCI Report 2014

Figure 2.4: Productivity



Source: GTCI Report 2014

Evidence on whether MENA countries have succeeded in attracting or retaining talent is uneven. Egypt and Lebanon are above average on their GTCI score of *tertiary educated workforce*, which refers to the percentage of the labour force whose highest educational attainment is tertiary level[15], while UAE, Saudi Arabia, Morocco, Yemen and Algeria are more than 30% below average. On *professionals*, which refers to the percentage of professionals[16] out of total employment, Egypt and Lebanon are more than 40% above average, Lebanon is 10% above average and the UAE is 10% below average, while Qatar and Saudi Arabia are more than 40% below average.[17] Particularly in the case of UAE, Qatar and Saudi Arabia, these statistics appear to be counter-intuitive given that these countries are well-known for having a large expatriate skilled workforce (the proportion of professionals and of total population). However, this may be explained by the fact that skilled workers are likely outweighed by a large blue collar population staffing the construction industry (in the case of UAE and Qatar) or very large national population (in the case of Saudi Arabia).

The workforce value proposition must also exist for national workers. Addressing the question of whether the country is able to retain nationals, the GCC and Morocco appear to be succeeding. On the indicator of *brain drain*, Qatar, Saudi Arabia and Morocco score more than 30% above their income group average (indicating that brain drain is not a problem), while Egypt, Lebanon, Yemen, Algeria score more than 30% below (statistics for the UAE are unavailable). In terms of *social mobility*, MENA countries are mostly average, with the UAE and Qatar slightly above average and Algeria, Egypt and Yemen slightly below average (10% in either direction).

Countries that have experienced large outflows of skilled workers from their populations should create strategies to retain skilled talent in the country while also aiming to regain them from abroad, a term coined "brain regain."[18] Some of the dynamics that contribute to brain drain are inevitable, such as low wages and lack of opportunity, but outwards migration can be mitigated by an approach to openness that encourages people to go abroad and provides incentives to return. Programs, or even national dialogue, that places the migration experience as part of a story of talent development where people gain training and experience not previously available at home and return as valued citizens with clear opportunities and support, can help grow needed talent.

Overall, countries that create a destination where people want to stay, come, or return to work, live, raise families and be part of a community, will be more easily able to grow their workforce. Social status elements such as the ability to experience career success based on performance and merit will also factor into the mobility decisions of skilled workers. Countries in the MENA region must make the effort to form a workforce value proposition that is compelling enough to attract and retain workers, particularly skilled workers needed to drive economic transformation and competitiveness.

[15] GTCI (2014)
[16] According to the International Labour Organization, "professionals" includes physical, mathematical and engineering science professionals, life science and health professionals, teaching professionals and other professionals (business, legal, archivists, librarians, social science, religious professionals and writers and creative or performing artists"
[17] Please refer to Appendix B
[18] Term coined by Sheikh Mohammed bin Rashid al Maktoum, the Vice-President and Prime Minister of the UAE and the ruler of Dubai, in "The Brain Regain" published on Project Syndicate.com, June 8, 2014

Ease labour and immigration policies and establish a transparent framework that balances reliance on expatriate and national workers

Countries aspire that their nationals will be able to compete for and succeed in skilled positions. Many nationalisation programs and quotas have been put into place to ensure that locals are not squeezed out of jobs by expatriates. While this is a commendable effort to protect national talent, these quotas should not become mere head counts. Rather, national workers must be selected with care and attention to their leadership, management and technical skills. They should also be supported with additional internal training programs, if needed.

Even as countries grow national talent through education, training and regaining workers from abroad, the demands of new and growing industries will likely outstrip supply, meaning that expatriate labour will have to be attracted because full conversion to national labour is either too gradual or can never be fully accomplished due to an absolute disparity between skills demand and the capacity of the country to supply skilled nationals, such as in ICT. In the meantime, it is important for countries to strike a balance between national and expatriate labour strategies.

The vision for an industry and targets should be communicated transparently, so that expatriate workers are able to manage expectations about their job security. A country that is unfairly and unpredictably preferential towards national labour will face difficulties in attracting expatriate talent in the future. Visa regulations and other restrictions on expatriates can also be relaxed in order to encourage mobility of foreign workers across firms, which will contribute to industry competitiveness as firms are more efficiently able to fill positions, although in the short term wages may increase.

According to the report *Enabling Job Creation in the Arab World, A Role for Regional Integration?*, a joint effort by PwC and the Human Resources Development Fund (HRDF) in Saudi Arabia, the Arab world is dissatisfied with the sufficiency of labour mobility within the region. PwC's International Survey Unit conducted a survey across 20 different Arab countries between July-September 2013 and found that 57% of respondents disagree that there is sufficient labour mobility in the Arab world.[19] Respondents were sensitive, however, to the idea that governments bear risks due to increased mobility. When asked to gauge the greatest risks posed to their governments as a result of increased labour mobility, 43% of respondents believed security and political risks were to be noted.

Easing restrictions on labour mobility in the UAE

In 2011 the UAE removed a requirement for previous employers to provide a No-Objection Certificate in order for a new employer to renew a labour visa. Studies based on data from the Ministry of Labour and a private payroll service managing disbursements to the unbanked blue collar sector showed that although job switching itself did not rise significantly, real earnings amongst labourers whose contracts expired and were renewed after the reform increased by over 50%.

Although similar studies have not been done amongst technical and professional workers, it is possible that the increased openness of the labour market has also decreased firms' monopsony power over talent and increased talent competitiveness at the local level by making it easier for employees to move to new firms, or increase negotiating power at their current firm.

Source: Yaw Nyarko, Suresh Naidu and Shing-Yu Wang, "Worker Mobility in a Global Labour Market: Evidence from the United Arab Emirates." NYU-Abu Dhabi, February 2015 and Al Awad, Mouawiya, "Internal Labour Mobility in the UAE Private sector: Trends and Effects," Gulf Thinker seminar, World Bank and NYU Abu Dhabi, Abu Dhabi, Feb 4, 2015

Reduce reliance on public sector hiring

In the MENA region, bankrolling public sector jobs has been the primary method to stem unemployment of nationals. However, while this has succeeded to a certain extent, it has also created a burden on countries' budgets and tightened the labour market in the private sector. With qualified and skilled nationals selecting jobs in the public sector, the private sector has had to turn to expatriate workers to fuel its growth. In this case, high turnover of expatriate workers will itself cause a further drag on economic development.

[19] PwC (2013)

Reducing dependence on the public sector as the employer of choice will increase the liquidity of the labour market and encourage nationals to seek appropriate education and training in order to compete for private sector jobs. While it is neither possible nor perhaps advisable to suddenly curtail government bankrolling of public sector jobs, policy makers should seek to make the private sector more attractive to workers. They can do so by reforming social benefits such as insurance and pension systems so that national workers are not "penalised" if they seek private sector work. Government employers can also reduce payrolls by undertaking manpower reviews that identify efficiency gains from creating high-quality jobs and filling them with fully qualified candidates. Savings gained from any reduction in government payrolls can be allocated to retraining programs. Publicly declaring a future reduction in public sector jobs will help manage expectations.

Develop partnerships that leverage international technology and skills transfers to contribute to talent growth

Countries that are more open will be able to attract entrepreneurs, innovators, business partnerships and investment. Furthermore, skilled workers attracted from abroad (whether expatriate or returning national workers) bring with them ideas, technology and access to capital and networks that contribute to industry growth. National education and training systems, integral to growing talent but performing poorly across the MENA region, stand to benefit from increased openness. Countries can access education talent, learning techniques and curricula reform guidance by reaching out to international sources of expertise. Long-term institutional partnerships with both public and private education and training institutions are direct results of an orientation towards openness. The GCC, notably, has attracted international universities which have established campuses in the region, enabling nationals to receive world-class education at home and attracting professors and students from abroad. Lebanon and Egypt have long-standing American universities that are highly ranked. Privately operated primary schools flourish in the GCC region, held to high standards by parents who are selective about the schools they enrol their children in.

Regional integration efforts of the Gulf Cooperation Council (GCC)

The Gulf Cooperation Council was founded in May 1981 as a regional economic and collective security organization including six of the nations of the Arabian Peninsula: Saudi Arabia, the United Arab Emirates, Oman, Qatar, Bahrain and Kuwait. The stated aims were to "achieve coordination, integration and interconnection among member states' economic, social, educational, research, cultural, legislative and transport fields." The GCC members have succeeded in establishing a customs union, creating a joint GCC market, easing labour and mobility restrictions on GCC-member citizens, developing joint infrastructure and transportation projects and cooperating on security and intelligence issues.

By 2013 the GCC had an aggregate GDP of $1.62 trillion which made it the twelfth largest economy globally, covering 49.2 million people, of which 52% are nationals and 48% are non-nationals. This population is forecast to grow to 53m by 2020, with 24% of the population under 15. Although the GCC region has not succeeded, nor does it aim, to achieve full integration, it offers a strong model and platform on which to work to further increase labour mobility and social and economic openness.

Sources: "Gulf Co-operation Council," BBC News, 2012; Khalid Shams Abdulqader, "GCC's Economic Cooperation and Integration: Achievements and Hurdles," Al Jazeera Centre for Studies, 2015; "The GCC in 2020 II," The Economist Intelligence Unit Insights, 2009; "GCC: Total population and percentage of nationals and non-nationals in GCC countries (latest national statistics, 2010-2014)," Gulf Labour Markets and Migration

Private training institutions that offer specialist and technical certifications, from health to language to ICT skills, widen the opportunities for local students and workers. As discussed in the 2014 GTCI report, partnerships between international and local institutions can be used to improve the learning opportunities available inside the country, perhaps helping to stem brain drain of young students who would otherwise travel abroad. Private sector international firms can also partner with local governments in order to contribute training and engage in the exchange of ideas in order to build local capacity.

The MENA region should also look at the consequences of migration from a regional perspective. Some countries act as de-facto subsidisers of talent, supplying skilled labour to other MENA nations. These national talent pools abroad may also serve as a source of future talent through "brain regain." Talent-exporting countries, such as Jordan, Egypt and Morocco in the ICT field, can think about how to attract and repatriate talent. These countries can also partner with destination countries to open their training and education systems to nationals in those countries. "Exporting education" may provide a mutually beneficial solution provided that countries open their labour and education systems and make it easier to recognise other national accreditations.

The Colleges of Excellence, Saudi Arabia

The Colleges of Excellence in Saudi Arabia is an international organization which helps create local solutions to spur educational and vocational development.

TQ Education & Training is a leading education and training provider that designs, develops and delivers training solutions for public and private sector clients in the UK and overseas. TQ Education and Training has been awarded a 5-year contract as part of a public private partnership to operate 3 technical and vocational colleges in the Kingdom of Saudi Arabia under the new Colleges of Excellence Program (CoE). These three colleges will cater to 8,000 students (aged 16-20 years) and will deliver a wide range of vocational subjects taught in English to internationally recognized qualifications rom business studies and engineering to fashion and beauty and health studies. Furthermore TQ will provide an anticipated 3,000 staff, including many Saudi nationals. The colleges will be closely tied into the local community and will forge strong links with local and multinational private-sector employers.

TQ is working in partnership with internationally recognized awarding bodies, further education colleges and educational centers of excellence.

Source: TQ Education and Training website: tq.com/about-tq.asp

Utilizing MENA talent across borders

Several countries in the region have been successful at developing in-demand skills, such as ICT skills, that are outsourced to other countries in the region and beyond, both through the provision of ICT services by firms in the country and through the migration of skilled workers from these countries to other markets in the region. Jordan has an established IT community whose firms provide services to the region and many Jordanians supply skilled labour in the UAE and Saudi Arabia, which have large ICT skills gaps. Similarly, Egypt has a well-established domestic IT community, supported by initiatives driven by the Information Technology Industry Development Agency (ITIDA) which is related to the Ministry of Communications and Information Technology (MCIT). Outsourcing and migration are two elements of trade and labour openness within the region that can be powerful levers for countries to use to develop talent competitiveness. Attracting countries benefit from available skilled labour, while supplying countries are building up a "bank" of talent that can be enticed home again when market conditions are more attractive to those workers – a situation where brain drain can be viewed rather as an opportunity for offshore talent development until "brain regain" can be achieved.

Source: Margaret Adam, "Networking Skills in Turkey, the Middle East, North Africa and Pakistan," IDC and Cisco White Paper, May 2013

Summary of key steps to be taken by MENA countries

The table below summarises the steps government policy-makers, employers and academic and training institutions can take to improve openness of MENA countries:

Promoting openness and mobility to enable talent growth		
• *Encourage positive quality of life in order to attract and retain talent, presented through a national value proposition for the workforce* • *Enact more flexible labour and immigration policies and a balanced approach to reliance on national and expatriate workers* • *Reduce reliance on public sector hires* • *Work to establish partnerships that leverage international technology and skills transfers*		
Government policy-makers	***Employers (public and private sector)***	***Academic and training institutions***
• Collaborate with other MENA country governments to develop a regional strategy for integration and labour mobility • Develop a national workforce value proposition to attract and retain nationals and expatriates which includes ease of labour flow, socio-economic stability and quality of life and a conducive business environment • Create strategies to retain and regain skilled talent which had previously emigrated • Ease visa regulations and other restrictions on expatriates while also supporting national talent through training programs where required • Facilitate national workers' moves to private sector jobs by reforming social benefit systems such that national workers are not "penalised" for doing so	• Publish clear guidelines on hiring and retention policies for expats and nationals • Promote meritocratic approaches to hiring, promotion and remuneration • Create training programs in multinational corporations and other large companies which allow employees secondment opportunities to other international offices or to undergo international rotations. This will allow for cross-cultural exchange and international exposure.	• Establish study-abroad programs that are matched with support for job seeking at home • Establish international partnerships to enable students and workers to receive world-class training in home countries and participate in structured study-abroad programs rather than emigrating

3. Developing technology and ICT skills for the 21st century economy

Technological change and increasing digitisation are shifting the dynamics of local and national economies, fuelling accelerated demand across multiple sectors for workers with information and communication technology (ICT) skills. However, as demand for ICT skills outstrips supply, a digital divide is also emerging. In PwC's 18th edition of the CEO Survey, 67% of MENA CEOs identify the rapid pace of technological change as a challenge to their organizations' growth. However, 80% of CEOs interviewed internationally also perceive mobile technologies, data mining and analysis as strategically important, particularly in supporting business decision making. This paradox highlights the critical issue of the ICT skills shortage faced in the region, which is further confirmed by the 75% of MENA CEOs who consider the lack of availability of key skills a serious threat that could hinder the growth of companies and national economies.

Companies and governments across the MENA countries have been embracing technology through major transformations, such as e-government and smart government initiatives as to support innovative delivery of public services. However, rapid technological development increases demand for ICT skills to manage and drive technology-enabled change. As reliance on technology becomes more prevalent, MENA employers and government organizations need ICT talent to support and lead technology-driven activities. To meet demand, there must be a concerted effort to expand and mainstream ICT education from early years education through to advanced tertiary, vocational and adult education courses

Governments in MENA countries must also enable ICT business-supportive policies to encourage a dynamic labour market, including setting and enforcing favourable regulations that protect intellectual property (IP) and facilitate the establishment, financing and staffing of ICT-related business, especially entrepreneurial ones, in order to create a business environment that attracts talent. MENA countries will also need e-leaders in both government and business to further drive the technology and ICT agenda across the public and private sector.

Developing ICT education as a long-term solution to securing needed ICT skills

In an extensive study to identify the availability of skills in various ICT areas, the industry firms IDC and Cisco conducted over 570 interviews throughout the MENA region as well as in Turkey and Pakistan. The results of this survey were published in a white paper sponsored by Cisco titled "*Networking Skills in Turkey, the Middle East, North Africa and Pakistan*." The survey not only identified a shortage of networking skills in each of the countries examined, but also denoted three trends that would further drive the need for qualified IT talent: (1) the demand for greater efficiencies within IT infrastructure; (2) the rise of wired and wireless devices and the need for intelligent networks robust enough to support streaming-video; and (3) remote delivery of automated services and virtualized cloud workloads. This increased demand would place ICT workers trained in these domains in a unique position to capitalize on opportunities in network security, internet protocol telephony and wireless networking, as well as workers trained in "emerging technology skills," which include competencies in unified communications, video, cloud computing, mobility, datacentre and virtualisation.[20]

MENA countries have yet to produce enough workers with ICT skills to meet the current demand and will face increasing challenges to sustaining growth of the talent pool sufficient to keep up with projected accelerating future demand. The IDC research revealed a 28% growth in the "digital gap" between demand and supply of the networking talent pool between 2012 and 2015 across MENA countries, most significantly in Saudi Arabia.[21] Furthermore, the World Bank's publication "*Creating 100 Million Jobs for a Fast-Growing Work Force*" points out that the labour force in the MENA region stood at 146 million workers in 2010 and is projected to grow to 185 million workers by 2020. In order to absorb both unemployed workers and new entrants, MENA economies will need to create nearly 100 million jobs by 2020.[22] Much of this growth could be ICT related, otherwise, as ICT

[20] IDC (2013)
[21] Calculated as compound annual growth rate (CAGR)
[22] World Bank (2014)

capabilities become increasingly central to business success and government efficiency, a lack of qualified ICT workers will hinder economic growth across the MENA region.

Formal education that does not produce sufficiently e-literate students will fail to meet labour market demands, further compounding MENA countries' digital gap. Across the board, a lack of investment in curricula reform and teacher selection and training will further compound MENA countries' digital gap. National education strategies should explicitly consider curricula reform to mainstream the teaching of foundation and specialist ICT skills, place a greater emphasis on selecting and training top teaching talent and adopt expectations and strategies to encourage girls to focus on STEM and ICT skills as part of an integrated "education for ICT" strategy. Today's students' constant connection through mobile phones and smart devices demonstrates a changing aptitude for technology amongst younger generations who are becoming savvy end-users able to navigate various platforms. Educational institutions should cultivate these students' aptitudes into appetites for ICT careers as developers and designers.

MENA countries have the opportunity to tackle the problem of youth unemployment through efforts to close the ICT demand gap. In North Africa, a large unemployed youth segment can be encouraged to develop ICT skills, which are in high demand. In a labour market where salaries of ICT workers are more attractive than comparable levels in other fields, the barriers to filling the gap will be school preparation in the underlying fundamentals, availability of specialized training, ability to gain experience and awareness of ICT career opportunities.[23]

While training at the tertiary level produces highly specialised skills, education systems at all levels should be oriented towards preparing students to enter the workforce with in-demand e-skills. Primary education geared towards producing workers with e-skills affords children the ability to learn the basic math and problem-solving skills that set the foundation for future ICT training. Secondary education confers e-skills by incorporating the use of ICT in daily learning and mainstreaming ICT topics into the basic curriculum, rather than teaching them as electives. Mainstreaming ICT skills and knowledge particularly benefits girls, who are less likely at the global level to choose STEM and ICT electives as they reach secondary school and university. This is especially relevant in the region, since females graduating with a science degree currently stand at less than 15% of all majors in most MENA countries, with the exception of Morocco, KSA and Tunisia, where the rate stands at around 21%.[24] ICT-oriented in-service teacher training can also help bring teachers to the forefront of the effort.

Create ICT business-supportive policies to encourage a dynamic labour market

On the demand front, the regulatory and business climate for the ICT sector plays a role in a country's ability to ensure a sustainable ICT job market and attract technology talent. Policy makers should establish quick-turnaround efforts to examine the national policy context that enables technological growth in their economies. Both the UAE and Qatar rank in the top ten among GTCI countries on *firm-level technology absorption* which demonstrates the business communities' rapid adoption and absorption of new technologies within both countries. Business environments should be conducive to the growth of firms which adopt technological advances in their business or provide technological services, including tech start-ups. These include the setting and enforcement of regulations that protect IP, facilitating the starting (and closing) of businesses, encouraging financing and easing restrictions on foreign specialist ICT workers. By taking action to encourage ICT-led growth, countries can promote an environment attractive to both expatriate ICT professionals and skilled national ICT workers who may otherwise be enticed to emigrate to more lucrative markets. In recent years, MENA countries have played an active role in supporting and promoting the role of ICT and providing platforms for companies and start-ups to develop and promote ICT products, such as setting up incubators, ICT funds and ICT parks. This environment will support knowledge-based businesses and provide for a market where ICT workers, advanced technicians and entrepreneurs can find professional growth opportunities, update and advance their skills and ultimately grow their businesses.

R&D carried out by universities may require sophisticated data analytics, maintenance of networks and computing power, or be enabled by other ICT skills. As such, MENA countries should also work to

[23] Robert Half (2015)
[24] UNESCO (2014)

build links between universities and the ICT job market in creative ways. In North Africa and the Levant, Egypt, Morocco and Tunisia all score much higher than their income group average on the *R&D expenditure* indicator.[25] This suggests an opportunity for these countries to leverage R&D funds to attract or develop ICT workers, or to channel information to programs that prepare ICT workers for the demonstrated demand for ICT-related skills by research institutions.

Of this group, Morocco scores particularly high on *ICT access* (42.82 vs its income group average of 29.57), which indicates a higher level of awareness and familiarity with basic technologies amongst the population. The Moroccan government has committed to establishing the country as an offshoring hub to support Francophone countries and is therefore investing in initiatives to bolster ICT skills development among its population. This commitment, coupled with a dedicated e-government agenda sets the stage for rapid adoption of IT in Morocco.[26] Morocco is also on par with its income group on *quality of scientific research institutions*, whereas the rest of the MENA countries, except Qatar, score less than their income group average. Increased internet access and connectivity may also enable distance learning and self-study, provided that workers have the basic pre-requisite skill set and are encouraged to narrow the job demand gap.

Morocco's e-government agenda

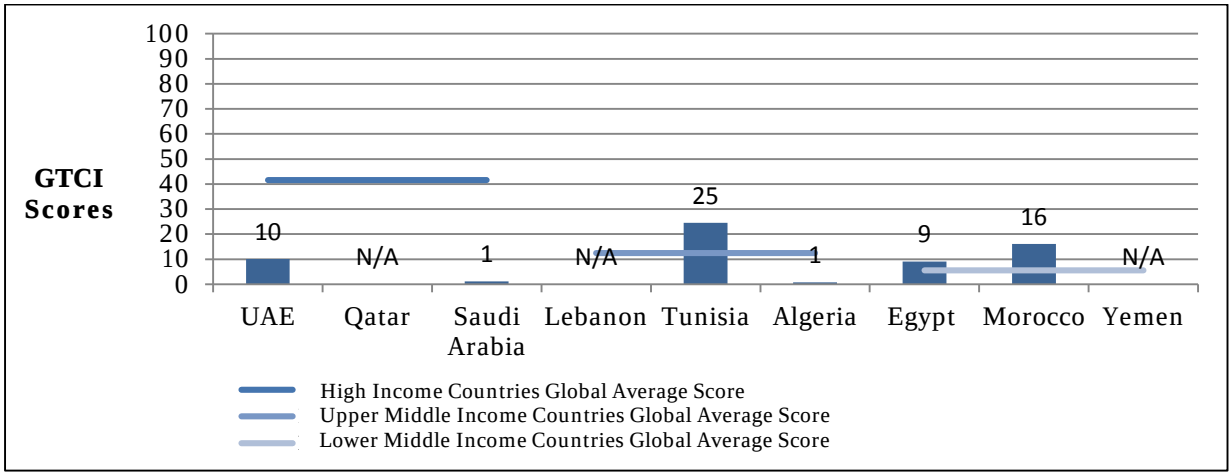
Morocco has a large gap in the supply of qualified ICT workers necessary to meet current and projected demand, with a networking skills gap of 27% in 2012, projected to grow to 31.2% in 2016. This constitutes the third highest gap behind Saudi Arabia and the UAE, according to a Cisco white paper that studied the situation in Saudi Arabia, UAE, Jordan, Morocco, Egypt, Turkey and Pakistan.

The Moroccan government has launched initiatives to support the development of ICT skills, to build up Morocco as an offshore hub to support Francophone countries and accordingly has adopted an aggressive e-government agenda. Morocco designated the decade 1999-2009 as the "education decade" and focused on facilitating effective use of ICT in education and development. As a result, internet penetration has reached 15.2%, a 4.5% growth rate since 2000. In 2006 the Ibn Zohr University launched the Moroccan Virtual Campus effort to support e-learning throughout the university system, with a goal to reach graduate, vocational and graduate levels. The program, however, faces high costs of developing the platforms and modules. Distance learning (referred to by the French acronym FOAD) is also growing amongst private companies. For example the Moroccan subsidiary of the business training firm Formademos offers diplomas and certificates with over 900 e-learning modules. Furthermore, an ICT-focused cluster organization, "Maroc Numeric Cluster" was launched in 2010 to bring together all related public and private sector interests in the ICT sector and has supported development of a joint university diploma program between the University of Brest, France and eight Moroccan universities.

Source: Margaret Adam, "Networking Skills in Turkey, the Middle East, North Africa and Pakistan," IDC and Cisco White Paper, May 2013; virtualschoolsandcolleges.eu; netacad.com; formademos.ma/elearning; marocnumericcluster.org

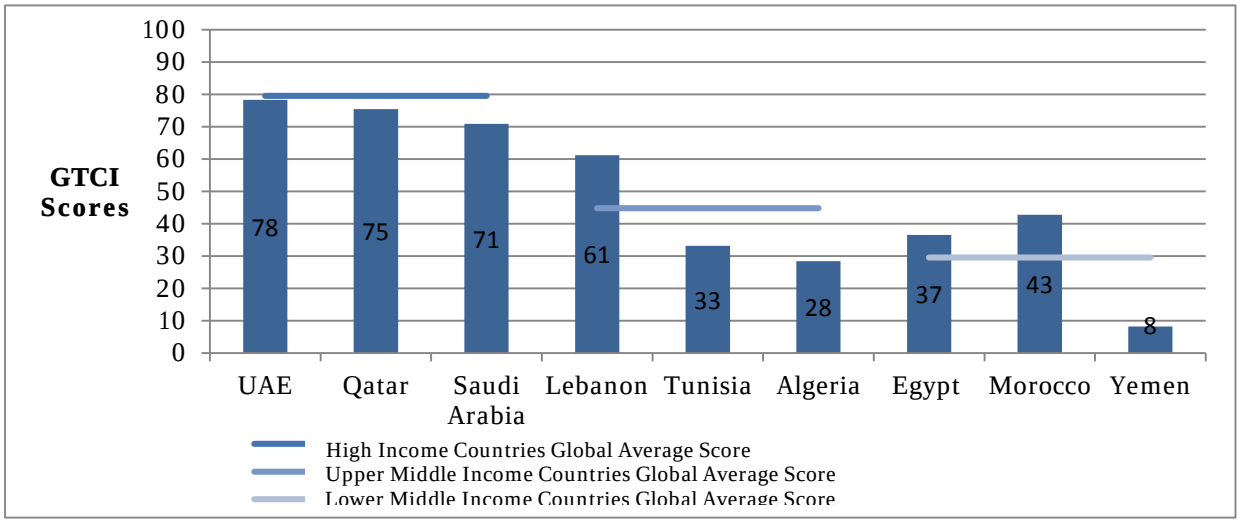
[25] On indicator 1.2.4 R&D Expenditure, Egypt, average of 5.51 for the lower middle income countries
[26] IDC (2013)

Figure 3.1: R&D Expenditure vs. Income Cohort Averages



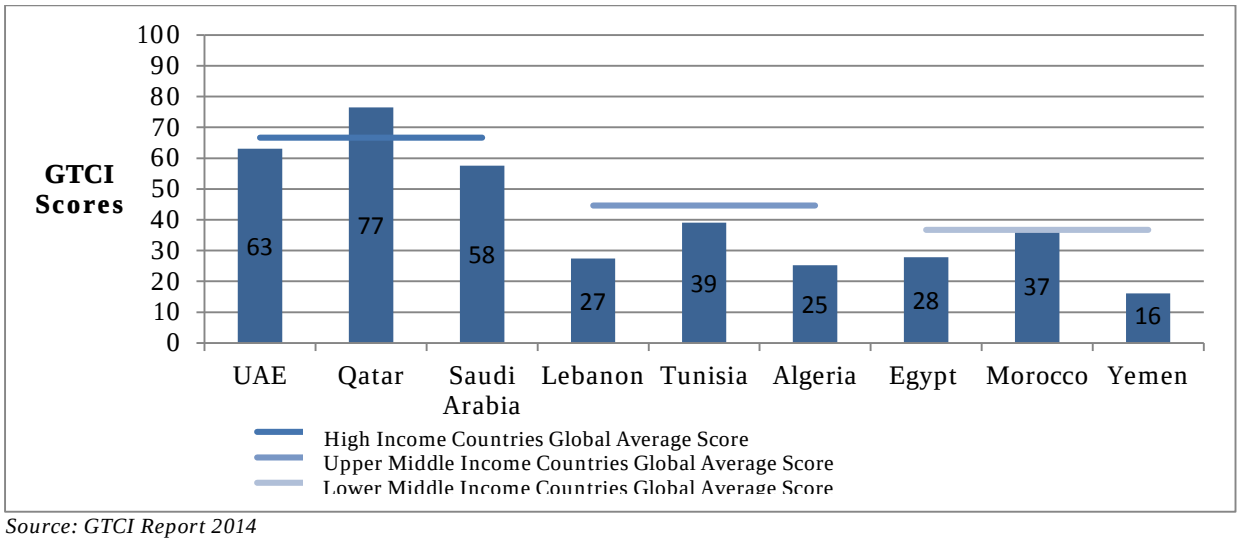
**Data for Qatar, Lebanon, and Yemen N/A*
Source: GTCI Report 2014

Figure 3.2: ICT Access vs. Income Cohort Averages



Source: GTCI Report 2014

Figure 3.3: Quality of Scientific Research Institutions vs. Income Cohort Averages



Source: GTCI Report 2014

Foster e-leadership

Each of the MENA countries should have a segment of the population with the necessary e-leadership skills to take leadership positions in ICT related firms and government agencies. These individuals will then drive the technology and ICT agenda across their industries and the nation, including establishing steps to develop ICT industries, talent and skills further.

Private sector e-leaders must understand the complexity and interconnectedness of the global economy and have the technical, strategic and managerial skills to help their organizations take advantage of the opportunities created as technology advances. Simultaneously, government leaders must have a firm grasp on fast-moving technological issues to develop, advocate and enact supportive regulations, policies and programs for their workforce and economies.

Additionally, governments should drive the ICT agenda by internally fostering e-leadership, including appointment of Chief Technology Officers (CTO) to help set ICT-friendly policies across multiple sectors and improve business-government relations on ICT matters. By improving the ICT policy environment, top talent can be both attracted and retained in MENA countries.

Summary of key steps to be taken by MENA countries

The table below summarises the steps government policy-makers, employers and academic and training institutions can take to develop 21st century ICT skills for the 21st century in MENA region:

Developing technology and ICT skills for the 21st century economy		
• *Develop ICT education as a long-term solution to securing needed ICT skills* • *Create ICT business-supportive policies to encourage a dynamic labour market; Foster e-leadership*		
Government policy-makers	***Employers (public and private sector)***	***Academic and training institutions***
• Facilitate immigration of ICT talent to fill companies' demonstrated needs • Support incubators, technology parks and investment funds to support ICT talent and business development • Strengthen IP protection and support open innovation • Build a cadre of policy makers that have the underlying technical knowledge to understand ICT issues and thereby guide the policy and talent agenda • Create a favourable regulatory and business climate for ICT firms in order to stimulate a sustainable ICT job market and attract tech talent	• Appoint CTOs who are evaluated on their ability to source and develop ICT talent • Engage with policy makers to articulate the needed ICT competencies and drive labour policies • Articulate shortfalls in IP and business regulations to policy makers	• Partner with strong ICT training programs to rapidly introduce wide-scale training in the country • Integrate ICT topics into mainstream education to allow all students to become exposed to ICT topics and encourage more students, especially females, to follow ICT careers • Develop advanced ICT training programs to prepare young talent and keep existing ICT workers' skills current
Cross-sector	• Identify the necessary skills and competencies that are a pre-condition to success in ICT and technology fields and incorporate these in updated curricula guidelines, frameworks and R&D efforts	

4. Cultivating innovation and entrepreneurship talent

Innovation and entrepreneurship have become high-priority qualities to cultivate in the national economy and workforce. Globally, the most innovative companies predict five-year growth at twice the pace of the global average and three times as much as the least innovative companies. Innovation enables companies to become more competitive and enables countries to adapt successfully to changing global and local dynamics. Entrepreneurship enables new products and services to come to market and contributes to new job creation.

Growing talent that can drive innovation and entrepreneurship means developing a workforce that is inquisitive, creative, adaptable and persistent – workers who can take advantage of technological change in their jobs, adapt company strategies to changing economic dynamics and create employment opportunities for others within the national labour market. While there are indications of such a workforce developing in the MENA countries, most countries continue to score low on this metric. Furthermore, in countries where signs of innovation and entrepreneurship are appearing, the regulatory environment has yet to fully and consistently support innovators and entrepreneurs in their efforts.

In many MENA countries, governments and civil society efforts such as TV shows, training and competitions and awards promote and encourage entrepreneurship, contributing to the "pull" factor, while degrading macro-economic situations in post-Arab Spring countries have "pushed" people toward entrepreneurial activity due to the lack of other employment options. The Global Entrepreneurship Monitor reports that for the period between 2011 and 2013, an average of 1 in 3 entrepreneurs in Egypt, Morocco and Tunisia chose to own a business because they had no other option for work. Yet MENA countries are still facing challenges to establish ecosystems that succeed both in achieving real economic and social results through strategies to boost innovation and entrepreneurship. Even in countries that have already heavily invested in promoting innovation and entrepreneurship, such as Qatar and the UAE, the full benefits are yet to be realized. Measures of "innovation output" are below average for all countries except Tunisia, further underscoring the need for MENA countries to cultivate a richness of innovation in society.[27] "Innovation output" is derived by the *Global Innovation Index* by aggregating two output pillars: the knowledge and technology output and the creative output. These pillars comprise a number of variables from patent applications, royalty and license fees to intangible creative outputs such as trademark applications and cultural and creative services exports.[28]

MENA countries can boost innovation and entrepreneurship through a variety of strategies. At the fundamental level, students can be prepared and encouraged to be creative and adaptable problem-solvers and can be provided with opportunities to practice their skills before formally entering the workforce. Innovators and entrepreneurs can be encouraged to find each other: Innovators have the skills to develop new ideas and find workable applications for them, while entrepreneurs have the skills to take those applications and create viable business models to deliver them to market. Finally and at the highest level, governments in MENA countries must work to create an ecosystem where innovation and entrepreneurial output is protected and can flourish.

[27] GTCI (2014)
[28] GTCI (2014)

Table 4.1: Global Talent Competitiveness Index – MENA Countries: Global Knowledge Output Pillar and Indicators

Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
MENA Region	GCC	GCC	GCC		Levant+	Maghreb	Maghreb		Levant+	Maghreb	Levant+	
Global Knowledge	**29.28**	**25.36**	**37.58**	**44.91**	**30.73**	**31.21**	**13.70**	**27.02**	**22.26**	**13.46**	**22.50**	**21.49**
Higher Skills & Competencies	34.14	31.57	29.87	49.68	33.44	28.57	16.74	25.04	27.09	12.23	16.42	20.44
Tertiary-educated Workforce	23.74	n/a	30.64	49.57	36.53	28.45	21.38	31.62	28.11	11.28	9.76	21.97
Tertiary-educated Population	29.87	34.75	34.91	46.81	25.50	20.77	n/a	25.46	n/a	n/a	n/a	21.90
Professionals	42.38	27.74	30.49	51.92	30.79	n/a	11.89	26.44	39.02	4.88	40.55	21.58
Researchers	n/a	n/a	n/a	42.31	n/a	19.99	1.62	8.30	5.56	9.31	n/a	3.22
Legislators, Senior Officials and Managers	41.81	16.95	19.77	39.62	66.67	n/a	32.77	24.95	45.76	3.39	14.12	26.17
Quality of Scientific Research Institutions	63.05	76.53	57.58	66.69	27.44	39.11	25.23	44.64	27.81	36.78	16.05	36.73
Scientific and Technical Journal Articles	3.99	1.87	5.80	51.38	13.73	34.55	7.53	12.97	16.29	7.77	1.64	7.86
Talent Impact	24.42	19.16	45.30	40.14	28.01	33.84	10.67	29.00	17.42	14.68	28.59	22.55
Innovation Output	29.11	37.59	42.10	56.02	26.17	36.32	0.00	31.52	16.41	22.75	0.35	26.43
New Product Entrepreneurial Activity	62.16	n/a	82.43	48.45	35.14	55.41	28.38	38.59	22.97	8.11	74.32	41.22
New Business Density	6.40	8.12	n/a	23.76	n/a	7.07	2.34	16.11	n/a	5.83	n/a	3.14
Sophisticated Exports	0.00	11.76	11.35	31.94	22.71	36.57	11.95	28.84	12.88	22.04	11.09	21.83

Source: GTCI Report 2014

Prepare students who are creative, adaptable problem-solvers and provide opportunities to practice

An innovation-driven economy (or knowledge-driven economy) requires workers who possess strong critical thinking and problem-solving skills. The GTCI's *global knowledge* pillar captures data on how well countries are converting talent inputs to tangible outputs at the high end of the skills spectrum (Table 5-3). Results for the MENA region in this area are mixed, although it is apparent that entrepreneurship is lagging behind innovation in most of these countries. The GCC, Morocco and Algeria score below their income cohort average across the *higher skills and competencies* sub-pillar, which includes measurements of tertiary education, professionals, researchers and scientific and technical journal articles. Egypt and Lebanon are the only MENA countries to outperform the average and Tunisia is just above average, indicating a relatively well-educated and professional workforce in these countries.

Countries can improve the role of universities in contributing to the growth of innovation and entrepreneurship by creating and supporting university environments where unconventional thinkers can flourish. This can be achieved by rewarding inquisitiveness, creativity, adaptability and persistence in students through "practicum" courses, awards and prizes. Government and companies

should provide funding to support new research, particularly in STEM fields and can endow faculty positions to attract key talent. Student publications and online platforms can showcase ideas and prototypes for new products and processes.

It is also important that students exercise their skills outside of the classroom through hands-on experience. Universities can introduce entrepreneurship courses oriented towards practical skill development and outcomes. Governments and businesses can be active partners by sharing examples of real-world problems they face with students through workshops and practicums, allowing students to learn through problem-solving. Furthermore, pathways from university to employment can be supported through internships, apprenticeships and mentoring of students during their school years and early on in their careers. Models such as INJAZ Al-Arab's entrepreneurship curriculum provide learning and mentorship through the involvement of private sector practitioners and have been shown to boost employment of participants.

Connect innovators and entrepreneurs with each other

Innovators and entrepreneurs have complementary skills, with profiles that fall along a spectrum ranging from those who prefer to conduct research and develop ideas, to those who seek to commercialize and find markets for new products and services. Start-ups succeed by taking an idea, identifying opportunities to implement it and having a business plan to bring that idea to reality.[4] even individuals who start a business based on their own innovation must identify investors, partners and employees that bring additional business and technical skills in order to build a sustainable business, expand their offering and grow.

The GTCI reveals stark contrasts between MENA countries that are beginning to exhibit positive signs of innovation and entrepreneurship and those that are lagging behind (Table 5-2). The high-income countries in the GCC as well as Tunisia score above average on *firm-level technology absorption* and the UAE and Qatar are above average for *FDI and technology transfer*, which suggests that firms have the leadership, managerial talent and technical talent to manage technological change. Tunisia stands out as the only country to score slightly above its income group average on *innovation output*, which covers elements of knowledge creation, impact and diffusion, as well as creative intangibles, creative goods and services and online creativity.

Integrate entrepreneurship skills in education

INJAZ Al-Arab (INJAZ) is a non-profit organization that drives youth education and training in workforce readiness, financial literacy and entrepreneurship across the Arab World. Collaboration with public and private sector partners fuels the delivery of INJAZ programs and enriches the ability of Arab youth to engage in their own economic development as well as contribute to the strength and stability of their families, communities and economies. INJAZ began its work in the Middle East & North Africa (MENA) region in 1999 and established its regional office in 2004. Today, it operates in 14 countries as a federation of national operations. Over 2 million students have participated in a broad base of entrepreneurship training opportunities aimed at developing basic business skills to start and run their own businesses while obtaining soft skills increasingly demanded by the private sector. An impact study of 373 participants in Jordan revealed that 87% of INJAZ Alumni respondents were successfully employed within a year after their graduation, compared to an overall rate of 70% of Jordanian graduates that remain unemployed for more than a year post-graduation.

INJAZ Al-Arab has led a research project on the steps, tools and models for integrating entrepreneurship education into national education policies. This project was conducted in partnership with ARAIEQ, the Arab Regional Agenda for Improving Education Quality, which was launched by ALECSO (Arab League Educational, Cultural and Scientific Organization), with the technical and financial support of the World Bank, following the 2010 "Doha Declaration on Quality of Education in the Arab World." ARAIEQ is mandated to improve the quality and relevance of education in the region, to "empower school systems in the Arab World to 'produce' well-trained graduates, endowed with the knowledge and skills essential for the 21st century, ready for the labour market and for life." In 2012, ARAIEQ began implementation of five programs that include education evaluation and policy analysis hosted by UNESCO Regional Bureau; teacher policies hosted by Queen Rania Teacher Academy; early childhood development hosted by Arab Resource
Collective; curriculum innovation hosted by National Center for Education Technologies; and entrepreneurship education & innovation hosted by INJAZ Al-Arab.

The project report sets out a holistic framework for 21st century skills comprising the five areas of entrepreneurship skills, career guidance skills, higher order thinking skills, soft skills and IT literacy skills.
Recommendations are provided for each of the four core pillars of standards, curricula & assessment; extra-curricular activities; teacher training & instruction; and learning environment. Introducing entrepreneurship skills can result in near term benefits, with career guidance skills delivering medium term benefits and higher order thinking skills, soft skills and IT literacy skills achieving durable, long term results. Furthermore, each of these areas can be approached through different learning methods, either live, online, or blended, to support wide dissemination and scalability of reform efforts.

Entrepreneurship Skills

Entrepreneurship skills form one pillar of the 21st century skill framework introduced by INJAZ, which includes skills and attributes that can be cultivated beginning in K-12 education systems

Entrepreneurial Acumen	**Business Acumen**	**Soft skills & higher order thinking skills**
• Entrepreneurial processes • Entrepreneurial traits/ behaviours • Entrepreneurial mind set	• Financial management • Human resource management • Strategic management • Information management • Marketing management • Operations management • Risk management	• Critical & analytical thinking • Teamwork • Leadership • Creative & innovative thinking • Pro-active & independent • Motivated to meet objectives • Social responsibility

Source: "Preparing Arab Youth for the World of Work," PwC report prepared for INJAZ Al-Arab and The Arab League Educational, Cultural and Scientific Organization (ALECSO), March 2014. Reference also to "INJAZ Al-Arab Impact Assessment Study," PKF Jordan

Table 4.2: Global Talent Competitiveness Index – MENA Countries: Select Innovation and Entrepreneurship Input Related Indicators

Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
MENA Region	GCC	GCC	GCC		Levant+	Maghreb	Maghreb		Levant+	Maghreb	Levant+	
Market Landscape	66.39	59.37	61.39	62.46	53.94	40.37	18.37	41.75	27.08	36.42	31.02	33.74
Venture Capital Deals	n/a	0.50	n/a	29.00	n/a	2.03	0.00	2.36	0.44	0.71	n/a	3.28
Firm-level Technology Absorption	84.63	81.77	79.68	73.63	58.22	61.53	36.13	60.32	53.40	56.56	51.25	57.05
External Openness	76.07	73.46	58.05	46.86	40.35	32.31	18.23	34.93	21.77	35.60	18.01	31.32
FDI and Technology Transfer	81.47	80.21	74.92	64.76	43.78	60.46	43.82	59.50	53.10	62.31	41.29	54.91
Access to Growth Opportunities	56.62	65.23	52.94	58.27	36.81	35.69	27.36	45.43	37.57	34.44	42.58	43.02
Willingness to Delegate Authority	63.10	74.44	60.36	57.88	37.59	39.68	27.18	44.64	50.95	39.36	46.54	43.45
Employable Skills	51.82	39.68	44.26	58.28	27.90	39.79	24.52	41.87	45.19	23.39	23.66	34.70
State of Cluster Development	74.23	69.29	61.43	56.36	36.93	44.87	36.45	45.06	51.49	49.54	30.26	43.59

Source: GTCI Report 2014

Programs that support innovators and entrepreneurs to find the right talent to support the launch and growth of their ventures will boost outcomes and attract more individuals to exhibit their talents. Saudi Arabia, the UAE and Qatar have above average score on the *state of cluster development (SCD)* metric, indicating the presence of localized economic ecosystems that can support the exchange of ideas and development of new services and products within the cluster.

In addition to further supporting and expanding such initiatives, a range of other programs must also exist. Clubs and online forums can help investors, partners, entrepreneurs and early-stage employees connect with each other. R&D-driven firms can encourage employees to generate business ideas, or partner with students. Business schools can partner with STEM programs. Governments can also set up incubator or accelerator programs that seek out early-stage ideas and pair their sponsors with activist investors and technical assistance. Strategic funding and technical support can also accelerate the expansion of high-potential companies beyond local their markets.

Create the talent, business and intellectual property (IP) ecosystem to support risk-takers

The UAE, Qatar, Morocco and Algeria score lower than the averages of their income group cohort on the sub-pillar of *talent impact*, which measures innovation output, new product entrepreneurial activity, new business density and sophistication of exports. In particular, on *new business density*, the UAE, Qatar, Tunisia and Algeria perform at least 25% below average, indicating that entrepreneurship is developing at a slow pace despite tremendous efforts to establish an inviting ecosystem both in the UAE and Qatar through the proliferation of technology and investment parks, SME incubators and innovation and entrepreneurship funds. This lag may be attributable to the level of maturity of insolvency and IP legal frameworks, among other factors.

However, the SCD metrics for innovation are positive for some countries, demonstrating for example that Saudi Arabia, the UAE and Qatar are on a path towards innovation-led and knowledge-based economic development and that the number of innovation initiatives per person has been rising in the region, especially in Qatar, UAE and Oman. However, significant barriers still remain. Most noteworthy, the legal procedures to start new businesses in the MENA region are considered more time consuming and inhospitable than in most of the Organization for Economic Co-operation and Development (OECD) countries.[29] Regulatory and business environments in these countries will need to improve in order to support a more vibrant and sophisticated entrepreneurial community.

The King Abdullah University for Science and Technology, Saudi Arabia

The King Abdullah University for Science and Technology (KAUST) was founded in 2009 to integrate research and education, leverage the interconnectedness of science and engineering and catalyse the diversification of the Saudi economy. KAUST is explicitly developing people through its technical graduate programs as well through programs for technology development, commercialization and spin-offs and subsequent job creation. KAUST operates a Research Park to facilitate collaboration between KAUST faculty and students and technology-based businesses and an Innovation Cluster that offers laboratory and office space to technology companies and start-ups. Notably, when KAUST opened, it was the first university to enrol women alongside in the history of the country. The official language of instruction is English.

Sources: The King Abdullah University for Science and Technology website: kaust.edu.sa; Coleman, Isobel, "The Global Glass Ceiling: Why Empowering Women Is Good for Business," Foreign Affairs Vol. 89, No. 3, 2010; Cisco (2013)

Incubators and accelerators, whether sponsored by government, private networks, or universities, are direct interventions that provide technical support to and direct access for early-stage financing and investment. This includes provision of technical advice to start-ups and growth-stage businesses on strategic legal and financing advice to mitigate the typical obstacles new businesses face. Innovation and entrepreneurship organizations and government policy-makers can establish two-way communication with the technical assistance providers and businesses themselves in order to gather evidence and suggestions for specific legal and regulatory barriers that must be addressed.

To enable the growth of innovation and entrepreneurship amongst the working population, employers can delegate authority, give increased responsibility and encourage participation from their workers, especially those in management and new product development, to encourage the best ideas to come to life. Qatar stands out as the only country which outperforms on *Willingness to delegate authority (WDA)*, a key measure of support for emerging talent within firms. Risk-reward incentives can also be aligned by covering R&D costs while retaining commercial and IP rights in order to support employee-led initiatives to develop new ideas, products and services. Firms can also make it easier for workers to have a pathway to exit and re-join the firm if they seek an opportunity to develop their own business (for example sabbatical programs).

[29] Saddi (2011)

Finally, MENA governments should participate in establishing a comprehensive innovation ecosystem by developing cooperative mechanisms across public entities, private sector, civil society, academia and investors. In particular, governments should focus on regulatory reform and instate clear time-tables and measurement indicators to set a brisk pace for reforms that have immediate impacts on innovation and entrepreneurial outputs. Pension and social safety nets should be adapted to more easily allow workers to change their status without losing benefits, facilitating transitions between work and business ownership. Start-up risk can be reduced by enabling easy start-up and closure of firms and establishing business licenses that do not require physical offices or registration of capital investments. Transitions between school and work can be eased by amending labour policies to allow part-time work, internships and apprenticeships. Programs or agencies that actively support IP development by supporting patent-seekers with information, legal advice and technical assistance are also needed in the MENA region.

Promoting innovation in the UAE

The UAE has taken concerted steps to develop the nation's innovation capacity through actions at the highest level of government. In 2010 the country published Vision 2021, the national vision for the UAE by the time of its Golden Jubilee and highlighted the importance of the knowledge economy and drawing the link to innovation.

In 2014, the UAE established a National Innovation Council (NIC) and National Innovation Strategy (NIS), focused on stimulating innovation through 30 initiatives to be completed within three years in seven sectors: renewable energy, transport, education, health, technology, water and space. The Strategy has four tracks: creating a stimulating environment for innovation through institutions and laws, institutionalizing innovation in government entities, encouraging private sector innovation through research centres and new products and services and boosting STEM education including through development of new educational materials. In government, the NIS mandates every agency to appoint a Chief Innovation Officer and set aside 1% of their budgets for innovation.

The UAE has implemented various programs to support innovation, including $1m prizes for robotics, solar-powered desalination and use of drones, aimed at stimulating innovations that will benefit the world as well as develop jobs and opportunities in the UAE. The city-state emirate of Dubai also launched the complementary Dubai Innovation Strategy (DIS), composed of 20 initiatives focused on 10 dimensions. An "Innovation Hub" and "Creative Community" have been established in existing free zones devoted to internet, media and design, supported by start-up competitions and funding. These efforts build on the country's strong value proposition to highly skilled technical professionals that emphasises the tangible value the national leadership places on attracting firms and professionals to locate in the country. The nation has also declared 2015 to be "The Year of Innovation."

With the recent win to host Expo 2020 in Dubai, governments of all MENA countries have an unprecedented opportunity to leverage this event, maximize visibility and reap the benefits it can bring to innovators and entrepreneurs, not only during the event but throughout the years leading to it, making Expo 2020 a win for all MENA countries even beyond the UAE.

Sources: WAM, via Emirates247.com, "Mohammed sets up Innovation Committee" November 02, 2014; dronesforgood.ae; arabianbusiness.com October 19, 2014; tamimi.com February 7, 2015

Summary of key steps to be taken by MENA countries

The table below summarises the steps government policy-makers, employers and academic and training institutions can take to improve support innovation and entrepreneurship in MENA

Cultivating innovation and entrepreneurship talent		
• *Shift the orientation of formal education towards higher-order cognitive functions and technical knowledge* • *Connect innovators and entrepreneurs with each other* • *Create the talent, business and IP ecosystem to support risk-takers*		
Government policy-makers	***Employers (public and private sector)***	***Academic and training institutions***
• Allocate funds to support STEM and business education at all levels • Relax restrictions on expatriate ownership and new business establishment • Develop and enact regulatory reforms to support new businesses (establishment, closure, hiring/firing, IP rights) • Create a patent office with a mandate to provide technical assistance and information for businesses and individuals seeking IP protection • Provide tax incentives, at both personal and corporate levels, to start ups where applicable • Create or support the development of incubators and clusters to harness synergies	• Develop firm-based culture that delegates responsibility and provides greater voice to employees in order to gather innovative ideas and empower change • Establish "innovation spaces" for workers to collaborate to solve tough problems outside their day-to-day requirements • Establish pathways to allow workers to leave in order to start a business, stimulated by co-investment or technical support mechanisms, while providing them a clear option to return or partner in the future • Encourage innovations and entrepreneurship by workers within the company	• Introduce curricula to support critical thinking and problem solving • Reward inquisitiveness, creativity, adaptability and persistence in students through "practicum" courses, awards and prizes • Collaborate with universities worldwide for exchange programs • Establish incubators within universities for students to develop their ideas and to access the R&D facilities • Shift the orientation of formal education towards higher-order cognitive functions
Cross-sector	*Support collaboration and improve linkages within the academic, business and government ecosystem* • Create linkages between universities, R&D firms and financing sources • Encourage partnerships between employers and universities for mentorship and/or apprenticeship programs for new graduates • Support technology parks and accelerators • Encourage pairing innovators with entrepreneurs	

Creating an ecosystem for women's success

Traditional gender norms and their influence on institutional structures in the MENA region have shaped women's expectations, preferences and incentives to work as well as the types of employment opportunities made available to them.[30] MENA countries have made significant gains in achieving gender parity in education as a result of increased government investment in education in the 1980s. Yet the female workforce participation rates in MENA are currently only 25%, while the global average is roughly 50%.[31] PwC in conjunction with the Pearl Initiative, a private sector-led not-for-profit organization set up to improve transparency, accountability and business practices in the Gulf region, surveyed 600 senior women across the GCC and found that while they were ambitious, "only 45% find it feasible to achieve a positive work/life balance and combine a high-power career with a family; even though three quarters of respondents feel that their families are supportive of their education and career, they are still hampered by traditional role models and there is little evidence to suggest social attitudes are changing."[32] Cultural forces, social norms and women's individual mindsets contribute to their limited participation in the labour force as societal pressures place priority on domestic responsibilities and familial commitments.

Cultural considerations lead to increased costs to enhancing female participation such as the need to create office spaces to separate men and women, provide the requisite childcare facilities and employer-sponsored maternity leave while restricting working hours and the types of job roles women are permitted to fulfill. Yet these costs are necessary if MENA governments are dedicated to raising female participation rates in their labour forces.

Innovative solutions will need to provide targeted interventions to reach women in different phases of their lives and careers. Firstly, women who are seeking to enter the workforce will require the appropriate educational background and skills training for positions that are consistent with social standards. Work readiness schemes will also have to be in place to help support women transition from academic settings to commercial settings. Secondly, private and public sector resources could be jointly deployed to provide reskilling and recertification programs as tools to regain women who disengaged from the labour force to raise children, care for aging family members or address other domestic responsibilities. Programs to reestablish and prepare women to return to work will serve a large market of untapped talent.

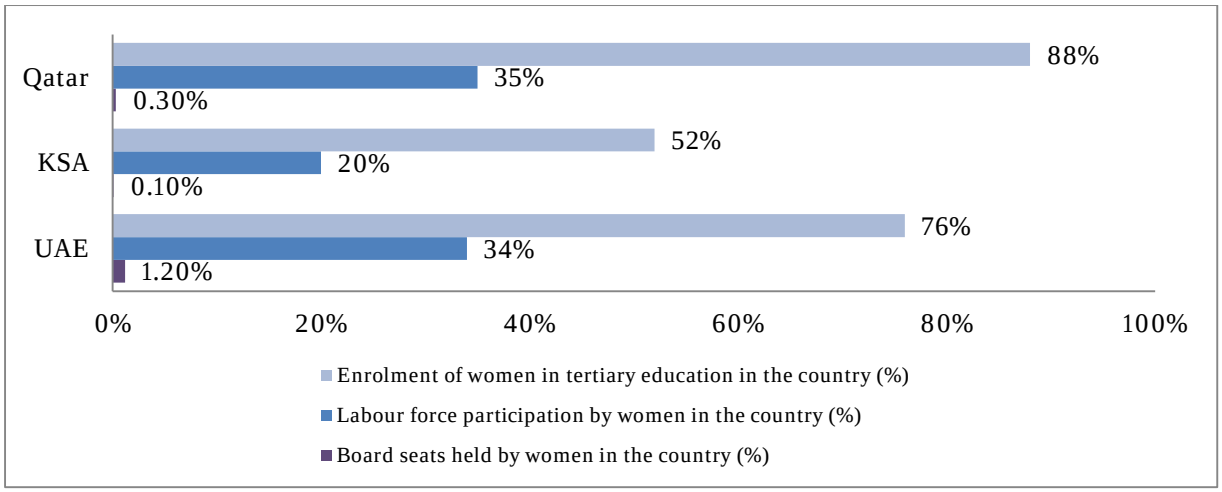
In order to help women move along career trajectories, they will need exposure to growth opportunities as well as examples of success. Mentorship, coaching, sponsorship and role models will not only boost female retention rates, but will empower them to develop fulfilling careers. What should remain consistent across all stages of a woman's career in the Middle East is flexibility in job design. Creative and flexible employment opportunities, which shift the emphasis away from gaining "face time" and instead focus on outcomes, will enable women to partake in the labour force without sacrificing domestic responsibilities. Flexible work environments and telework preserves the cultural and social values engrained in the region's composition.

[30] OECD (2013)
[31] World Bank (2013)
[32] The Pearl Initiative (2015)

Develop work readiness schemes to support school to work transitions

The Brookings Institution, in its Arab World Learning Barometer, has identified a "boomerang" effect for girls, who although are less likely to enter school than boys, once enrolled, are more likely to transition to secondary school and outperform boys academically, but then fail to enter the labour market.[33] The *Women's Careers in the GCC* report produced as part of a collaborative effort with the Pearl Initiative and PwC also underscores this notion by describing the "leaky pipeline" effect, whereby the fair representation of women in education rapidly diminishes at upper levels of the career ladder. This is demonstrated by the data for three GCC countries featured in the MTCI: Qatar, Saudi Arabia (KSA) and the United Arab Emirates (UAE). Taking Qatar as an example, 88% of women enroll in tertiary education in the country but only 35% participate in the labour force and below 1% of Qatari women go on to hold board seats.[34] Interestingly, no MTCI country reported data on female part-time workers, which itself is perhaps a notable indication that MENA labour markets do not offer flexible arrangements that can accommodate women.

Fig 5.1: Women's Diminishing Representation in the Labour Force



Source: Women's Careers in the GCC, Pearl Initiative, 2015

Countries that focus on the transition from education to work stand to boost female labour participation rates and reap the socio-economic and productivity rewards that come with having more women in the labour force. University and school programs should focus on supporting female graduates to enter their first jobs by strengthening career counseling, job shadowing and internship and apprenticeship programs. By establishing early pathways to employment and raising awareness of career opportunities, public and private sectors in conjunction with academic and training institutions can bolster female participation rates as evidenced by Saudi Aramco, energy and chemicals giant and the UAE's aerospace manufacturing firm, STRATA. In 2010, recognizing the importance of women's participation to build a nationally competitive workforce, Saudi Aramco established the "Women in Business" initiative to "help women achieve professional success" through specialized training programs, workshops, mentorship and networking opportunities including outreach to female university students to raise awareness of career opportunities.[35] STRATA has located itself in a regional city with a strong university engineering program so that its female employees can remain living with their families. More than a quarter of STRATA's workforce is female and 83% of its UAE national workforce is female.[36]

Beyond overcoming the challenge of encouraging and integrating women into the MENA labour force, another significant hurdle is bringing women back after they have been on a hiatus to establish and grow their families. Government-sponsored or employer-sponsored reskilling and recertification programs will allow women to refresh their skills and capabilities and help prepare them to return to the world of work. These practices alleviate the impact of extended leaves and assure women that they can cater to their home lives without sacrificing their careers entirely.

[33] Brookings Institute (2014)
[34] The Pearl Initiative (2015)
[35] WEF (2015) and Saudi Aramco (2012)
[36] Black (2013)

Create strategies for women's career growth and long-term success

Female employees should be encouraged to reach senior levels. They can be empowered through mentoring and coaching which develops their leadership potential and encouraged to seize opportunities to rise to leadership positions. Highlighting female role models will encourage other women to advance their careers while also changing attitudes among family members and peers. Female entrepreneurs and leaders cultivate female-sponsored ecosystems which allow them to tap the unfilled potential of other women. When women are placed and endorsed in leadership roles, they activate and motivate other women to get involved and thereby expand female participation. However, crucially, women must be supported to stay in work and excel through the middle layers of their career – a challenge faced globally as well as in the MENA region.

Glowork – A tool for female recruitment in Saudi Arabia

Glowork® is the first website & movement dedicated to female recruitment in the GCC and the most innovative enabler when it comes to creating equal opportunities for women. Glowork was formed by young Saudi entrepreneurs that aim to bring empowerment to women and increase diversity in the Saudi workforce. The goal is to start local and increase empowerment to the region.

Source: Glowork website: glowork.net/en/about-glowork

According to the PwC CEO Survey, 96% of MENA CEOs think that their talent diversity strategies, including female workforce efforts, have allowed their organizations to better attract talent. Yet, every MENA country except Qatar has a female-to-male earnings ratio that is less than 50% (Qatar is 20% above average), indicating the gap in competition between women and men. Struggling for equal pay, attempting to climb the corporate ladder or gaining board seats are universal challenges, not unique to only the MENA region. Women worldwide still experience traditional constraints to entering, remaining in and excelling in the workforce. However, MENA employers in both the public and private sectors can best grow their female talent through training, coaching, mentorship programs and exemplifying role models to encourage women to excel and lead in their personal careers.

Summary of key steps to be taken by MENA countries

The following table highlights the primary ways in which governments, policy makers, employers and academic and training institutions can impact female labour force participation rates in the in the near and long terms:

Developing the ecosystem for women's success		
• *Develop Work Readiness Schemes to support school to work transitions* • *Create strategies for women's career growth and long-term success*		
Government policy-makers	***Employers (public and private sector)***	***Academic and training institutions***
• Establish job-security to support women's career transitions • Create balance between public and private sector compensation and benefits packages to level the playing-field for attracting talent • Provide subsides, grants and tax incentives to encourage private enterprises to provide transportation, on-site child care facilities and other conditions necessary for women to work outside their homes • Ensure flexible job design is available in both public and private sector institutions throughout the MENA region to further support the culture of working women • Set high expectations for career achievement and support flexibility for girls and women • Understand the deeper barriers to women's participation and establish a platform to engage in dialogue and plan specific actions to mitigate these barriers • Influence familial perceptions about women in higher education and within the working world support long-term social change	• Involve family members in recruitment efforts as a means of attracting greater female participation • Host recruitment events with current exemplary female employees to act as role models for prospective candidates • Provide reskilling and recertification programs to reintroduce women back into the firm after extended periods of leave • Establish partnerships between government entities and enterprises to combine resources to support work environments conducive to women's participation • Provide transport to and from home, childcare facilities on site, extended family leave, flexible work hours and job sharing programs	• Host "career day" events and invite young women early in their careers to speak to current female students about their ability to achieve work/life balance – showcase role models • Introduce mentorship programs, connecting female students with current female employees at their targeted places of employment • Establish specialized pathways such as internships and apprenticeships to guide female students through the transition from school to employment • Provide reskilling/recertification classes for women both within educational sites and through online platforms • Leverage technology and social media to connect women who have re-gained employment with those who are still looking to provide a support network for guidance, mentorship and advice

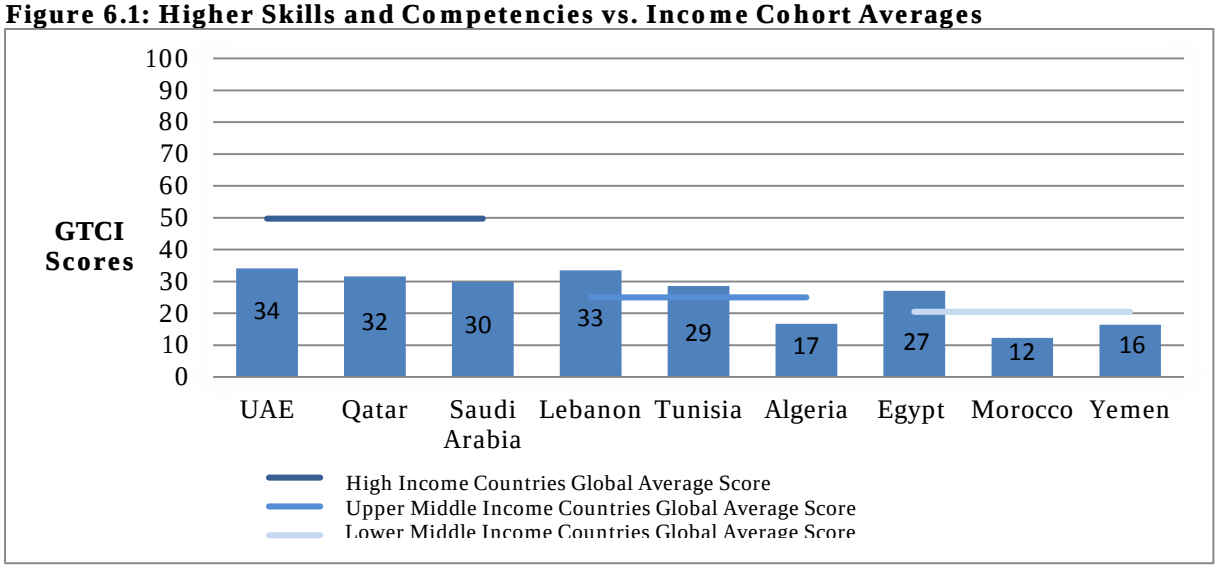
5. Fostering the next generation of leaders

The next generation of leaders in MENA countries will need the technical and management skills to solve complex business, economic, social and environmental challenges, the agility and acumen to adapt to rapidly changing market and geo-political dynamics; and the strategic skills to navigate their organizations and countries towards bright opportunities. A sustained focus on solving the youth unemployment crisis in the MENA region and attention to the role of civil society post-Arab Spring have led to the development of a strong set of programs aimed to support the development of young entrepreneurs and civil society leaders. Leadership development for the next generation of business and governmental leaders can absorb successful strategies from the entrepreneurship movement by making adequate formal training available, enabling young workers to develop responsibilities on the job and by providing mentoring programs to help develop interpersonal and behavioral leadership traits.

Strengthen higher education capabilities to prepare future leaders

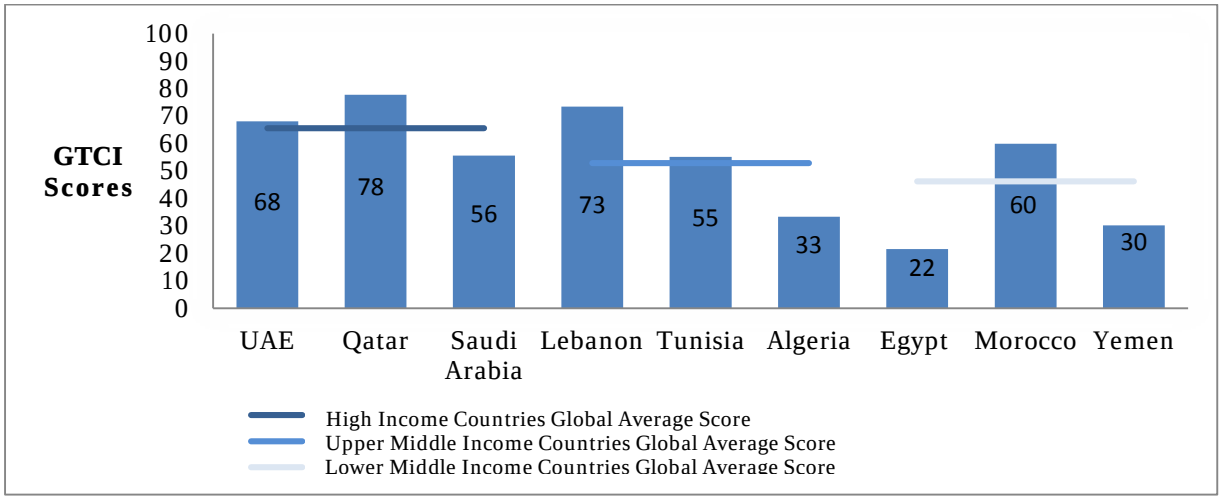
Prior to formally entering the job market, graduates must be equipped by higher education and training programs with the underlying skills and competencies that they will build upon during their career progression towards the highest levels of internationally-competitive firms and government organizations. These skills encompass both behavioral skills, such as the ability to listen, communicate, persuade and collaborate, as well as technical skills related to specific competencies required by the role. In this regard, the challenges of the formal education system across the MENA region must be addressed. On the sub-pillar of *higher skills and competencies*, only Egypt and Lebanon excel, scoring 30% higher than the average of their income group cohort, while all GCC countries, Morocco and Algeria scored 30% lower than the other countries' average, indicating that there is still significant room for improvement in tertiary education and professional growth. While elites may be able to afford to travel abroad for advanced training, the quality of schools in the country is an important indicator of the capacity of training for non-elites. On the indicator *quality of management schools*, the UAE, Qatar, Tunisia, Morocco and Lebanon are above average (Lebanon's score is 30% above average), while Saudi Arabia, Egypt, Algeria and Yemen are below.

Figure 6.1: Higher Skills and Competencies vs. Income Cohort Averages



Source: GTCI Report 2014

Figure 6.2: Quality of Management Schools vs. Income Cohort Averages



Source: GTCI Report 2014

This demonstrates the need for stronger linkages between academic and training institutions and employers with local schools in the region. Partnerships among local academic institutions with world-renowned business and technical schools will provide local schools with key insights to guide leadership development programs and other similar efforts. At the secondary and tertiary levels, schools should offer leadership programs to help identify and groom potential leaders who will then be taken into fast-track or high-potential tracks at the organizations they join. As these students move further into their careers and grow along with their organizations, organizations should institute career-based continuing education and training opportunities such as executive education programs, advanced technical certifications and structured leadership development programs. These programs not only contribute to the professional growth of the workforce, but also allow employees to feel valued and understand that they are being encouraged to meet and exceed expectations. This creates a positive feedback loop which pushes workers to take personal responsibility for their own growth to demonstrate excellence on the job. Employees that are encouraged to not only excel in their technical area but also to contribute to their teams and organizations develop and demonstrate observable leadership qualities.

Cultivate leadership traits in the emerging generation

On-the job leadership screening and development programs are essential to identifying young leaders and developing their skills. The 2014 GTCI report points out those successful leaders in the current era must have the ability to work in a volatile, uncertain, complex and ambiguous (VUCA) environment, which is undoubtedly pertinent to the rapidly changing MENA region. To operate in such an environment, leaders have to develop effective global leadership traits – cosmopolitanism, cognitive complexity, inquisitiveness, honesty, humility, personal resiliency, tolerance of ambiguity and cultural flexibility. These personal traits are important even though successful leadership *styles* in the Arab world place an emphasis on consultative and team-oriented approaches, in addition to charismatic traits. Employers with international offices can test and develop these traits through "exchange/swap" programs and send emerging leaders to other countries or units in order to develop cross-cultural awareness and adaptability, challenging them in ways that may not be possible within their home offices. Emerging leaders moving through rotations develop their capabilities to work in unfamiliar environments, develop resourcefulness and perseverance and have to prove themselves without the comfortable supportive social and family structures that they may be used to. While governments and companies should provide structured leadership pathways, individual leaders also play a pivotal role in growing and mentoring their own workforce by guiding their organizations' and nations' talent strategies. In addition to having an "eye for talent," leaders set the tone in their own organizations to encourage workers to take initiative and speak up, distribute responsibility and accountability and institute programs and standards to encourage "people development" at all levels.

Countries with a small population or that have an entrenched elite have a smaller talent pool of emerging leaders for both the public and private sectors, leading to increased leadership opportunities for younger nationals. Young leaders benefit from support and additional formal training as they take on more responsibility at earlier points in their career. In other countries where older generations are entrenched in leadership positions, thereby restricting the career advancement of young professionals, young professionals can also be vetted for leadership potential and provided with training and mentoring. Leadership development programs can screen for exceptional talent and make sure that participants receive additional managerial or leadership opportunities, in addition to training and coaching. MENA countries are doing relatively well in this area; on *willingness to delegate authority* (an essential element to encourage participation)**,** all countries scored within 20% of the average, except Qatar which scored more than 25% above average and Algeria, once again scoring very low at more than 35% below average. Workplace policies and HR strategies can also pro-actively provide opportunities for rising mid-level employees to take on increased responsibilities, demonstrate leadership potential, and receive mentoring and coaching.

Enhance governance in local organizations

Proper succession planning will help to open opportunities for rising leaders to take on greater responsibility in the workplace. Examples of succession planning in business are evident in MENA countries and are particularly relevant in the case of family businesses, which account for 90% of all businesses in the MENA region. Family businesses offer leadership pathways to the trusted next generation, enabling younger family members to demonstrate leadership potential within a familiar environment, supported by family relationships that can provide a mentoring function. Succession planning, when done effectively, creates a long runway for the next generation of family business leaders to gain the necessary education, training and experience and to demonstrate skills that support their move to the top. Succession planning and corporate governance reform can move experienced leaders into advisory and board roles, allowing new generations to occupy senior managerial and leadership positions.

Training and mentoring should be a part of a well-thought out succession planning process. Examples such as the Zamil Future Leaders Programme offer successful models of how succession planning and training programs can be used to grow leaders in family businesses, which are prevalent across the MENA region and show how benefits can be extended as well to non-family members.

Contend with brain gain and drain

MENA countries that intend to develop strong leaders must consider brain gain (attracting talented people) and contend with brain drain (retaining talented people). If a country cannot compete with alternative locations to attract top talent, including that of its own citizens, leadership preparation will suffer. Amongst the MTCI countries, Qatar stands out as scoring very high on both *brain gain*, where it ranks in third place overall and *brain drain* (it attracts talented people and keeps talented nationals), where it ranks in first place and also scores highly on *quality of management schools* and *reliance on professional management*, indicating that, across the board, Qatar is creating a conducive environment for top leaders. Morocco scores relatively higher than the lower middle income group average on *brain gain*, *reliance on professional management and executive pay*, but scored very poorly on the sub-pillar of *higher skills and competencies*, suggesting that the country can attract but not adequately prepare top talent. On the sub-pillar of *talent impact*, which aims to measure the output of talent, only Saudi Arabia, Yemen and Tunisia scored above average for their cohort, while UAE, Qatar, Morocco and Algeria scored 30% below average. It is these low-scoring countries which must do more to realize the benefits of the talent they do have.

Countries can spur talent development by sponsoring talent exchange mechanisms which encourage people to grow beyond their comfort zones, operate without familiar protective networks and immerse themselves in another operating environment. Government-sponsored talent exchange programs should mandate that participants return to their home countries at the conclusion of the program to contribute to the national economy, supported by the necessary and appropriate recognition of their value, among other incentives to return.

Zamil Future Leaders Programme

The Zamil Future Leaders Programme was launched in 2009 by the Zamil Group, a family-owned conglomerate established in Khobar, Saudi Arabia in the 1930s. Throughout the 1980's and early 2000's the firm introduced governance structures and professionalized its management as it expanded into new sectors and transformed into a closed joint-stock company. Recognizing a need to adopt a strategic and long-term approach to governance, develop excellent managerial talent, manage the third generation of family involvement and plan succession, the firm continued to institutionalize family involvement and professionalize HR, leading to the formation of a Talent Committee in 2007 and the launch of Zamil Third Generation (ZTG). In 2009 ZTG was transformed into the Zamil Future Leaders Programme (ZFL) and was opened to non-family members.

The programme develops highly personalized development plans based on psychometric testing and counseling to determine strengths and development needs and analysis of current and potential future roles in the company. The programme then provides internal and external training, coaching, mentoring and rotations within the group and across group companies. As of 2014, the programme covered 32 family members including fresh graduates and 101 non-family members, with planned intake of 111 non-family members into the next batch of participants.

Source: Pearl Initiative and Tharawat Family Business Forum, "Good Governance in Family Firms: Five Case Studies from the Middle East," Dubai: 2014

Summary of key steps to be taken by MENA countries

The table below summarizes the immediate and long-term steps government policy-makers, employers and academic and training institutions can take to develop the next generation of MENA leaders:

Fostering the next generation of leaders		
• *Strengthen higher education capabilities to prepare future leaders* • *Cultivate leadership traits in the emerging generation; and Enhance governance in local organizations* • *Contend with brain gain and drain*		
Government policy-makers	***Employers (public and private sector)***	***Academic and training institutions***
• Work to improve quality of advanced capability training in schools and vocational and tertiary institutions • Instate leadership-targeted programs and talent exchange mechanisms • Ability to identify future leaders from a young age and provide them with opportunities to enhance their skills	• Develop internal succession plans to allow young talent to take on management roles while retaining the expertise of the senior generation • Launch programs to identify and support talented young workers in becoming both corporate leaders and entrepreneurial leaders • Emphasize people development programs through rotational programs, job shadowing programs and secondment programs with institutions that have a propensity for creating leaders and high-powered professionals • Provide opportunities for young employees to develop and showcase their talents while ensuring companies have a solid cohort of leaders to be sustainable in the long-term	• Develop education and training programs to provide underlying behavioral skills in communication and collaboration as well as technical competencies needed for future career progression
Cross-sector	• Establish cross-sector partnerships to identify future leaders, provide formal and on-the-job training to enhance their skills and enhance opportunities to take on key roles in the public and private sector	

Summary of Recommendations

Our policy brief for the MENA Talent Competitiveness Index (MTCI) report has used the framework of the Global Talent Competitiveness Index (GTCI) to examine the situation across MENA for talent growth. We focus on six topics. The first two topics address broad enabling factors: building employable skills by matching education outputs to labour market demand, improving vocational education and enabling lifelong learning and promoting openness and labour mobility. The next four topics address specific talent needs in the region: developing technology and ICT skills, cultivating innovation and entrepreneurship talent, fostering the next generation of leaders and creating an ecosystem for women's success.

It is the intent of the GTCI and of this MTCI report, to provide practical and operational value to those trying to improve their talent competitiveness. This report is intended for a broad audience including governmental policy makers, educational and academic experts, education and training institutes, employers in the public and private sectors and students and employees. The recommendations suggested in the report are intended to be received by this broad audience and, hopefully, to stimulate debate, discussion and action. We have intentionally kept the recommendations at a high level, since it will be up to each different government, organization, or person, to consider what will work best in their own context if they want to improve their approach to growing talent in their workforce. We have also selectively supplemented the report with highlights of specific programs and projects that illustrate some of the recommendations in action. No doubt there are many, many other examples to be explored and shared.

The recommendations suggested in the report include some broad themes:

- **Improve skills and competency training.** Improve outcomes of formal education, vocational training and specialist advanced training to increase basic literacy and numeracy, develop higher cognitive functions such as critical thinking and problem solving and train students in needed technical skills, e.g. ICT or business skills.

- **Strengthen pathways between education and work.** Mandate that education and training institutions develop work-ready students and encourage students to gain experience to help them understand available career pathways through internships, apprenticeships and career counselling.

- **Collaborate across sectors.** Bring together government, education and training institutions and employers to articulate immediate and long-term needs, identify critical gaps in talent development as well as business environment and labour and immigration policies and develop and contribute to solutions.

- **Create an environment that supports both national and expatriate talent.** Understand that talent development includes ways to utilize and grow all available sources of workers and create regulatory and business environments to support the full range of workforce development, currently and in the future as market dynamics inevitably shift.

- **Focus on the future.** Understand that the pace of technological change and global interconnectedness mean that the challenges and opportunities of national economies, specific industries and individual skillsets and competencies will be moving targets. Identify competencies needed to meet future demand and focus on developing an agile workforce that is able to adapt to changing technologies and economic dynamics.

- **Support women.** Raise awareness of contributions women can make to their organizations, understand the particular challenges that women face due to cultural or family constraints, set expectations for women to succeed and institute women-friendly policies and approaches to education, training, work and work-life transitions and career advancement.

Country Highlight Analysis: Saudi Arabia

The Kingdom of Saudi Arabia (KSA) is the largest economy in the MENA region, with 28 million inhabitants and a GDP of $784.4 billion.[37] Saudi Arabia faces challenges to developing a competitive environment for talent that are similar to those faced by other high income economies in the region. Similar to the United Arab Emirates and Qatar, the GTCI ranks Saudi Arabia 47th and 45th in areas such as *formal education* which measures the performance of the educational system as well as *lifelong learning* which measures the extent of staff training and the proportion of firms offering training to existing employees. While these three economies have the financial resources in place to augment their human capital competitiveness, they have yet to implement the appropriate policies needed to improve educational and employment outcomes. Saudi Arabia also faces challenges due to its much larger size – such as a larger youth unemployment problem, greater demand for highly skilled workers, income disparities across the population and competitive disparities across its economic and physical landscape.

Efforts to improve workforce competitiveness and achieve a more knowledge-based economy are cornerstones of Saudi Arabia's efforts to drive economic growth through diversification. The country has put into place key nationalization policies to ease the imbalance between expatriate and national representation in the labour force and has established social safety nets such the *Hafiz* program, which provides unemployment benefits to ease the burden of joblessness. The Ministry of Labour has also instituted programs to raise female labour force participation rates, preserve an environment attractive to foreign workers, support small and medium enterprises to scale-up their businesses and to help budding entrepreneurs get started through funding and skills training programs. While Saudi Arabia recognizes the need for greater talent competitiveness particularly given the size of its unemployed youth population and the number of women also disconnected from the labour force, the country will have to further craft innovative solutions that are unique to its specific human capital challenges.

Building employable skills

Youth unemployment is high, yet the private sector faces a skills shortage. Young people are not successfully making the transition to work after graduating from education and training programs, or are not participating at all. According to the data provided by the Human Resources Development Fund (HRDF) in Saudi Arabia, while only 5% of 15-19 year olds were not in education, employment, or training (NEET) in 2014, this figure rises to 20% for 20-24 year olds, and 32% for 25-29 year olds.[38] At the same time, firms face a skills shortage for jobs that will drive economic transformation. The industry group IDC has projected that demand for ICT skills in Saudi Arabia is the largest among the seven MENA countries it studied, with a total networking skills gap of 73% – indicating that 73% of total demand is unmet.[39] The inclination to pursue public sector employment in lieu of private sector employment, much like the rest of the Gulf Cooperation Council (GCC) countries, is also a key facet of Saudi Arabia's workforce.

To address this concern on the supply side, educational reform should adjust curricula to provide students with the skills essential to private sector careers. These necessary skills grow more sophisticated as firms absorb technologies into their production and service delivery methods. Saudi nationals, therefore, need exposure to high quality education and training systems to develop specific capabilities to contribute to firms whose operations are more complex. Since nationwide education reform will not happen quickly, innovative solutions such as King Abdullah's Scholarship Program help fill the education gap in the short-term. This scholarship program allows KSA students to study abroad at approved universities with the goal to "*...qualify Saudi human resources in an effective manner so that they will be able to compete on an international level in the labour market....*"[40] The scholarship program outlines the fields of study that recipients may focus on, primarily in STEM and medicine, demonstrating the country's commitment to practical disciplines needed for private sector employers and the 21st century labour market at large. In addition to expanding scholarship programs,

[37] World Bank (2013)
[38] HRDF (2015)
[39] IDC (2013)
[40] Ministry of Education (2015)

Saudi Arabia could accelerate national curricula reform to make sure students are learning skills demanded by the marketplace, introduce mentoring, internship and career counseling programs to ensure that school-leavers enter employment and provide incentives for the vocational training system to focus on sustainable job placement by linking 1- and 5- year post-graduate employment rates to institutional performance metrics and funding decisions.

Promoting openness and mobility to enable talent growth

As of 2014, expatriates made up 37% of the total population of Saudi Arabia and comprised 60% of the employed population.[41] Expatriates either occupy high-skilled jobs that Saudi nationals do not have the education or professional experiences to fill, or they hold positions that Saudi nationals regard as menial. From a demand perspective, the government's nationalization scheme for Saudization has been reformed to be more enforceable in private sector firms. For example, a fee of SAR 200 is imposed per month and per foreign worker for companies which have a majority of expatriate workers. These funds help finance wage subsidies for Saudi employees in firms which are compliant with nationalization requirements.[42] Nationalization efforts fall short, however, when schemes too strongly emphasize quota requirements at the expense of actual investment in young employees. Saudi Arabia, along with other GCC countries, should create a culture where nationals are respected in private firms while also providing rigorous training and mentorship opportunities for Saudi employees to invest in their long-term growth and development within the firm.

Economies that significantly rely on expatriate workers have a much more delicate labour ecosystem in which international cultures, work ethics and communication styles permeate daily activities, which requires careful management at both the firm and government levels. The Ministry of Labour (MoL) within Saudi Arabia, while committed to workforce nationalization efforts, equally recognizes the present need for foreign employees to occupy high-wage private sector positions as well as those in more labour-intensive fields such as construction. The Ministry of Labour is committed to attracting and accommodating expatriate labour and has introduced favorable measures to promote their mobility.[43] Expatriate employees within firms that fail to meet nationalization requirements are permitted to freely change employers without having to gain approval from their current employers. Accordingly, firms that are meeting nationalization requirements are permitted to hire more expatriate workers as a result.[44] Policies that increase worker mobility aim to attract and retain expatriate labour while also providing accountability and responsibility for private firms to abide by Saudization policies. However, Saudi Arabia should align nationalization policies with a sound national workforce value proposition to satisfy both the needs of local and expatriate talent.

Developing ICT capabilities and supporting entrepreneurship

The deficiency of Information and Communication Technology (ICT) skills is most intensely felt in Saudi Arabia, which faces a projected 78.8% gap in workers with essential networking skills and 80.3% gap in emerging networking skills by 2016.[45] Saudi Arabia's education and vocational training systems are not preparing an adequate stock of domestic ICT skilled workers, which requires the country to rely on expatriate and temporary ICT workforce or risk companies failing to perform competitively. This also forces private firms to pay premiums for scarce local workers as well as for expatriate talent which is limited by strict visa regulations.[46] Saudi Arabia should increase the focus of vocational training programs to more pro-actively develop technical talent. Screening programs in schools could identify students with a proclivity for technical activities from the population of students that are at risk of dropping out and work to both raise expectations of the students and their families that these students could continue on a vocational track towards a skilled ICT career, as well as by undertaking mainstream curricular reform as suggested above. Easing visa restrictions on high-skilled workers would also allow more in-demand workers to enter the labour market and reduce costs for workers and for firms.

[41] HRDF (2015)
[42] IMF (2013)
[43] Saudi Arabia Employment Plan (2014)
[44] Saudi Arabia Employment Plan (2014)
[45] IDC (2013)
[46] IDC (2013)

Saudi Arabia can also improve the business environment to promote entrepreneurial activity, which will help curb unemployment and contribute to economic transformation and innovation. SMEs play an important role in providing basic products and services and serve as the main vehicles for employment and economic growth. Small and medium enterprises (SMEs) are particularly critical in less densely populated and remote areas within Saudi Arabia where multinational corporations and other large companies are unlikely to operate. The Entrepreneurship Development Program (EDP), a three week program sponsored by the Ministry of Labour, provides training and guidance to entrepreneurs in the early stages of their businesses' development to ensure they have the hard skills necessary to carry-out their day-to-day operations. EDP covers financial management and accounting, marketing, legislations, franchising and business planning and concurrently delivers soft-skills training.[47] While this intervention directly assists rising entrepreneurs, Saudi Arabia should extend its efforts to developing an ecosystem conducive to entrepreneurship and innovation which relaxes restrictions on expatriate ownership, enacts regulatory reforms to support new businesses (establishment, closure, hiring/firing, IP rights) and eases access to funding.

Fostering leadership and women's success

Although cultural forces play a prominent role in influencing women's activities outside the home across the entire MENA region, the challenges for women are most evident in Saudi Arabia. Domestic responsibilities, coupled with restrictions on mobility and social and cultural barriers has limited women's ability to participate in the workforce. While female enrolment in university education has grown as a share of total enrolment from 47% in 1995-1996 to 54% in 2010-2011[48] and continues to climb, this has not correspondingly translated into similar levels of female labour force participation. While women comprise 50% of the total working-age population, only 25% of these women are engaged in full-time employment and only 24% are engaged in professional careers.[49] It is also important to note that women, both expatriate and national, only represent 7% of directors and managers, underscoring the notion that of the women who do choose to work, very few make it to senior levels – this however is not distinct to the region and applies to both developed and developing countries worldwide.[50]

The Ministry of Labour recognizes the benefits of increased female labour force participation on collective productive output. Catering to social norms and cultural influences, the Saudi government has introduced interventions that will allow women to work in retail clothing shops, take part in telework and ease domestic responsibilities through the provision of day care facilities.[51] For example, in 2011, government policies mandated that all male staff in lingerie and cosmetic shops be substituted with female employees. The concept of easing restrictions on jobs available to women was further rolled out in 2014 to extend to a larger variety of retail stores. The concept of telework/telecommuting has also made it possible for women to work remotely - circumventing the need to leave their homes or commute to private firms' offices but still providing them with employment opportunities in accounting, telemarketing and customer support industries through virtual engagement.[52] The establishment of daycare centers will also alleviate women's domestic responsibilities, permitting them to take on full-time or part-time work while also delivering the benefit of early childhood education.

Recommendations

The Ministry of Labour in Saudi Arabia has made a concerted effort to address talent competitiveness within the country by adopting policies to increase employable skills, create an environment to attract and retain talent and foster innovation and entrepreneurship, while also addressing the role of women in the workplace. Listed below are further recommendations to support talent competitiveness in Saudi Arabia:

[47] UNECOSOC (2015)
[48] IMF (2013)
[49] HRDF (2015)
[50] HRDF (2015)
[51] Saudi Arabia Employment Plan (2014)
[52] Saudi Arabia Employment Plan (2014)

- ***Building employable skills.*** Tailor nationalization programs to incentivize private sector employers to invest in Saudi nationals, not just hire them to meet quota targets, thereby eliminating the market failures of "ghost workers" and "shadow employment". Through internship and apprenticeship programs, prospective employers can begin to train qualified Saudi nationals for potential employment opportunities while also easing the school-to-work transition.

- ***Openness and mobility to enable talent growth.*** Saudi Arabia has attracted both high and low-skill expatriate labour through tax-free salaries while private firms have supplemented this with allowances for housing, transportation and children's schooling to accommodate high-skilled labour and their families. The Ministry of Labour, while providing freedom in mobility for expatriate employees, conditions this freedom upon employers' nationalization practices. To further attract and retain high-skilled expatriate labour, Saudi Arabia should align nationalization policies with a sound national workforce value proposition to mitigate cumbersome regulatory practices such as visa regulations and work permits.

- ***Developing ICT capabilities and supporting entrepreneurship***. While the Entrepreneurship Development Program (EDP) is one example that facilitates entrepreneurial activity within the Kingdom of Saudi Arabia, KSA should endeavor to create a robust regulatory framework conducive to entrepreneurship and innovation which relaxes restrictions on expatriate ownership and enacts regulatory reforms to support new businesses (establishment, closure, hiring/firing, IP rights).

- ***Fostering leadership and women's success.*** Through creative job design, flexible working hours, the provision of child care facilities and transportation, Saudi Arabia can increase the number of women active in the labour force. The Ministry of Labour has already undertaken efforts to place women in gender appropriate roles in light of cultural and social norms.

Appendix A: GTCI 2014 Summary and Overview[ii]

Countries are competing globally to grow talent internally, attract the talent they need and retain those that contribute to competitiveness, innovation and growth. To achieve their goals in such a context, governments, businesses and various other stakeholders need quantitative instruments that can help better inform their decisions and benchmark the efforts made and results obtained in different socioeconomic environments with respect to talent management and competitiveness.

The Global Talent Competitiveness Index (GTCI), of which the Middle East and North Africa Talent Competitiveness Index (MTCI) is an offshoot, has been designed to help address this challenge by providing a composite view of talent competitiveness applicable to a large number of countries (93 this year). While a number of composite indicators concerning skills, talent and human capital have been developed in recent years, both private and public players in the field see the need for a neutral, global and respected index that will enable them to: 1) assess the effectiveness of talent-related policies and practices; 2) identify priorities for action in relevant areas; and 3) inform local and international debate in this arena and the GTCI strives to fill the above gaps in knowledge.

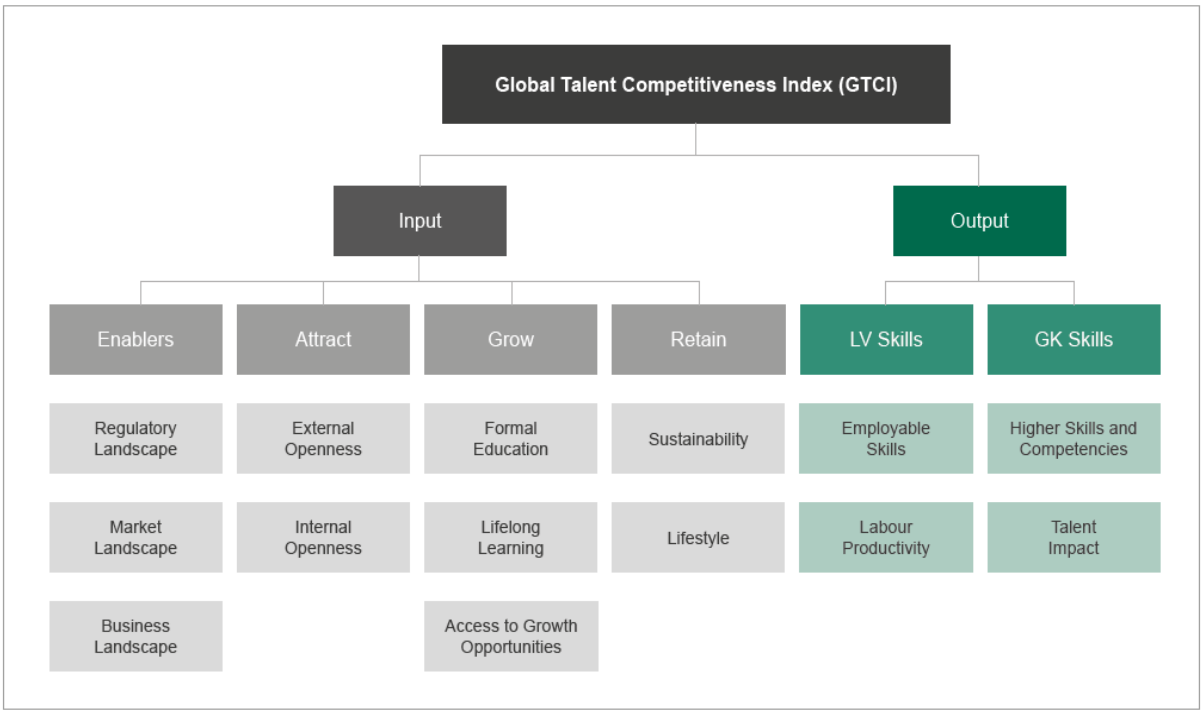
The GTCI conceptual framework

In the context of the GTCI, talent competitiveness refers to the set of policies and practices that enables a country to attract, develop and retain human capital that contribute to its productivity (where productivity is defined as Output per unit of Input). The GTCI is an Input/Output model, in the sense that it combines an assessment of what countries do to produce and acquire talents (Input) and the kind of skills that are available to them as a result (Output).

The Output parameters of the GTCI differentiate between two levels of talent, which can be broadly thought of as mid-level and high-level skills. Mid-level skills, labelled **Labour and Vocational Skills (LV Skills)**, describes skills acquired through vocational training and are those relevant to technical roles in the workforce. The economic impact of LV skills is measured by labour productivity, the relationship between pay and productivity and mid-value exports that rely on such skills. High-level skills, labelled **Global Knowledge Skills (GK Skills)** deal with knowledge workers in professional, managerial or leadership roles. Their economic impact is evaluated using indicators relating to innovation and entrepreneurship and sophisticated exports that rely on such abilities. Despite its focus on talent, it does not measure a third type of human capital – unskilled labour – though discussions will sometimes embrace lower level skills. Together, LV and GK Skills constitute the two Output pillars of the GTCI model.

The Input parameters of the GTCI are based on the 'Attract-Grow-Retain' framework used by multinational corporations to steer talent management. MNCs frame talent management in these terms, defining talent management as an organization's efforts to attract, select, develop and retain talented employees to meet their strategic needs. **Attracting** talent, in the context of national competitiveness, should be viewed in terms of the growth of the talent pool – external attraction involving appropriate immigration, as well as internal attraction focused on removing barriers to entering the talent pool for groups such as those from underprivileged backgrounds, women or older people. **Growing** talent has traditionally meant education, but it should be broadened to include apprenticeships, training and continuous education, in addition to experience and access to growth opportunities (while we acknowledge that most skill development occurs through on-the-job experience, much remains to be done to conceptualise and measure its exact role). The more talented the person, the better the global opportunities he or she can find elsewhere. **Retaining** talent is thus necessary to ensure sustainability and one of its main components is quality of life. Furthermore, the regulatory, market and business landscapes in a country can facilitate or impede talent attraction and growth and the GTCI calls these elements **Enablers**. Together, Enablers, Attract, Grow and Retain constitute the four Input pillars of the GTCI model.

[ii] Prepared by INSEAD



The GTCI attempts to offer an approach to talent competitiveness issues that is at once holistic, action-oriented, analytical and practical. As described earlier, the GTCI is a composite index, relying on a simple but robust Input/Output model, composed of six pillars (four on the Input side and two on the Output side), as illustrated in the above figure. The GTCI generates three main indices that are the most visible focus for analysis and discussion, namely:

1. **The talent competitiveness Input sub-index:** It is composed of four pillars, describing the policies, resources and efforts that a particular country can harness to foster its talent competitiveness. Enablers (Pillar 1) reflects the extent to which the regulatory, market and business environments create a favourable climate for talent to develop and thrive. The other three pillars describe the three levers of talent competitiveness, which focus respectively on what countries are doing to Attract (Pillar 2), Grow (Pillar 3) and Retain (Pillar 4) talent. The Input sub-index is the simple arithmetic average of the scores registered on these four pillars.

2. **The talent competitiveness Output sub-index**: It aims to describe and measure the quality of talent in a country that results from the policies, resources and efforts captured by the Input side of the GTCI model. It is composed of two pillars, describing the current situation of a particular country in terms of Labour and Vocational (Pillar 5) and Global Knowledge (Pillar 6) Skills. The Output sub-index is the simple arithmetic average of the scores obtained on these two pillars.

3. **The Global Talent Competitiveness Index** is computed as the simple arithmetic average of the scores registered on the six pillars across the Input and Output sides of the GTCI model.

Significant improvements have been brought to the GTCI model this year. One of the most visible among these changes has been the choice of theme for this second edition. Last year, the GTCI underscored how the world was becoming both more global and more mobile and how this trend contributed to place talent at the heart of a number of crucial debates all over the world. By focusing on *"Growing talent for today and tomorrow"* this year, the GTCI naturally emphasises education and addresses one of the key elements of talent policy. It recognises that the all-too-frequent mismatch between education systems and the needs of labour markets call for innovative attitudes and policies. By stressing that talent growth must occur over differing time horizons, it indicates that relevant policies must address both immediate issues (e.g., youth unemployment) as well as longer-term concerns (e.g., reshaping education systems).

The second implication for this year relates to the variables that compose the GTCI's underlying model. Many new variables and data sets have been tested for coverage, consistency and explanatory power. Only a small number were deemed sufficiently reliable and acceptable for inclusion in the latest GTCI model. Overall, the number of variables has increased from 48 to 65. This increase has not significantly diminished the overall country coverage of the GTCI, which remains close to 100 (93 this year, representing 83.8% of the world's population and 96.2% of the world's GDP). The audit carried out by the Joint Research Council (JRC) of the European Commission has confirmed that the changes introduced in the model have improved its accuracy, while maintaining its robustness. Improvements will continue to be made to the GTCI model, based on further discussions with academics, business and government leaders and feedback from users.

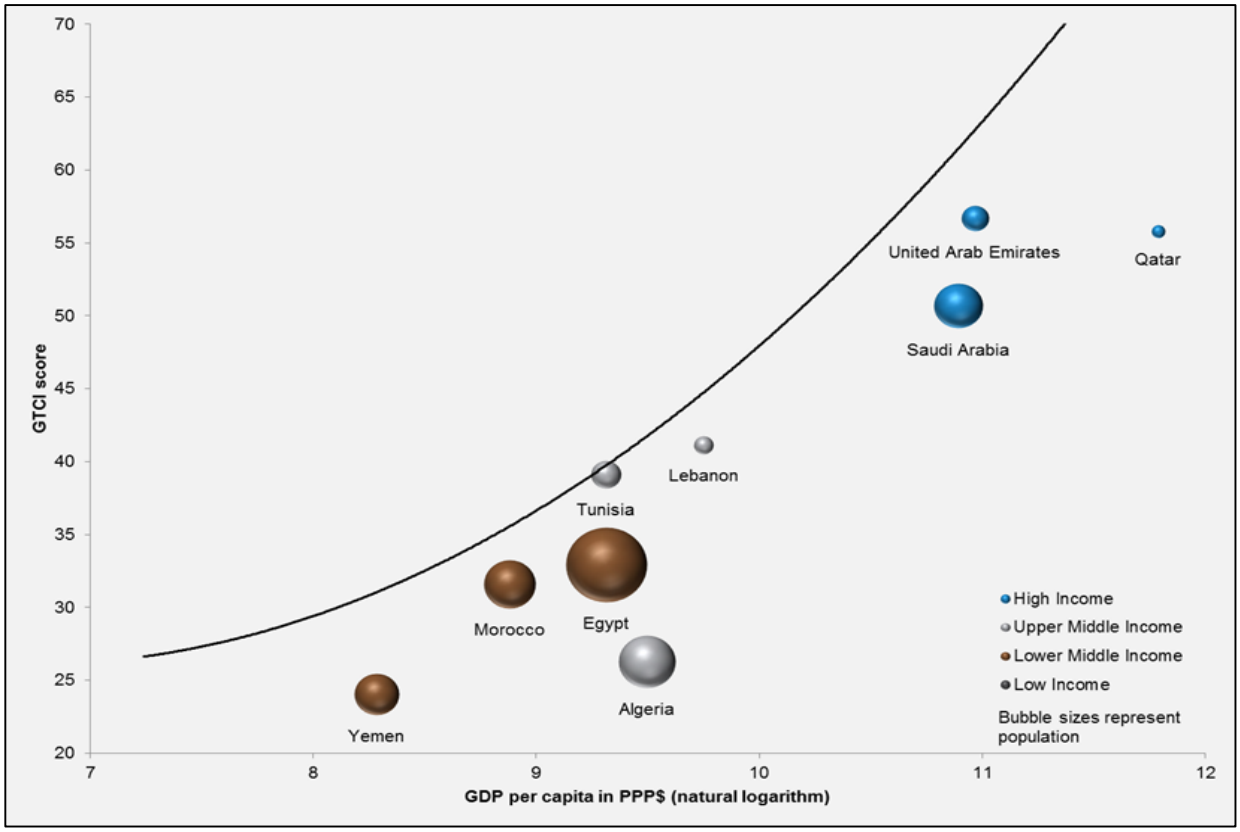
The MTCI: A MENA-focused analysis

Regional Group	Enablers	Attract	Grow	Retain	LV Skills	GK Skills	Avg. GTCI	Avg. Rank
MTCI Countries	50.53	42.64	37.68	45.57	37.30	25.12	39.81	61
Central and Southern Asia	37.14	31.10	42.39	36.95	34.94	23.02	34.47	76
Europe	55.13	47.07	69.39	59.07	46.69	46.00	53.84	30
East, Southeastern Asia and Oceania	47.57	40.89	53.79	42.74	43.75	35.57	47.98	43
Sub-Saharan Africa	49.25	28.45	20.10	28.38	28.82	16.76	33.88	76
Latin, Central America and Caribbean	49.54	42.99	44.81	39.31	33.34	20.76	40.43	60
Northern America	75.74	73.38	69.94	55.61	55.38	68.38	67.41	5

The MTCI provides a snapshot of the state of talent competitiveness in MENA countries covered by the GTCI by looking into the specifics of growing, attracting and retaining talents, as well as the importance of relevant government policies. The analysis uses the same source of comparable global data in order to benchmark the country in question against countries in other regions and stages of economic development across several dimensions relating to talent competitiveness.

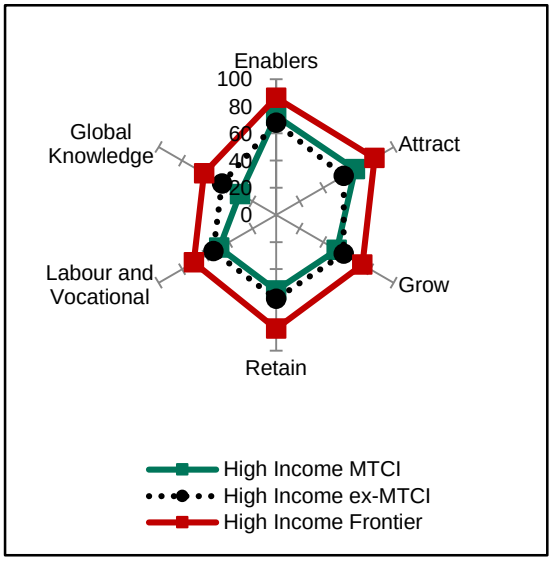
This report focuses on the following 9 MENA countries: Saudi Arabia, United Arab Emirates, Qatar, Lebanon, Tunisia, Egypt, Morocco, Algeria and Yemen. Together, they are home to 3.30% of the world's population, represent 2.75% of the global economy and occupy an average rank of 61 on the GTCI (out of 93 countries). The MTCI countries perform well on the Enablers, Attract and Retain pillars on the Input side, equalling or outscoring all regions barring Europe and Northern America. That said, the Grow pillar is a clear area of weakness, where only Sub-Saharan Africa scores lower. The Output side shows contrasting performance, with the Global Knowledge Skills pillar lagging behind the Labour and Vocational Skills pillar. In addition to Europe and Northern America, the MTCI countries are outscored on both these fronts by East, Southeastern Asia and Oceania, which is perhaps indicative of that region having manufacturing-centric industrial economies in addition to service-oriented knowledge economies. Global Knowledge Skills is an area of particular concern, since the largest 'distance to frontier' can be observed in this aspect of talent competitiveness.

Given the variance intrinsic to this subset, one has to be careful when drawing inferences. This is especially relevant given the strong positive correlation between GTCI scores and GDP per capita. Richer countries tend to have better universities and a greater ability to attract foreign talents through better quality of life and higher remuneration, resulting in higher talent competitiveness. The MTCI countries span a GDP per capita range of US$127,800, with High Income (Saudi Arabia, United Arab Emirates, Qatar), Upper Middle Income (Algeria, Lebanon, Tunisia) and Lower Middle Income (Egypt, Morocco, Yemen) economies. It is therefore advisable to compare results across income groups to control for this 'wealth effect'.


70
65
60
55
50
45
40
35
30
25
20
GTCI score
7
8
9
10
11
12
GDP per capita in PPP$ (natural logarithm)
United Arab Emirates
Qatar
Saudi Arabia
Lebanon
Tunisia
Egypt
Morocco
Algeria
Yemen
High Income
Upper Middle Income
Lower Middle Income
Low Income
Bubble sizes represent population

High Income MTCI Countries

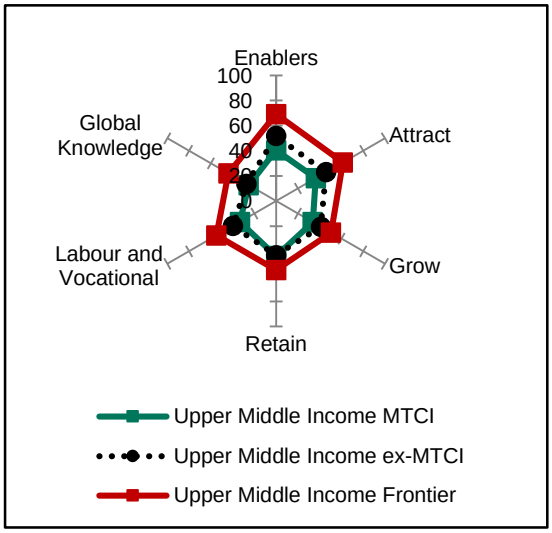
Saudi Arabia, United Arab Emirates and Qatar, as shown in the figure below, outperform other countries within their income group when it comes to providing an environment of enablers, as well as in attracting top-quality talent from abroad. These countries have favourable Regulatory, Market and Business landscapes in addition to high degrees of External Openness. There is discernible underperformance on the remaining pillars when compared to the High Income ex-MTCI countries. This gap is magnified if we consider the High Income Frontier, which is comprised of the highest scores of High Income countries across all pillars.



Formal Education is an area that all three countries must address, with both Vocational and Tertiary enrolment acting as drags on their respective rankings. Lifelong Learning is an area of weakness for Saudi Arabia, where efforts have to be made to improve the quality of its management schools and increase the extent of staff training provided by local firms. Despite otherwise strong scores on Access to Growth Opportunities, the United Arab Emirates must take steps to ease the voicing of concerns to officials. Labour and Vocational Skills in all three countries are negatively impacted by sub-par Employable Skills, with secondary-educated populations and workforces showing room for improvement. Another interesting observation is that world-leading labour productivities per employee do not seem to be translating into vocational skill-intensive exports, which are among the lowest in the world. Global Knowledge Skills in all three countries are adversely affected by weak Higher Skills and Competencies, with poor tertiary-educated populations and workforces being the primary drivers of this phenomenon. Talent Impact appears to be the biggest obstacle faced by the United Arab Emirates and Qatar, with poor scores on innovation output and new business density. Sophisticated exports continue the trend shown by vocational skill-intensive exports, highlighting the reliance of these countries on natural resources and the need for economic diversification.

Upper Middle Income MTCI Countries

Lebanon, Tunisia and Algeria, as shown in the figure below, underperform other countries within their income group on every aspect of talent competitiveness, except when it comes to retaining talent. This performance divide is more evident if we consider the Upper Middle Income Frontier, which is comprised of the highest scores of Upper Middle Income countries across all pillars.

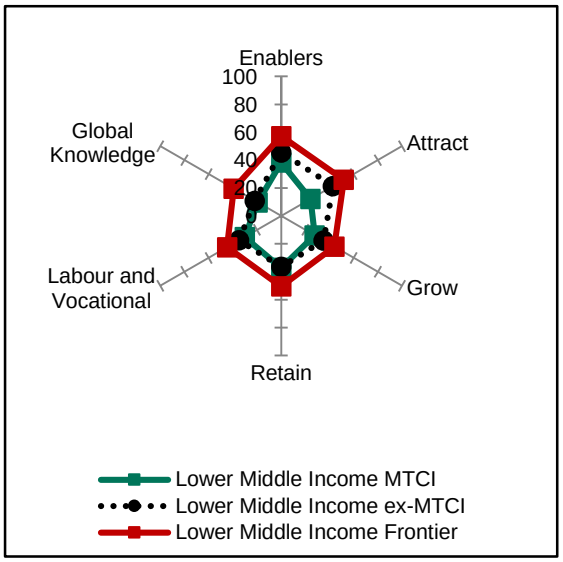


All three countries have unfavourable Regulatory, Market and Business landscapes which are most negatively impacted by the lack of political stability, ease of doing business and reliance on professional management. Unlike Lebanon, Tunisia and Algeria are especially weak when it comes to growing talent, with Formal Education and Lifelong Learning being areas of concern, where the extent of staff training provided by local firms shows room for improvement. In addition, there is scope for all three countries to work on improving their Access to Growth Opportunities, with the willingness to delegate authority as well as voicing concern to officials needing encouragement. When it comes to retaining talent, Tunisia and Algeria have strong Sustainability scores due to their pension systems, whereas Lebanon lags behind in this regard. On the Output

side, Labour and Vocational Skills are adversely affected by sub-par Employable Skills due to poor secondary-educated populations and workforces. Labour Productivity is one of Lebanon's strengths, whereas Tunisia's high level of vocational skill-intensive exports is offset by relatively weak scores on the relationship of pay to productivity and labour productivity per employee. Algeria on the other hand shows room for improvement across most aspects of Labour Productivity, with the relationship of pay to productivity and vocational skill-intensive exports needing the most attention. Lebanon and Tunisia have relatively high Global Knowledge Skills, driven by strong Higher Skills and Competencies in the case of the former and robust Talent Impact in the case of the latter. Once again, Algeria lags behind its peers when it comes to this aspect of talent competitiveness.

Lower Middle Income MTCI Countries

Egypt, Morocco and Yemen, as shown in the figure below, underperform other countries within their income group on every aspect of talent competitiveness, except when it comes to retaining talent. This performance divide is more evident if we consider the Lower Middle Income Frontier, which is comprised of the highest scores of Lower Middle Income countries across all pillars.



All three countries lag behind in their ability to attract top-quality foreign talent. They all suffer from poor Internal Openness, however Morocco, unlike Egypt and Yemen, has relatively high External Openness. Growing talent is an area of concern, with the countries showing varying performance across its underlying components: Formal Education, Lifelong Learning and Access to Growth Opportunities are the highlights of Egypt, Morocco and Yemen respectively. Whereas Egypt is relatively successful in retaining its talents, both Morocco and Yemen face strong headwinds in this regard due to low Sustainability and Lifestyle scores. On the Output side, Egypt shows a good balance between Labour and Vocational and Global Knowledge skills, with robust Employable Skills and Higher Skills and Competencies underpinning its strong performance. This provides further evidence of the country's educational system forming the basis of its talent competitiveness. On the other hand, Labour Productivity is one of Morocco's strong suits, with both the relationship of pay to productivity and vocational skill-intensive exports outperforming that of its peers. Egypt and Yemen outscore Morocco when it comes to Global Knowledge Skills, with Higher Skills and Competencies impacting the results of the former and Talent Impact boosting the performance of the latter. Despite Morocco lagging behind on the two components of Global Knowledge Skills, it outperforms both Egypt and Yemen when it comes to innovation output and sophisticated exports.

ALGERIA

Global GTCI Position

Algeria is ranked 91st out of the 93 countries in the GTCI. The country displays very little variation across the pillars on both the Input and Output sides of the model, with its real strength being its ability to retain talents.

RANK (out of 93)	**91**
Population (millions)	**39.21**
GDP per capita (PPP$)	**13,304**
GDP (US$ billions)	**210.18**
GTCI Score	**26.28**
GTCI Score (Income Group Average)	**40.84**

Income/Regional Group Comparison

Algeria is classified as an Upper Middle Income economy, in addition to being an oil exporter. The regional peers ranked ahead of the country are all High Income Oil Exporters, with the exception of Lebanon, Tunisia, Egypt and Morocco. Algeria is ranked 8th in the MTCI and visibly underperforms other Upper and Lower Middle Income economies that constitute the index.

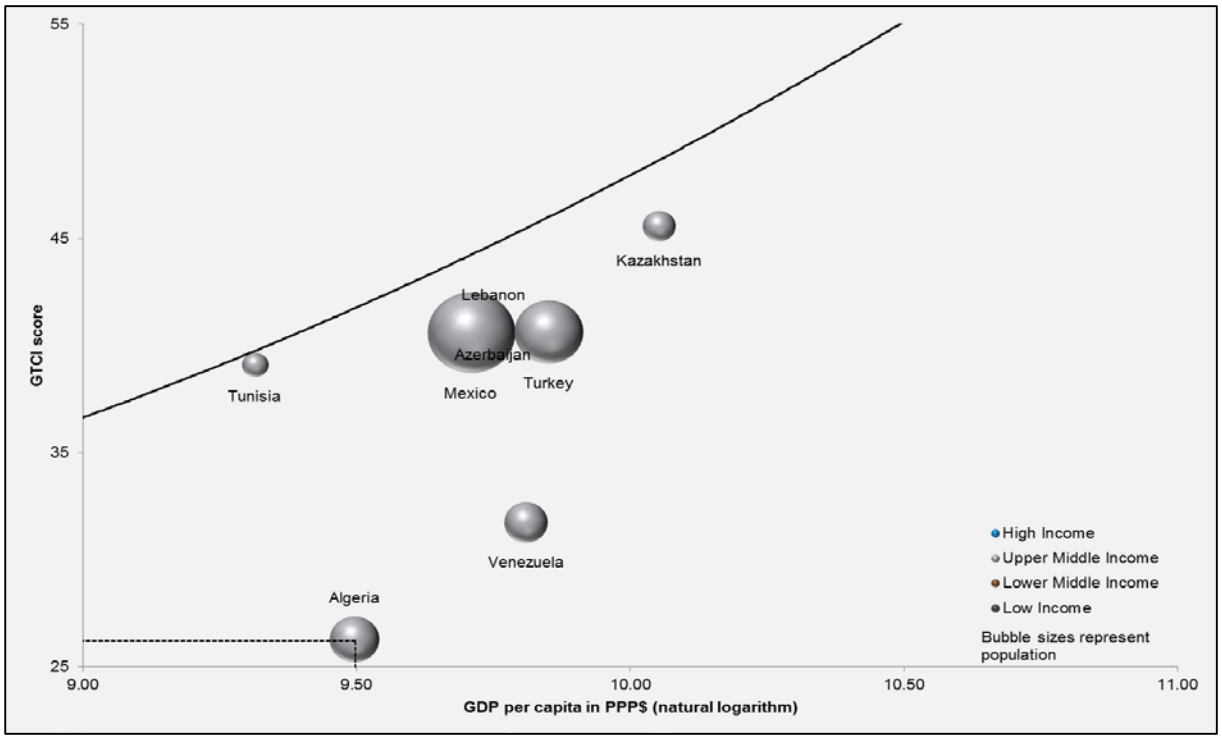
	Weakness	GTCI Rank	Strength
		91	
Input			90
Enablers	92		
Attract			90
Grow	92		
Retain			67
Output	92		
LV Skills		91	
GK Skills			87

Comparison Group	Top 3 Group Scores	SCORE GAP: DZA score MINUS Top group score	Percent of countries in the group ranked below DZA
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-19.31	0
Europe	Switzerland, Luxembourg, Sweden	-45.18	0
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-30.43	8
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-44.44	0
Sub-Saharan Africa	South Africa, Botswana, Namibia	-15.96	17
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-26.92	0
Northern America	United States, Canada	-42.04	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-45.18	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-24.21	0
Lower Middle Income*	Armenia, Mongolia, Philippines	-17.20	5
Low Income	Cambodia, Uganda, Bangladesh	-5.56	25

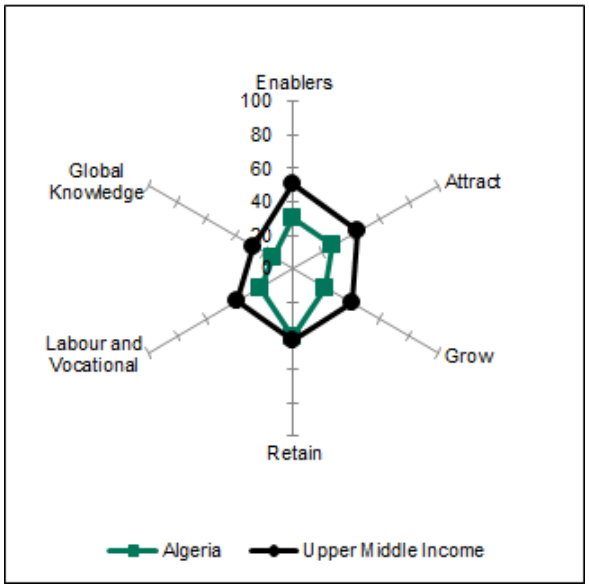
Note: Algeria (DZA) belongs to the comparison groups marked with a *

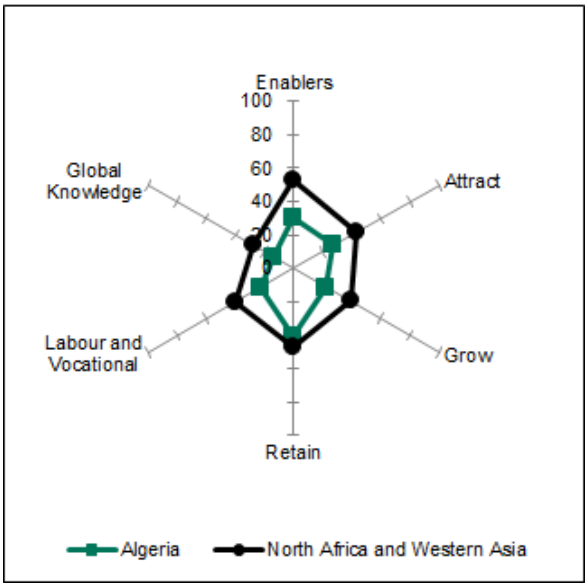
The Group of Competitors

Algeria's group of competitors includes those Upper Middle Income countries located in its broader region (Azerbaijan, Turkey, Lebanon) or are oil exporters (Kazakhstan, Venezuela, Mexico). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: DZA pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: DZA pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-55.79	Kazakhstan, Turkey, Azerbaijan	-26.97
Attract	Singapore, Luxembourg, Qatar	-56.09	Kazakhstan, Azerbaijan, Mexico	-30.98
Grow	Netherlands, United States, Switzerland	-50.82	Lebanon, Mexico, Kazakhstan	-22.99
Retain	Luxembourg, Switzerland, United States	-42.69	Azerbaijan, Kazakhstan, Turkey	-7.28
Output				
LV Skills	Czech Republic, Slovakia, Germany	-47.79	Kazakhstan, Azerbaijan, Mexico	-23.39
GK Skills	Luxembourg, Singapore, United States	-47.60	Lebanon, Turkey, Mexico	-17.03

Algeria markedly underperforms its regional average across all pillars, with the Retain pillar being its sole relative strong point. This trend carries on into the income group average comparison.

Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	DZA ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: DZA sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	81	Australia, Canada, Switzerland	-66.79
Lifelong Learning	91	Switzerland, Finland, Ireland	-52.38
Access to Growth Opportunities	92	Denmark, United States, Netherlands	-45.97
LV Skills			
Employable Skills	83	Czech Republic, Slovakia, Germany	-61.82
GK Skills			
Higher Skills and Competencies	78	United States, Canada, Finland	-54.84
Talent Impact	88	Luxembourg, China, Singapore	-56.74

Algeria shows scope for improvement across the board, but has pockets of outperformance. In an otherwise weak environment of enablers, the ease of starting a foreign business and number of venture capital deals stand out. The country also has better vocational and tertiary enrolments than some of its wealthier neighbours such as Qatar and the United Arab Emirates. Lifelong Learning is somewhat handicapped by the poor extent of staff training offered by domestic firms, which offsets the high proportion of firms that do offer such training. Algeria has a healthy stock of researchers, technicians and associate professionals. However the lack of adequate cluster development affects both sophisticated and vocational skill-intensive exports. New product entrepreneurial activity and new business density are relative strengths, but it will need to significantly improve its innovation output in order to boost its Talent Impact ranking.

EGYPT

Global GTCI Position

Egypt is ranked 80th out of the 93 countries in the GTCI. The country's main strength is its ability to retain talents and to a lesser extent its Labour and Vocational as well as Global Knowledge Skills. In contrast, it lags behind its peers when it comes to attracting and growing talents, as well as in providing a favourable environment of enablers.

RANK (out of 93)	**80**
Population (millions)	**82.06**
GDP per capita (PPP$)	**11,084**
GDP (US$ billions)	**271.97**
GTCI Score	**32.93**
GTCI Score (Income Group Average)	**35.11**

Income/Regional Group Comparison

Egypt is classified as a Lower Middle Income economy. With the exception of Lebanon and Tunisia, the regional peers ranked ahead of it are all High Income Oil Exporters. Egypt is ranked 6th in the MTCI, above other Lower Middle Income economies that constitute the index.

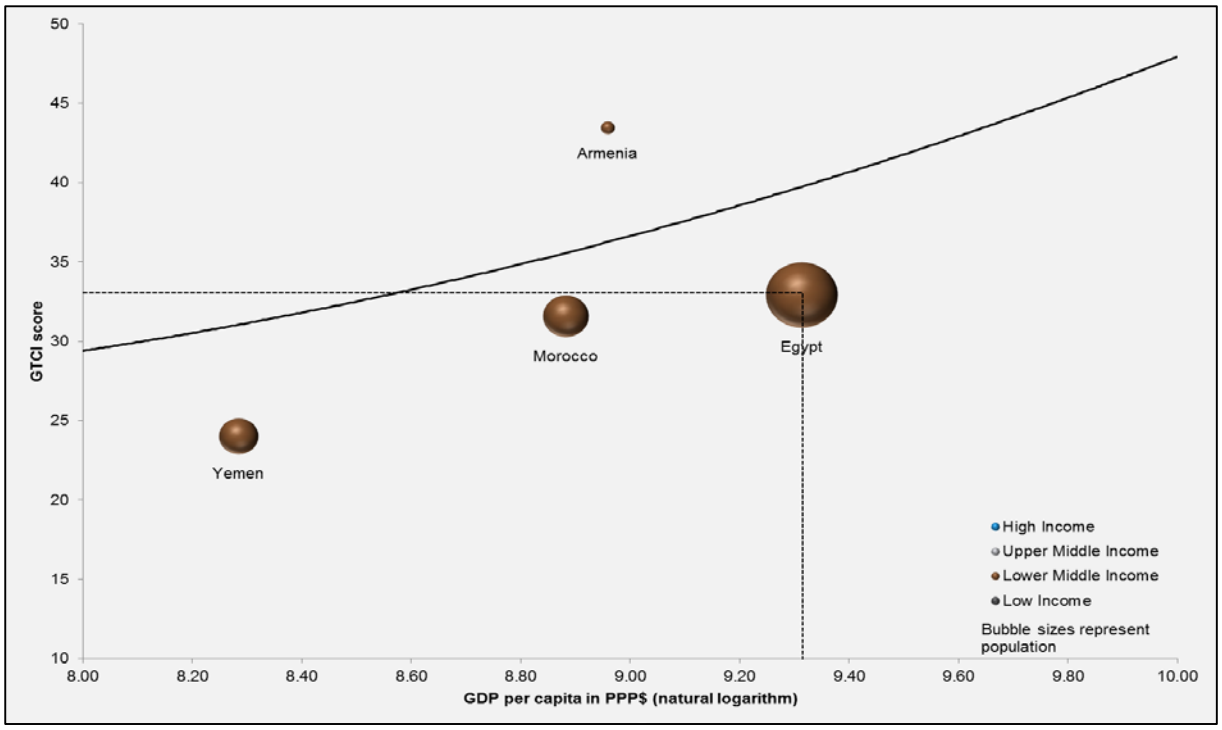
	Weakness	GTCI Rank	Strength
		80	
Input	88		
Enablers	86		
Attract	92		
Grow	88		
Retain			43
Output			66
LV Skills			62
GK Skills			67

Comparison Group	Top 3 Group Scores	SCORE GAP: EGY score MINUS Top group score	Percent of countries in the group ranked below EGY
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-12.66	43
Europe	Switzerland, Luxembourg, Sweden	-38.53	0
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-23.77	23
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-37.79	15
Sub-Saharan Africa	South Africa, Botswana, Namibia	-9.31	50
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-20.27	11
Northern America	United States, Canada	-35.39	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-38.53	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-17.56	10
Lower Middle Income*	Armenia, Mongolia, Philippines	-10.55	35
Low Income	Cambodia, Uganda, Bangladesh	1.09	100

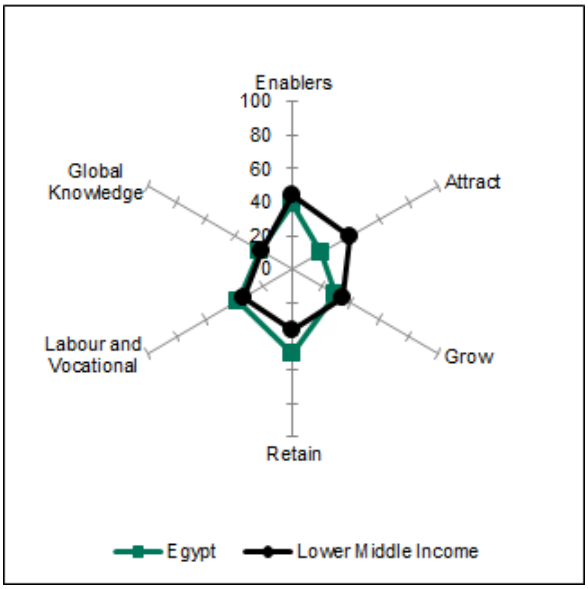
Note: Egypt (EGY) belongs to the comparison groups marked with a *

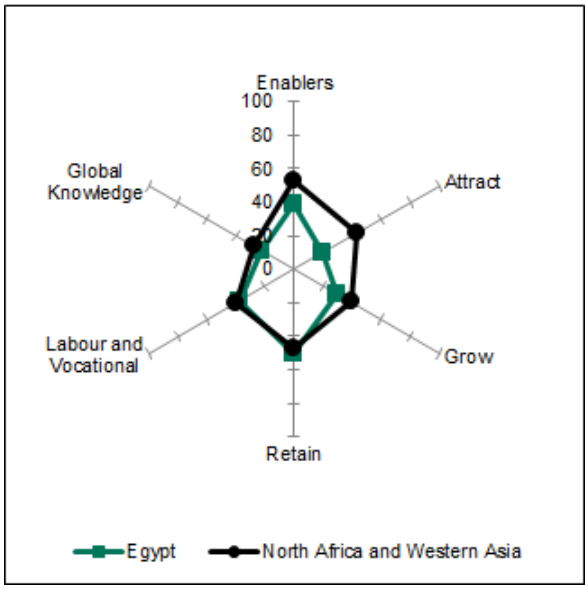
The Group of Competitors

Egypt's group of competitors includes those Lower Middle Income countries located in its broader region (Armenia, Morocco, Yemen). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: EGY pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: EGY pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-47.83	Armenia, Morocco, Yemen	-18.79
Attract	Singapore, Luxembourg, Qatar	-64.15	Armenia, Morocco, Yemen	-27.55
Grow	Netherlands, United States, Switzerland	-43.77	Armenia, Morocco, Yemen	-5.76
Retain	Luxembourg, Switzerland, United States	-33.65	Armenia, Morocco, Yemen	0.83
Output				
LV Skills	Czech Republic, Slovakia, Germany	-32.39	Armenia, Morocco, Yemen	-7.04
GK Skills	Luxembourg, Singapore, United States	-39.04	Armenia, Yemen, Morocco	-0.24

Egypt outperforms its regional average on the Retain pillar and underperforms it across all other pillars. Within its income group, the country scores highly on Labour and Vocational as well as Global Knowledge Skills, in addition to its existing strength when it comes to retaining talents.

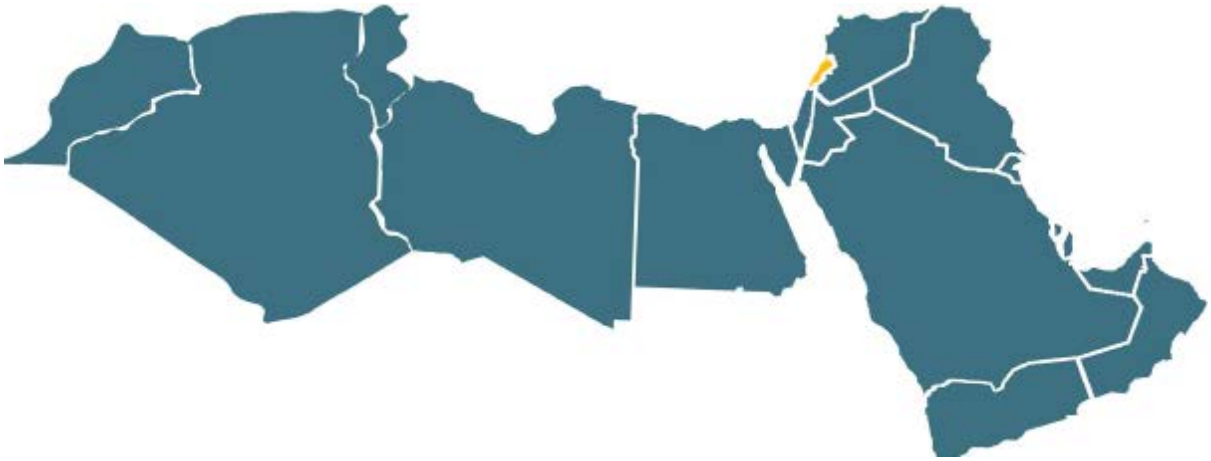
Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	EGY ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: EGY sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	55	Australia, Canada, Switzerland	-54.11
Lifelong Learning	92	Switzerland, Finland, Ireland	-54.12
Access to Growth Opportunities	80	Denmark, United States, Netherlands	-48.45
LV Skills			
Employable Skills	48	Czech Republic, Slovakia, Germany	-41.15
GK Skills			
Higher Skills and Competencies	56	United States, Canada, Finland	-44.49
Talent Impact	79	Luxembourg, China, Singapore	-49.99

Egypt has a strong foundation of Formal Education, however Lifelong Learning (i.e. firm training, quality of management schools etc.) and Access to Growth Opportunities are weak spots, where it has low scores on the extent of staff training provided by domestic firms and voicing concern to officials. The country displays significant outperformance on Employable Skills, primarily due to its large secondary-educated workforce as well as its advanced state of cluster development. It also has strong Higher Skills and Competencies, perhaps once again a result of its strong educational foundation. Talent Impact is negatively affected by poor innovation output and sub-par new product entrepreneurial activity. Interestingly, despite this balance between high and medium skill aspects of talent competitiveness, sophisticated exports lags behind vocational skill-intensive exports.

LEBANON



Global GTCI Position

Lebanon is ranked 57th out of the 93 countries in the GTCI. The country displays a good balance between the Input and Output sides, but its real strength lies in its ability to grow talents. In contrast, it is not as successful when it comes to Labour and Vocational Skills, but has above-par Global Knowledge Skills.

RANK (out of 93)	**57**
Population (millions)	**4.47**
GDP per capita (PPP$)	**17,169**
GDP (US$ billions)	**44.35**
GTCI Score	**41.13**
GTCI Score (Income Group Average)	**40.84**

Income/Regional Group Comparison

Lebanon is classified as an Upper Middle Income economy. The regional peers ranked ahead of it are all High Income Oil Exporters. Lebanon is ranked 4th in the MTCI and outscores other Upper Middle and Lower Middle Income economies that constitute the index.

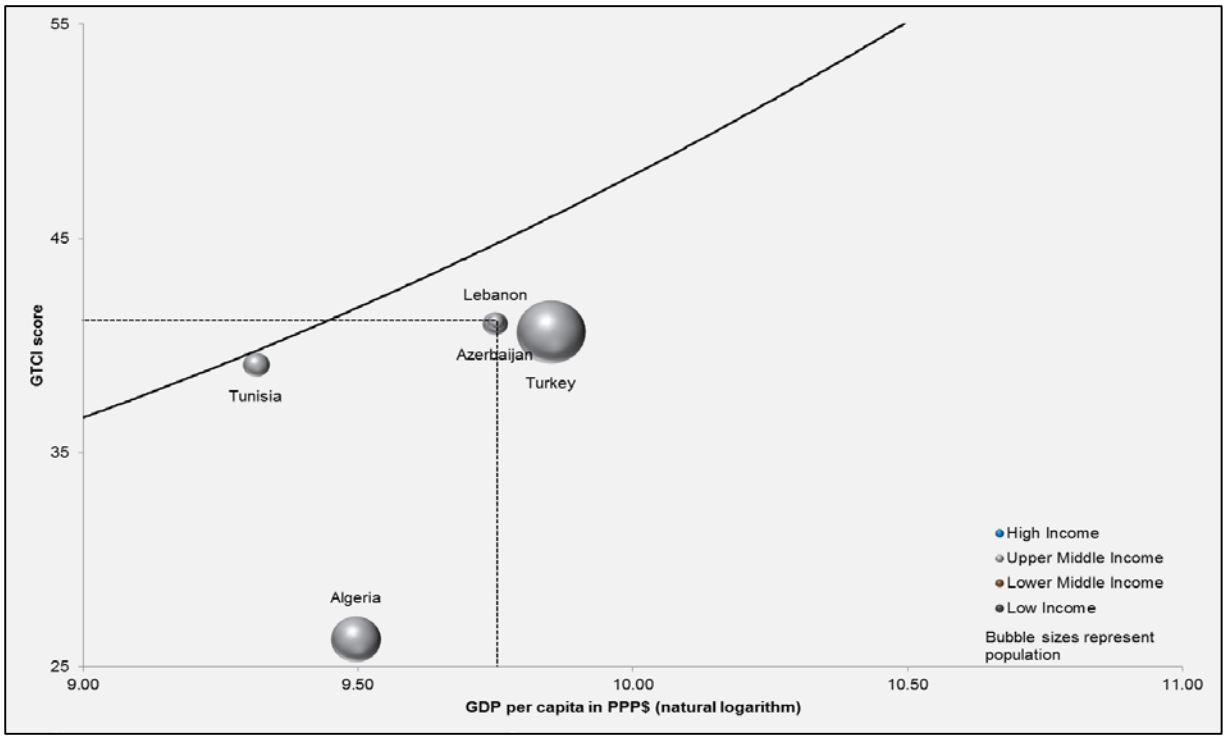
	Weakness	GTCI Rank	Strength
		57	
Input			56
Enablers	72		
Attract	74		
Grow			40
Retain			56
Output			54
LV Skills	*61*		
GK Skills			47

Comparison Group	Top 3 Group Scores	SCORE GAP: LBN score MINUS Top group score	Percent of countries in the group ranked below LBN
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-4.46	86
Europe	Switzerland, Luxembourg, Sweden	-30.33	12
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-15.57	54
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-29.59	31
Sub-Saharan Africa	South Africa, Botswana, Namibia	-1.11	83
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-12.07	56
Northern America	United States, Canada	-27.19	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-30.33	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-9.36	54
Lower Middle Income*	Armenia, Mongolia, Philippines	-2.35	85
Low Income	Cambodia, Uganda, Bangladesh	9.29	100

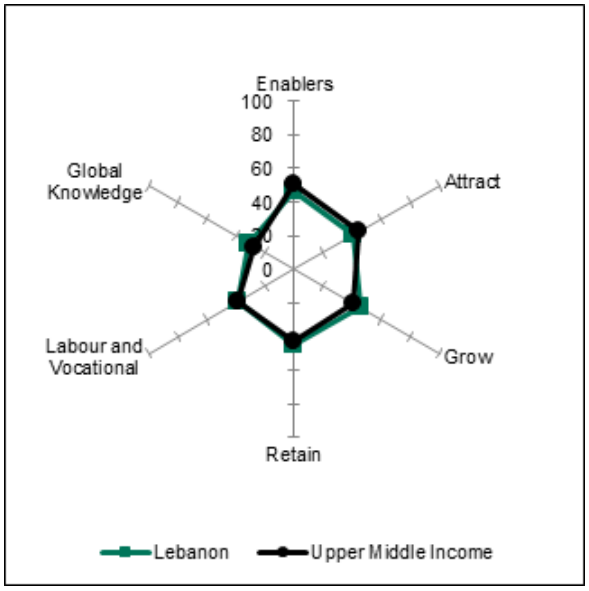
Note: Lebanon (LBN) belongs to the comparison groups marked with a *

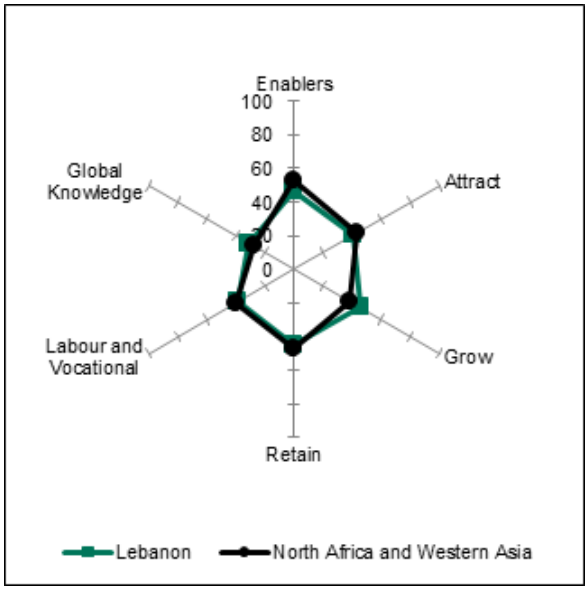
The Group of Competitors

Lebanon's group of competitors includes those Upper Middle Income countries located in its broader region (Azerbaijan, Turkey, Tunisia, Algeria). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: EGY pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: EGY pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-39.82	Turkey, Azerbaijan, Tunisia	-6.07
Attract	Singapore, Luxembourg, Qatar	-43.11	Azerbaijan, Tunisia, Turkey	-3.41
Grow	Netherlands, United States, Switzerland	-27.83	Turkey, Azerbaijan, Tunisia	5.52
Retain	Luxembourg, Switzerland, United States	-38.47	Azerbaijan, Turkey, Tunisia	-3.06
Output				
LV Skills	Czech Republic, Slovakia, Germany	-31.88	Azerbaijan, Tunisia, Turkey	-7.08
GK Skills	Luxembourg, Singapore, United States	-30.57	Tunisia, Turkey, Azerbaijan	-0.48

Lebanon outperforms its regional average on the Grow pillar as well as Global Knowledge Skills and closely tracks it across all other pillars, where the difference in scores is marginal. This trend carries on into the income group average comparison.

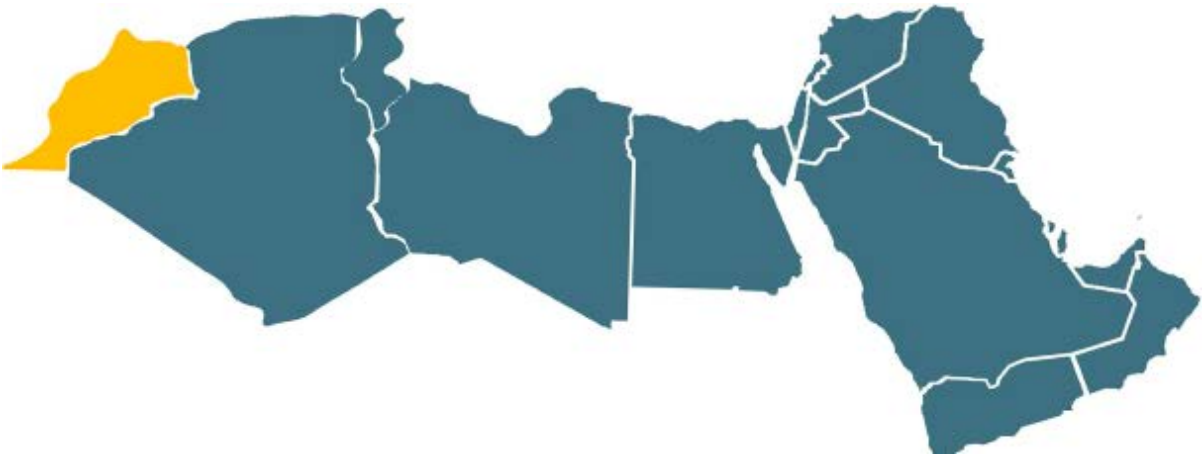
Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	LBN ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: LBN sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	34	Australia, Canada, Switzerland	-39.90
Lifelong Learning	30	Switzerland, Finland, Ireland	-19.76
Access to Growth Opportunities	82	Denmark, United States, Netherlands	-49.21
LV Skills			
Employable Skills	79	Czech Republic, Slovakia, Germany	-58.44
GK Skills			
Higher Skills and Competencies	39	United States, Canada, Finland	-38.14
Talent Impact	54	Luxembourg, China, Singapore	-39.40

Lebanon performs very well when it comes to Formal Education and Lifelong Learning (i.e. firm training, quality of management schools etc.). However, Access to Growth Opportunities is a weak spot, where it has low scores on the willingness to delegate authority and voicing concern to officials. The country displays below par performance across Employable Skills, primarily due to its small secondary-educated population as well as its poor state of cluster development. It has strong Higher Skills and Competencies, perhaps as a result of its strong focus on formal education. Talent Impact is reasonably high, with sophisticated exports and new product entrepreneurial activity acting as positive catalysts in this context.

MOROCCO



Global GTCI Position

Morocco is ranked 85th out of the 93 countries in the GTCI. The country's main strength is its ability to retain talents and to a lesser extent its favourable environment of enablers, its ability to attract talents and Labour and Vocational Skills. In contrast, it lags behind when it comes to growing talents as well as Global Knowledge Skills.

RANK (out of 93)	**85**
Population (millions)	**33.01**
GDP per capita (PPP$)	**7,200**
GDP (US$ billions)	**104.37**
GTCI Score	**31.60**
GTCI Score (Income Group Average)	**35.11**

Income/Regional Group Comparison

Morocco is classified as a Lower Middle Income economy. With the exception of Lebanon, Tunisia and Egypt, the regional peers ranked ahead of it are all oil exporters. Morocco is ranked 7th in the MTCI, ahead of Algeria and Yemen, which are Upper and Lower Middle Income economies, respectively.

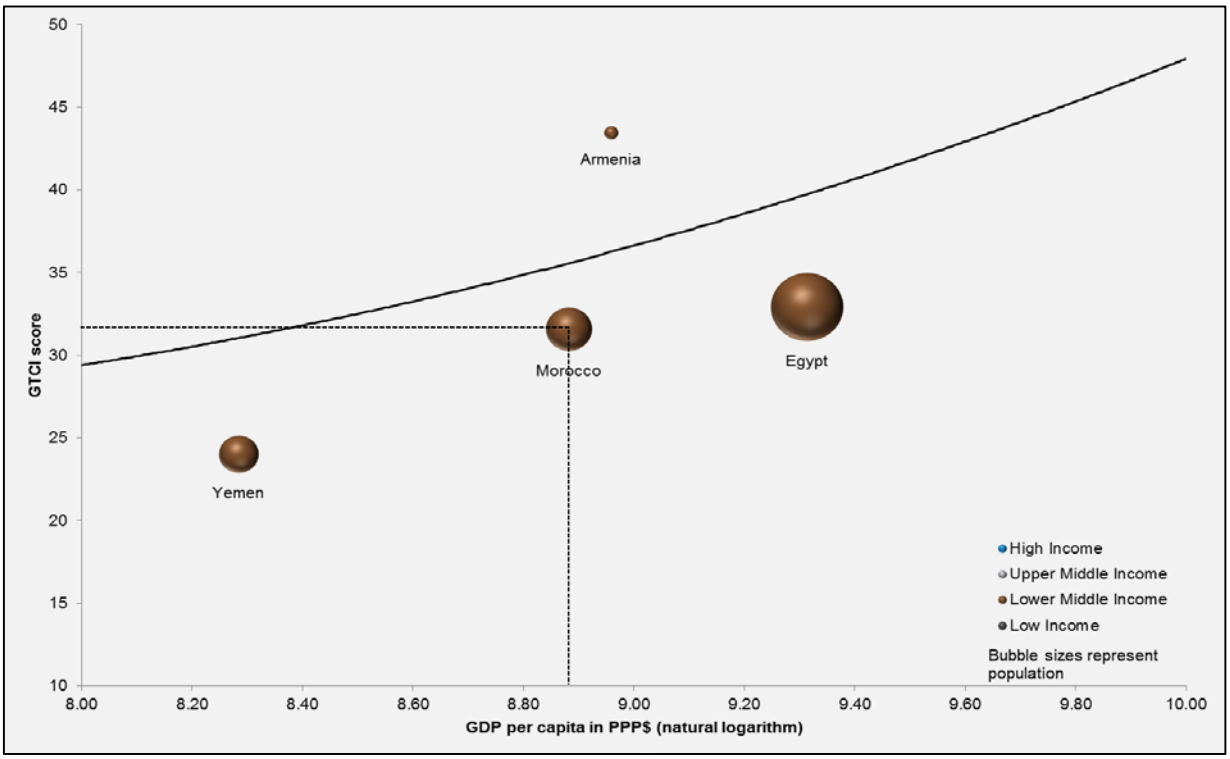
	Weakness	GTCI Rank	Strength
		85	
Input			80
Enablers			82
Attract			83
Grow	89		
Retain			74
Output	89		
LV Skills			82
GK Skills	88		

Comparison Group	Top 3 Group Scores	SCORE GAP: MAR score MINUS Top group score	Percent of countries in the group ranked below MAR
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-13.99	29
Europe	Switzerland, Luxembourg, Sweden	-39.86	0
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-25.10	15
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-39.12	8
Sub-Saharan Africa	South Africa, Botswana, Namibia	-10.64	50
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-21.60	0
Northern America	United States, Canada	-36.72	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-39.86	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-18.89	4
Lower Middle Income*	Armenia, Mongolia, Philippines	-11.88	20
Low Income	Cambodia, Uganda, Bangladesh	-0.24	75

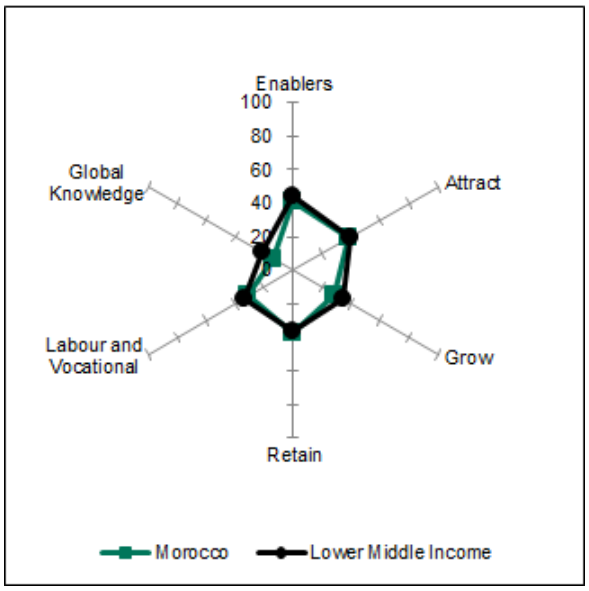
Note: Morocco (MAR) belongs to the comparison groups marked with a *

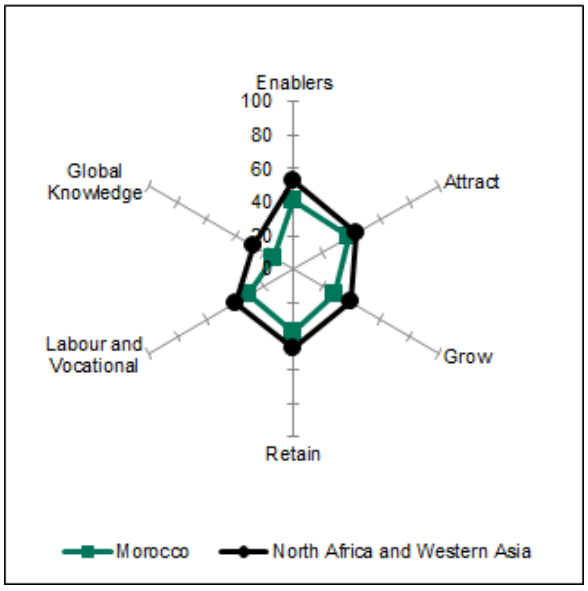
The Group of Competitors

Morocco's group of competitors includes those Lower Middle Income countries located in its broader region (Armenia, Morocco, Yemen). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: MAR pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: MAR pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-45.15	Armenia, Egypt, Yemen	-16.11
Attract	Singapore, Luxembourg, Qatar	-45.38	Armenia, Egypt, Yemen	-8.78
Grow	Netherlands, United States, Switzerland	-40.18	Armenia, Egypt, Yemen	-6.31
Retain	Luxembourg, Switzerland, United States	-46.79	Egypt, Armenia, Yemen	-13.14
Output				
LV Skills	Czech Republic, Slovakia, Germany	-39.39	Armenia, Egypt, Yemen	-14.04
GK Skills	Luxembourg, Singapore, United States	-47.84	Armenia, Yemen, Egypt	-13.73

Morocco underperforms its regional average across all pillars. The trend continues to within its income group, except that it scores marginally above average when it comes to retaining talent.

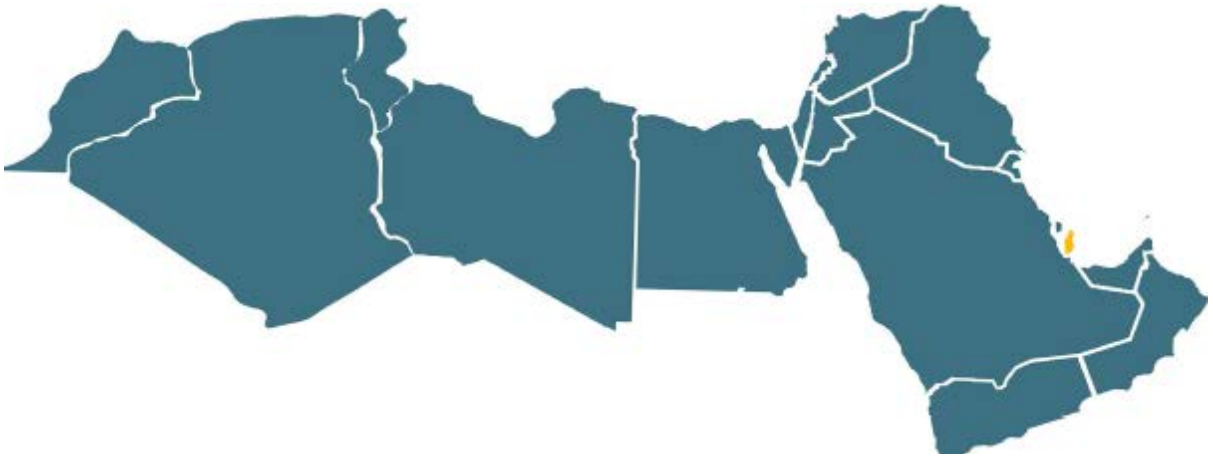
Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	MAR ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: MAR sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	84	Australia, Canada, Switzerland	-70.32
Lifelong Learning	68	Switzerland, Finland, Ireland	-36.43
Access to Growth Opportunities	85	Denmark, United States, Netherlands	-51.58
LV Skills			
Employable Skills	87	Czech Republic, Slovakia, Germany	-62.95
GK Skills			
Higher Skills and Competencies	87	United States, Canada, Finland	-59.35
Talent Impact	85	Luxembourg, China, Singapore	-52.73

Morocco has a strong foundation Lifelong Learning (i.e. firm training, quality of management schools etc.), however Formal Education and Access to Growth Opportunities are weak spots, where it has low scores on tertiary enrolment, the willingness to delegate authority and the voicing of concerns to officials. The country performs in line with its overall ranking on Employable Skills, Higher Skills and Competencies and Talent Impact, where its state of cluster development, vocational skill-intensive exports, new business density and sophisticated exports are highlights.

QATAR



Global GTCI Position

Qatar is ranked 25th out of the 93 countries in the GTCI. The country's strengths are on the Input side, which include its favourable environment of enablers and its ability to attract top-quality foreign talents. In contrast, it is not as successful when it comes to growing and retaining talents, nor on Labour and Vocational as well as Global Knowledge Skills.

RANK (out of 93)	**25**
Population (millions)	**2.17**
GDP per capita (PPP$)	**13,1757**
GDP (US$ billions)	**202.45**
GTCI Score	**55.80**
GTCI Score (Income Group Average)	**57.13**

Income/Regional Group Comparison

Qatar is classified as a High Income economy. The countries ranked ahead of it belong mostly to Northern America, Europe or East, Southeastern Asia and Oceania, with the exception of Chile, which belongs to Latin, Central America and Caribbean. Qatar is ranked 2nd in the MTCI, behind the UAE and ahead of Saudi Arabia.

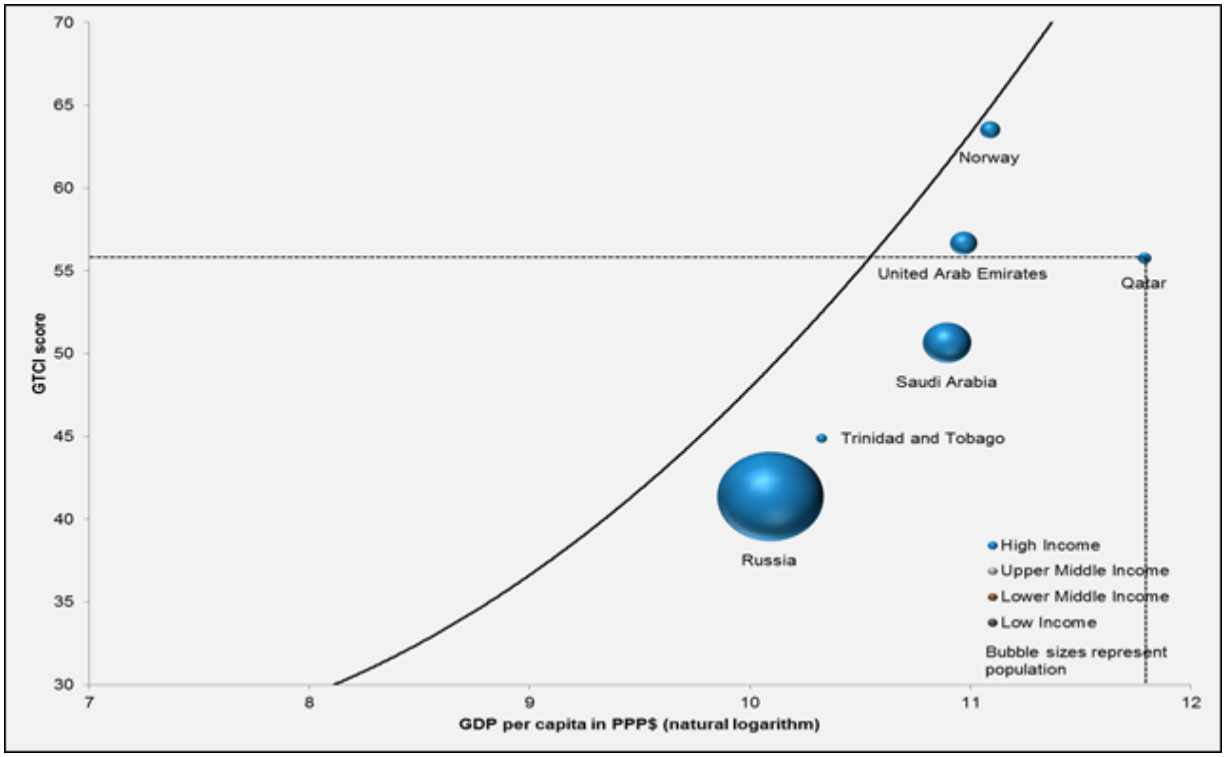
	Weakness	GTCI Rank	Strength
		25	
Input			20
Enablers			12
Attract			3
Grow		25	
Retain	41		
Output	44		
LV Skills	*30*		
GK Skills	*59*		

Comparison Group	Top 3 Group Scores	SCORE GAP: QAT score MINUS Top group score	Percent of countries in the group ranked below QAT
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	10.21	100
Europe	Switzerland, Luxembourg, Sweden	-15.66	53
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-0.90	77
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-14.92	69
Sub-Saharan Africa	South Africa, Botswana, Namibia	13.56	100
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	2.60	94
Northern America	United States, Canada	-12.52	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-15.66	39
Upper Middle Income	Hungary, Malaysia, Costa Rica	5.31	100
Lower Middle Income*	Armenia, Mongolia, Philippines	12.32	100
Low Income	Cambodia, Uganda, Bangladesh	23.96	100

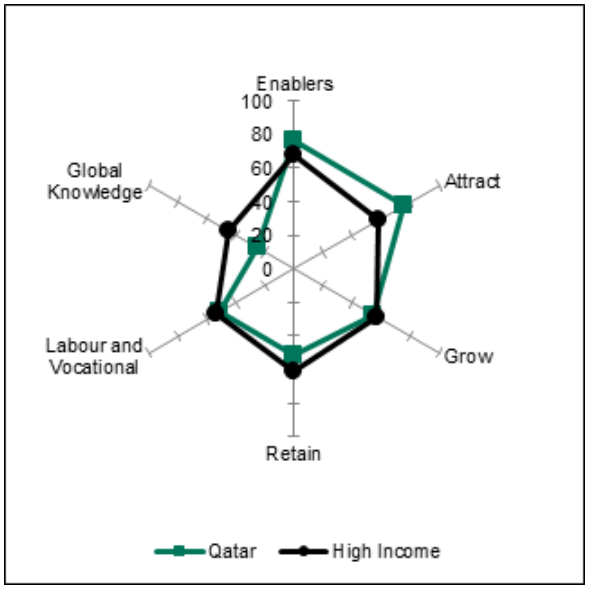
Note: Qatar (QAT) belongs to the comparison groups marked with a *

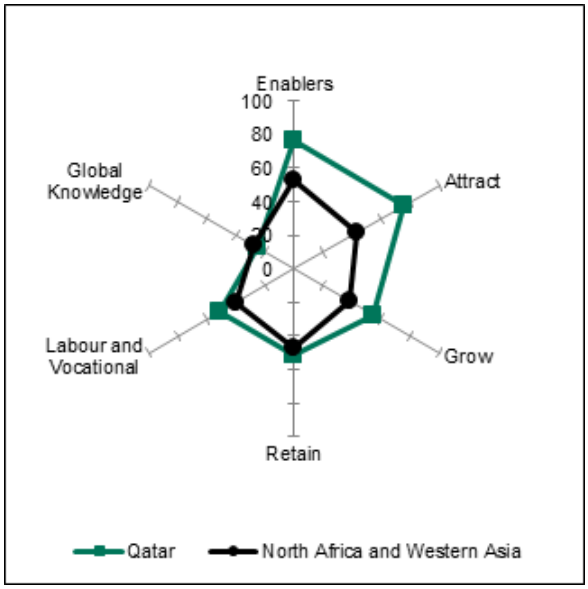
The Group of Competitors

Qatar's group of competitors includes those High Income countries located in its own region (Saudi Arabia, United Arab Emirates) and High Income Oil Exporters (Norway, Russia, Trinidad and Tobago). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: QAT pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: QAT pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-9.98	United Arab Emirates, Norway, Saudi Arabia	-0.74
Attract	Singapore, Luxembourg, Qatar	-7.63	United Arab Emirates, Norway, Trinidad and Tobago	3.00
Grow	Netherlands, United States, Switzerland	-18.67	Norway, United Arab Emirates, Saudi Arabia	-12.96
Retain	Luxembourg, Switzerland, United States	-32.38	Norway, Saudi Arabia, United Arab Emirates	-17.02
Output				
LV Skills	Czech Republic, Slovakia, Germany	-19.05	Norway, United Arab Emirates, Trinidad and Tobago	-2.89
GK Skills	Luxembourg, Singapore, United States	-35.94	Norway, Russia, Saudi Arabia	-20.91

Qatar markedly outperforms its regional average across all pillars, with the exception of the Retain pillar, where the difference in scores is marginal. It compares favourably against its income group average when it comes to providing an environment of enablers, and in its ability to attract talents. The most glaring deficiencies are evident when we consider the dimension of Global Knowledge Skills, where it lags behind its peers significantly.

Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	QAT ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: QAT sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	56	Australia, Canada, Switzerland	-54.45
Lifelong Learning	5	Switzerland, Finland, Ireland	-6.12
Access to Growth Opportunities	14	Denmark, United States, Netherlands	-20.79
LV Skills			
Employable Skills	61	Czech Republic, Slovakia, Germany	-46.66
GK Skills			
Higher Skills and Competencies	43	United States, Canada, Finland	-40.01
Talent Impact	71	Luxembourg, China, Singapore	-48.25

Qatar performs exceptionally well when it comes to Lifelong Learning (i.e. firm training, quality of management schools etc.) and Access to Growth Opportunities. However, Formal Education is an area that needs to be addressed. It shows subdued scores across Employable Skills as well as Higher Skills and Competencies, which reiterates the need for a strong foundation of education. It also has weak Talent Impact mostly as a result of very low sophisticated exports, which further highlights the need for economic diversification.

SAUDI ARABIA

Global GTCI Position

Saudi Arabia is ranked 32nd out of the 93 countries in the GTCI. All of the country's strengths are on the Input side, which consist of its favourable environment of enablers and its ability to retain talents. In contrast, it is not as successful when it comes to attracting and growing talents, nor on Labour and Vocational as well as Global Knowledge Skills.

RANK (out of 93)	**32**
Population (millions)	**28.83**
GDP per capita (PPP$)	**53,780**
GDP (US$ billions)	**745.27**
GTCI Score	**50.69**
GTCI Score (Income Group Average)	**57.13**

Income/Regional Group Comparison

Saudi Arabia is classified as a High Income economy. The countries ranked ahead of it belong mostly to Northern America, Europe or East, Southeastern Asia and Oceania, with the exception of Chile, which belongs to Latin, Central America and Caribbean. Saudi Arabia is ranked 3rd in the MTCI behind the United Arab Emirates and Qatar.

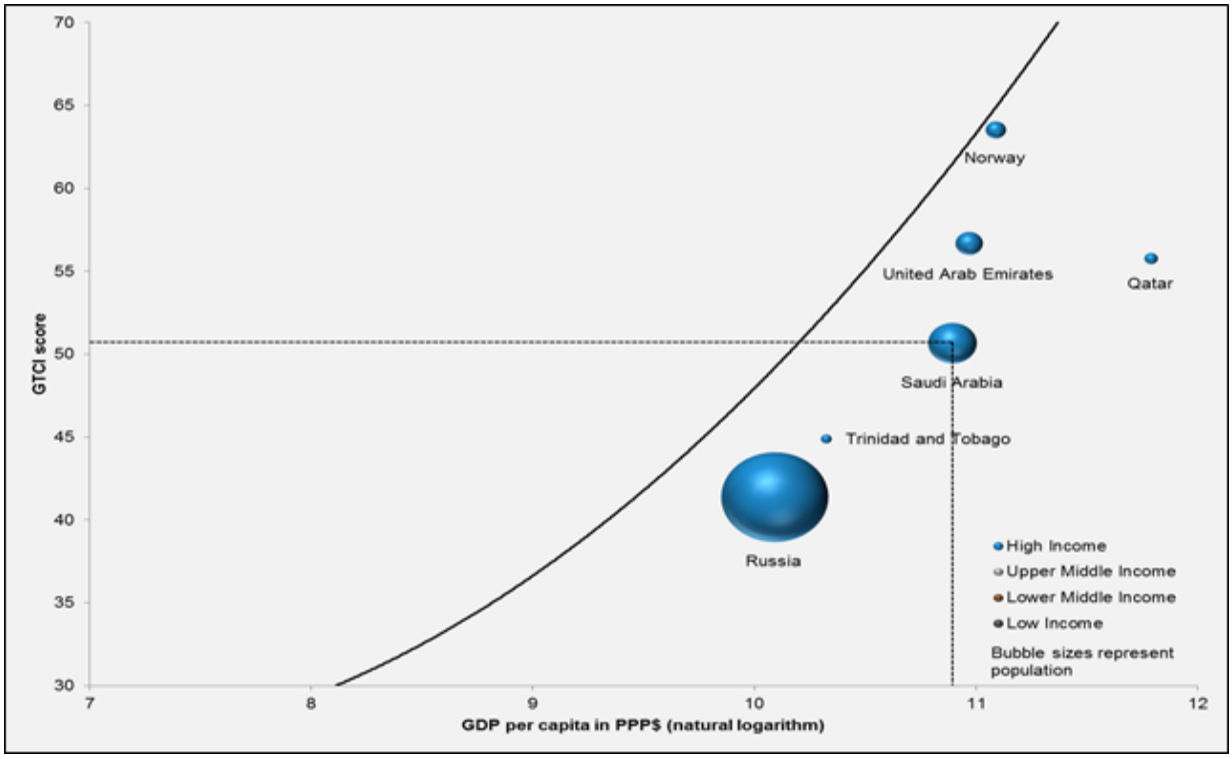
	Weakness	GTCI Rank	Strength
		32	
Input			31
Enablers			27
Attract	34		
Grow	42		
Retain			26
Output	36		
LV Skills	*43*		
GK Skills	*35*		

Comparison Group	Top 3 Group Scores	SCORE GAP: SAU score MINUS Top group score	Percent of countries in the group ranked below SAU
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	5.10	100
Europe	Switzerland, Luxembourg, Sweden	-20.77	41
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-6.01	69
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-20.03	62
Sub-Saharan Africa	South Africa, Botswana, Namibia	8.45	100
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-2.51	94
Northern America	United States, Canada	-17.63	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-20.77	22
Upper Middle Income	Hungary, Malaysia, Costa Rica	0.20	100
Lower Middle Income*	Armenia, Mongolia, Philippines	7.21	100
Low Income	Cambodia, Uganda, Bangladesh	18.85	100

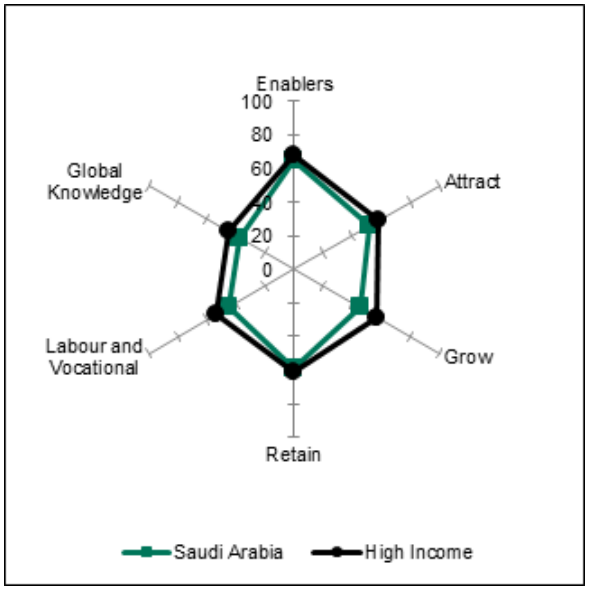
Note: Saudi Arabia (SAU) belongs to the comparison groups marked with a *

The Group of Competitors

Saudi Arabia's group of competitors includes those High Income countries located in its own region (United Arab Emirates, Qatar) and High Income Oil Exporters (Norway, Russia, Trinidad and Tobago). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars



Pillar	Top 3 Pillar Scores	SCORE GAP: SAU pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: SAU pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-21.10	United Arab Emirates, Norway, Saudi Arabia	-11.86
Attract	Singapore, Luxembourg, Qatar	-31.36	United Arab Emirates, Norway, Trinidad and Tobago	-23.73
Grow	Netherlands, United States, Switzerland	-27.90	Norway, United Arab Emirates, Saudi Arabia	-22.19
Retain	Luxembourg, Switzerland, United States	-24.53	Norway, Saudi Arabia, United Arab Emirates	-9.17
Output				
LV Skills	Czech Republic, Slovakia, Germany	-25.71	Norway, United Arab Emirates, Trinidad and Tobago	-9.55
GK Skills	Luxembourg, Singapore, United States	-23.72	Norway, Russia, Saudi Arabia	-8.69

Saudi Arabia markedly outperforms its regional average across all pillars, with the exception of Labour and Vocational Skills, where the difference in scores is marginal. It compares favourably against its income group average when it comes to providing an environment of enablers, and in its ability to attract and retain talents. The most glaring deficiencies are evident when we consider the dimensions of growing talents, as well as Labour and Vocational and Global Knowledge Skills.

Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	SAU ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: SAU sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	47	Australia, Canada, Switzerland	-49.40
Lifelong Learning	45	Switzerland, Finland, Ireland	-26.57
Access to Growth Opportunities	37	Denmark, United States, Netherlands	-33.08
LV Skills			
Employable Skills	50	Czech Republic, Slovakia, Germany	-42.08
GK Skills			
Higher Skills and Competencies	49	United States, Canada, Finland	-41.71
Talent Impact	18	Luxembourg, China, Singapore	-22.11

Saudi Arabia has clear weaknesses when it comes to Formal Education and Lifelong Learning (i.e. firm training, quality of management schools etc.), which might help explain the country's poor rankings on Employable Skills and Higher Skills and Competencies. It has good Talent Impact as a result of strong new product entrepreneurial activity and innovation output. That said, the country has very low sophisticated exports, which further highlights the need for economic diversification.

TUNISIA

Global GTCI Position

Tunisia is ranked 65th out of the 93 countries in the GTCI. The country's strengths are largely on the Output side, viz. its Labour and Vocational and Global Knowledge Skills. In contrast, it is not as successful in providing a favourable environment of enablers or attracting and growing talents. However, Tunisia outperforms its overall ranking when it comes to retaining talents.

RANK (out of 93)	**65**
Population (millions)	**10.89**
GDP per capita (PPP$)	**11,092**
GDP (US$ billions)	**47.13**
GTCI Score	**39.11**
GTCI Score (Income Group Average)	**40.84**

Income/Regional Group Comparison

Tunisia is classified as an Upper Middle Income economy. The regional peers ranked ahead of it are all High Income Oil Exporters, with the exception of Lebanon. Tunisia is ranked 5th in the MTCI, and outscores other North African economies that constitute the index.

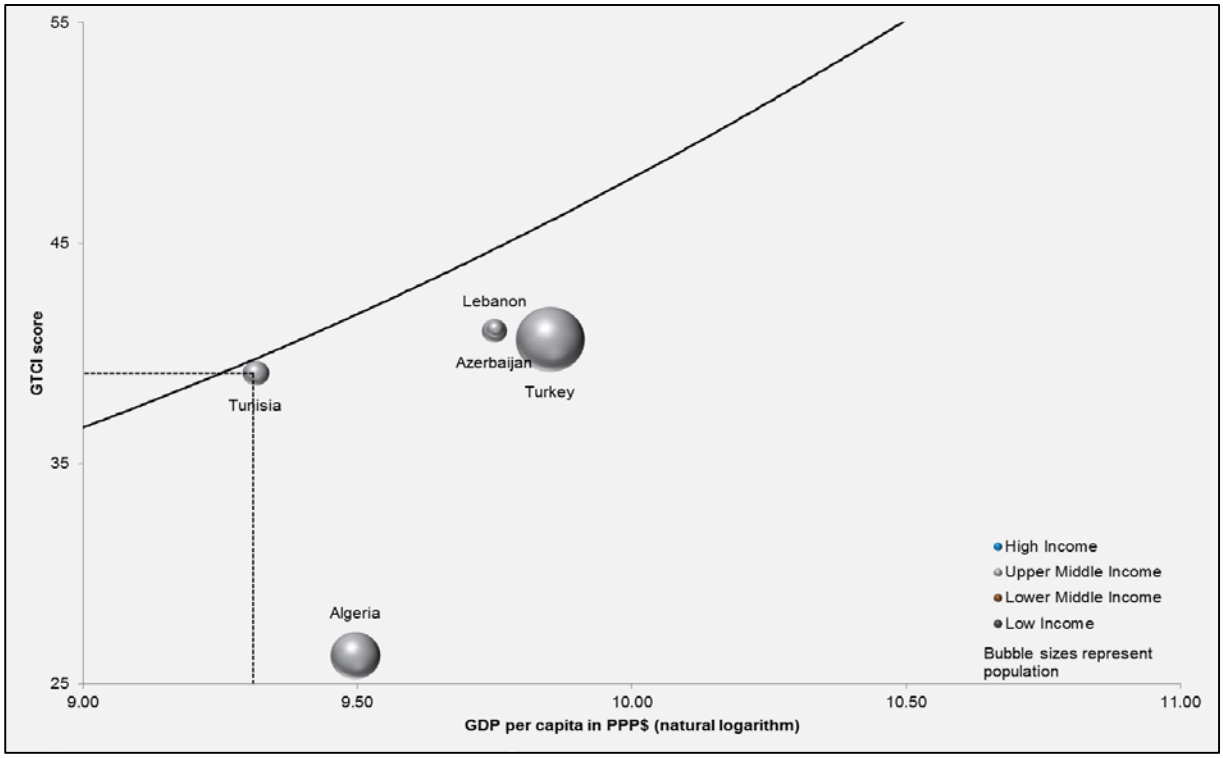
	Weakness	GTCI Rank	Strength
		65	
Input	72		
Enablers	79		
Attract	69		
Grow	78		
Retain			57
Output			51
LV Skills			54
GK Skills			46

Comparison Group	Top 3 Group Scores	SCORE GAP: TUN score MINUS Top group score	Percent of countries in the group ranked below TUN
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-6.48	86
Europe	Switzerland, Luxembourg, Sweden	-32.35	12
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-17.59	54
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-31.61	31
Sub-Saharan Africa	South Africa, Botswana, Namibia	-3.13	83
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-14.09	56
Northern America	United States, Canada	-29.21	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-32.35	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-11.38	29
Lower Middle Income*	Armenia, Mongolia, Philippines	-4.37	80
Low Income	Cambodia, Uganda, Bangladesh	7.27	100

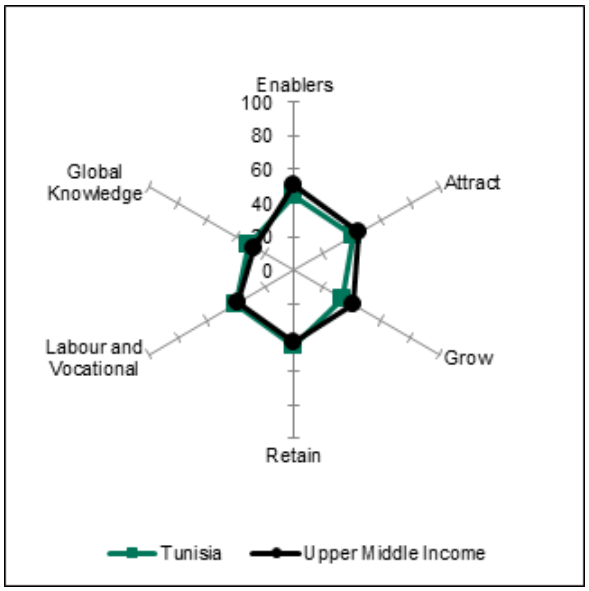
Note: Tunisia (TUN) belongs to the comparison groups marked with a *

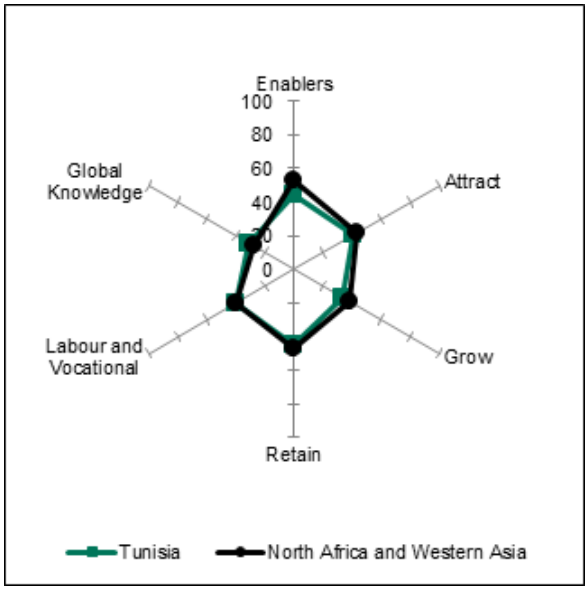
The Group of Competitors

Tunisia's group of competitors includes those Upper Middle Income countries located in its broader region (Azerbaijan, Turkey, Lebanon, Algeria). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: TUN pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: TUN pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-42.44	Turkey, Azerbaijan, Lebanon	-8.49
Attract	Singapore, Luxembourg, Qatar	-42.35	Azerbaijan, Lebanon, Turkey	-2.65
Grow	Netherlands, United States, Switzerland	-40.18	Lebanon, Turkey, Azerbaijan	-12.35
Retain	Luxembourg, Switzerland, United States	-38.48	Azerbaijan, Turkey, Lebanon	-3.07
Output				
LV Skills	Czech Republic, Slovakia, Germany	-30.46	Azerbaijan, Turkey, Lebanon	-5.66
GK Skills	Luxembourg, Singapore, United States	-30.09	Lebanon, Turkey, Azerbaijan	0.48

Tunisia outperforms its regional average on Global Knowledge Skills, and closely tracks it on Labour and Vocational Skills, where the difference in scores is marginal. This trend carries on into the income group average comparison. The country struggles to provide a favourable environment of enablers as well as when it comes to attracting and growing talents at both the regional and income group levels. While it is relatively successful in retaining talents at the income group level, this is not the case when we consider the North Africa and Western Asia region. This is due to the fact that other higher-ranked regional peers are High Income countries such as the United Arab Emirates, Qatar and Saudi Arabia which perform much better than Tunisia does on the Retain pillar.

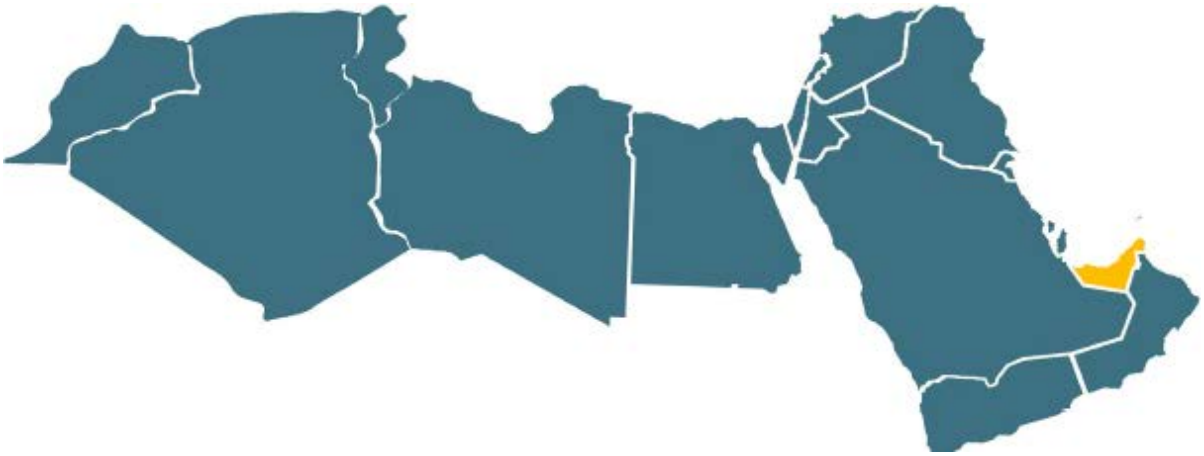
Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g. firm training) and Access to Growth Opportunities (e.g. access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g. technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	TUN ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: TUN sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	78	Australia, Canada, Switzerland	-64.09
Lifelong Learning	58	Switzerland, Finland, Ireland	-31.47
Access to Growth Opportunities	84	Denmark, United States, Netherlands	-50.33
LV Skills			
Employable Skills	58	Czech Republic, Slovakia, Germany	-46.55
GK Skills			
Higher Skills and Competencies	50	United States, Canada, Finland	-43.01
Talent Impact	44	Luxembourg, China, Singapore	-33.57

Tunisia performs well on the Output side of the index, with Labour and Vocational and Global Knowledge Skills pillars as well as their constituent sub-pillars outscoring the country's overall ranking. However, Formal Education and Access to Growth Opportunities are weak spots, where the country has low scores on the willingness to delegate authority and voicing concern to officials. The country displays below par performance across Employable Skills, primarily due to its small secondary-educated population in addition to its poor state of cluster development.

UNITED ARAB EMIRATES



Global GTCI Position

The United Arab Emirates is ranked 22nd out of the 93 countries in the GTCI. The country's strengths are on the Input side, which include its favourable environment of enablers and its ability to attract top-quality foreign talents. In contrast, it is not as successful when it comes to growing and retaining talents, nor on Labour and Vocational as well as Global Knowledge Skills.

RANK (out of 93)	**22**
Population (millions)	**9.35**
GDP per capita (PPP$)	**58,041**
GDP (US$ billions)	**383.80**
GTCI Score	**56.70**
GTCI Score (Income Group Average)	**57.13**

Income/Regional Group Comparison

The United Arab Emirates is classified as a High Income economy. The countries ranked ahead of it belong mostly to Northern America, Europe or East, Southeastern Asia and Oceania. The United Arab Emirates is ranked 1st in the MTCI.

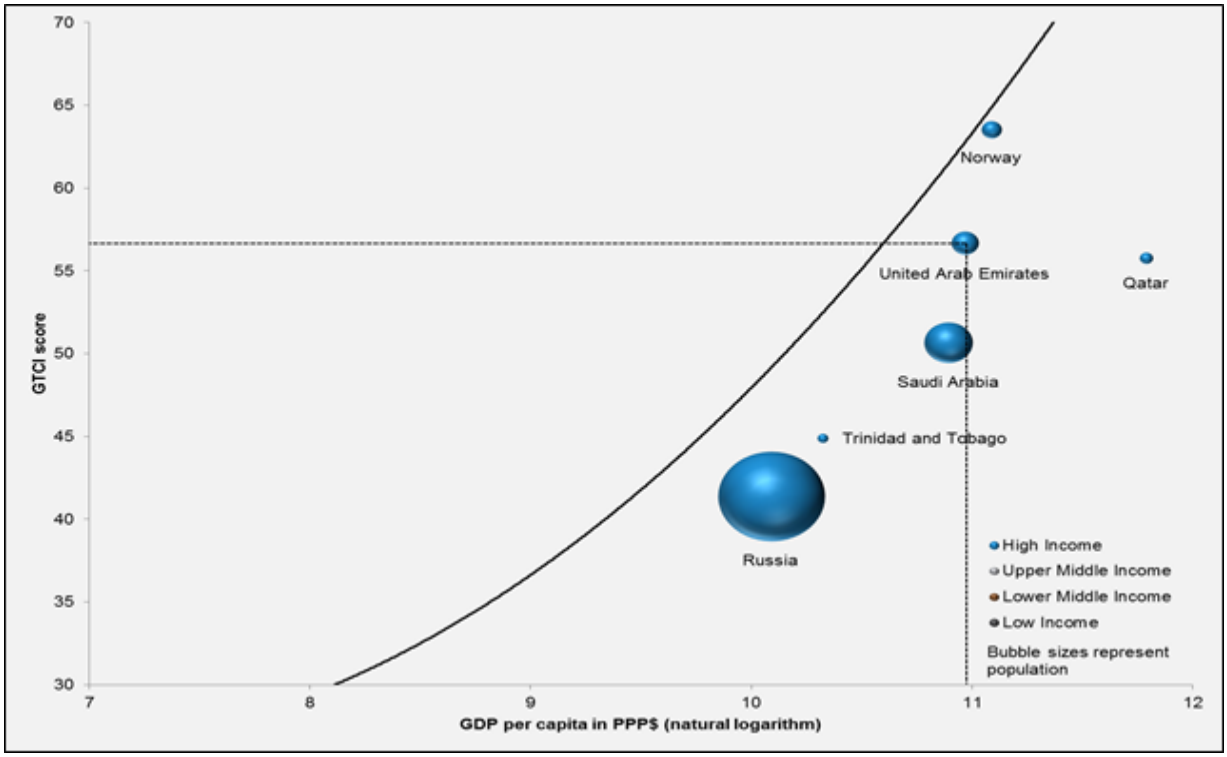
	Weakness	GTCI Rank	Strength
		22	
Input			17
Enablers			11
Attract			4
Grow	24		
Retain	32		
Output	40		
LV Skills	*31*		
GK Skills	*52*		

Comparison Group	Top 3 Group Scores	SCORE GAP: ARE score MINUS Top group score	Percent of countries in the group ranked below ARE
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	11.11	100
Europe	Switzerland, Luxembourg, Sweden	-14.76	59
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	0.00	85
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-14.02	69
Sub-Saharan Africa	South Africa, Botswana, Namibia	14.46	100
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	3.50	100
Northern America	United States, Canada	-11.62	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-14.76	46
Upper Middle Income	Hungary, Malaysia, Costa Rica	6.21	100
Lower Middle Income*	Armenia, Mongolia, Philippines	13.22	100
Low Income	Cambodia, Uganda, Bangladesh	24.86	100

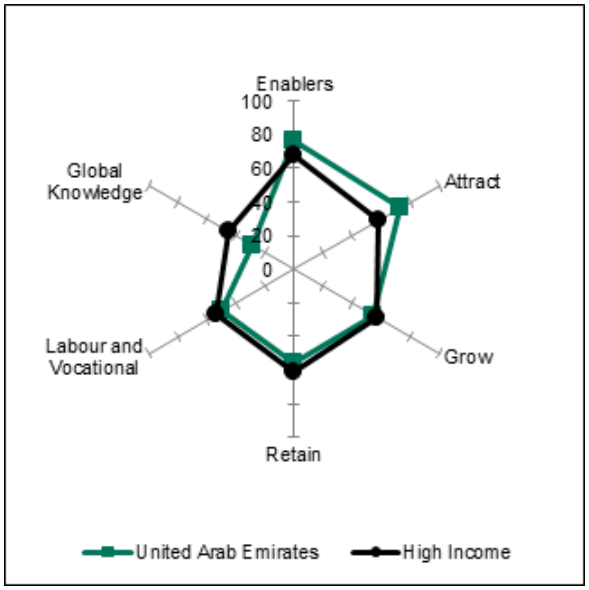
Note: The United Arab Emirates (ARE) belongs to the comparison groups marked with a *

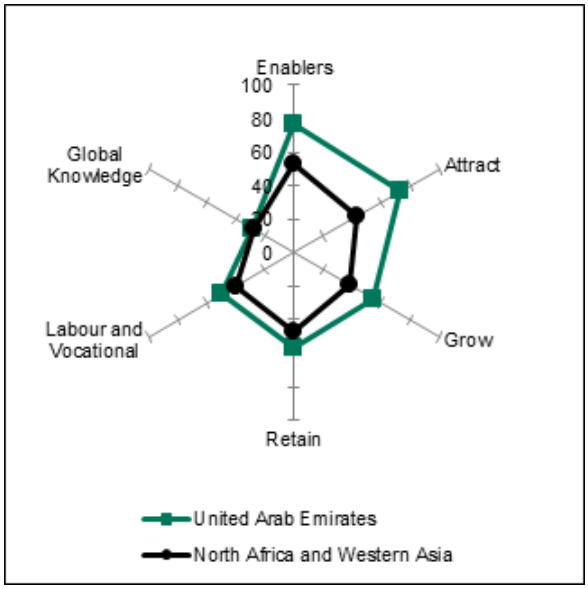
The Group of Competitors

The UAE's group of competitors includes those High Income countries located in its own region (Saudi Arabia, Qatar) and High Income Oil Exporters (Norway, Russia, Trinidad and Tobago). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: ARE pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: ARE pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-9.24	Qatar, Norway, Saudi Arabia	0.74
Attract	Singapore, Luxembourg, Qatar	-12.88	Qatar, Norway, Trinidad and Tobago	-5.25
Grow	Netherlands, United States, Switzerland	-18.55	Norway, Qatar, Saudi Arabia	-12.84
Retain	Luxembourg, Switzerland, United States	-27.56	Norway, Saudi Arabia, Trinidad and Tobago	-12.20
Output				
LV Skills	Czech Republic, Slovakia, Germany	-20.21	Norway, Qatar, Trinidad and Tobago	-4.05
GK Skills	Luxembourg, Singapore, United States	-32.02	Norway, Russia, Saudi Arabia	-16.99

The United Arab Emirates markedly outperforms its regional average across all pillars, with the exception of Global Knowledge Skills, where the difference in scores is marginal. It compares favourably against its income group average when it comes to providing an environment of enablers, and in its ability to attract talents. The most glaring deficiencies are evident when we consider the dimension of Global Knowledge Skills, where it lags behind its peers significantly.

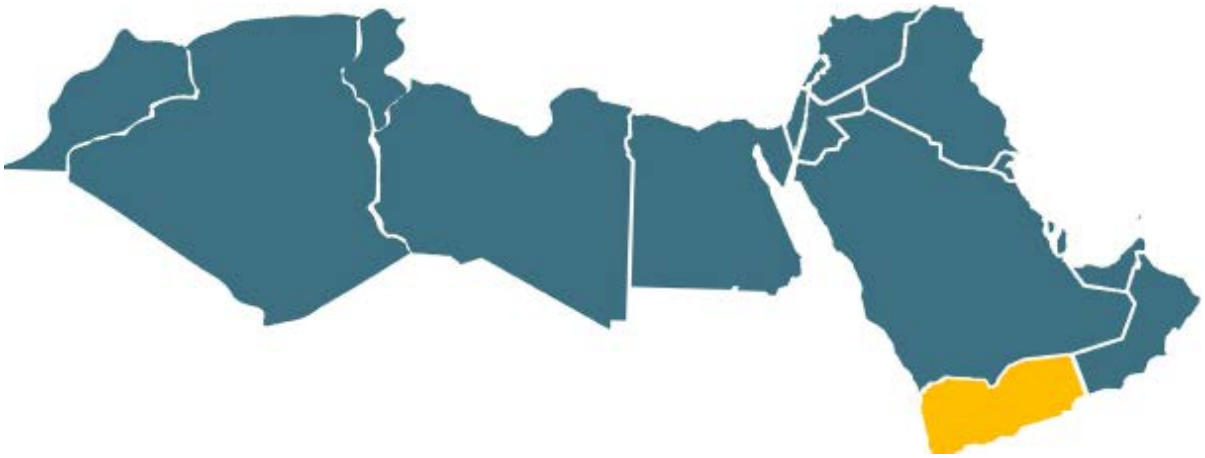
Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	ARE ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: ARE sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	32	Australia, Canada, Switzerland	-38.14
Lifelong Learning	18	Switzerland, Finland, Ireland	-13.48
Access to Growth Opportunities	28	Denmark, United States, Netherlands	-29.40
LV Skills			
Employable Skills	40	Czech Republic, Slovakia, Germany	-34.52
GK Skills			
Higher Skills and Competencies	38	United States, Canada, Finland	-37.44
Talent Impact	60	Luxembourg, China, Singapore	-42.99

The United Arab Emirates performs strongly when it comes to Lifelong Learning (i.e. firm training, quality of management schools etc.), but Formal Education and Access to Growth Opportunities can be further improved. It shows subdued scores across Employable Skills as well as Higher Skills and Competencies, reiterating how crucial a strong foundation of education is. It has very poor Talent Impact primarily due to low innovation output as well as new business density. The country also has very low sophisticated exports, which further highlights the need for economic diversification.

YEMEN



Global GTCI Position

Yemen is ranked 93rd out of the 93 countries in the GTCI. The country displays very little variation across the pillars on both the Input and Output sides of the model, with its real strength being its Global Knowledge Skills.

RANK (out of 93)	**93**
Population (millions)	**24.41**
GDP per capita (PPP$)	**3,958**
GDP (US$ billions)	**35.95**
GTCI Score	**24.03**
GTCI Score (Income Group Average)	**35.11**

Income/Regional Group Comparison

Yemen is classified as a Lower Middle Income economy as well as an oil exporter. The regional peers ranked ahead of it are all oil exporters, with the exception of Lebanon, Tunisia, Egypt and Morocco. Yemen is ranked 9th in the MTCI, and visibly underperforms other economies that constitute the index.

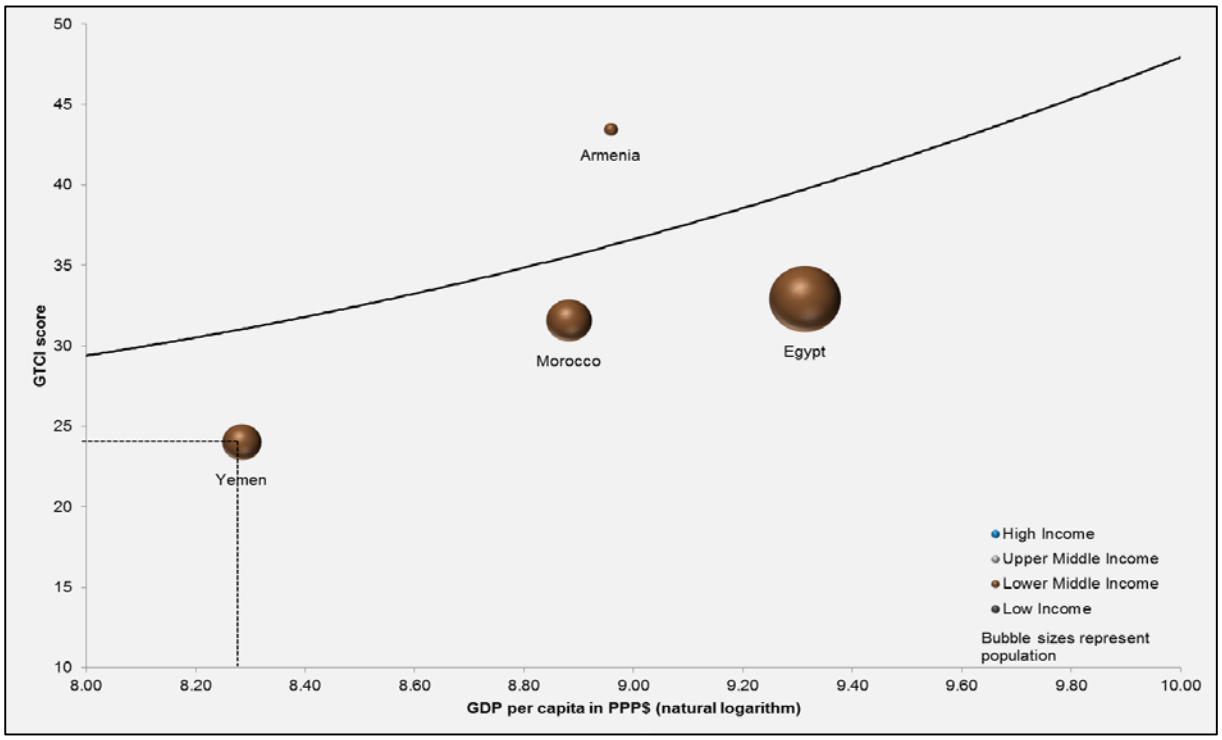
	Weakness	GTCI Rank	Strength
		93	
Input		93	
Enablers			89
Attract		93	
Grow			90
Retain			88
Output			87
LV Skills			92
GK Skills			66

Comparison Group	Top 3 Group Scores	SCORE GAP: YEM score MINUS Top group score	Percent of countries in the group ranked below YEM
By Region			
Central and Southern Asia	Kazakhstan, Kyrgyzstan, Sri Lanka	-21.56	0
Europe	Switzerland, Luxembourg, Sweden	-47.43	0
Northern Africa and Western Asia*	United Arab Emirates, Qatar, Saudi Arabia	-32.67	0
East, Southeastern Asia and Oceania	Singapore, Australia, New Zealand	-46.69	0
Sub-Saharan Africa	South Africa, Botswana, Namibia	-18.21	0
Latin, Central America and Caribbean	Chile, Costa Rica, Panama	-29.17	0
Northern America	United States, Canada	-44.29	0
By Income Group			
High Income	Switzerland, Singapore, Luxembourg	-47.43	0
Upper Middle Income	Hungary, Malaysia, Costa Rica	-26.46	0
Lower Middle Income*	Armenia, Mongolia, Philippines	-19.45	0
Low Income	Cambodia, Uganda, Bangladesh	-7.81	0

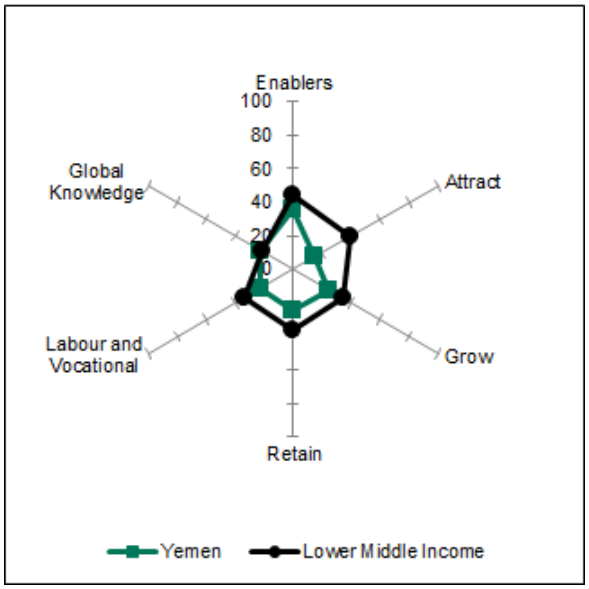
Note: Yemen (YEM) belongs to the comparison groups marked with a *

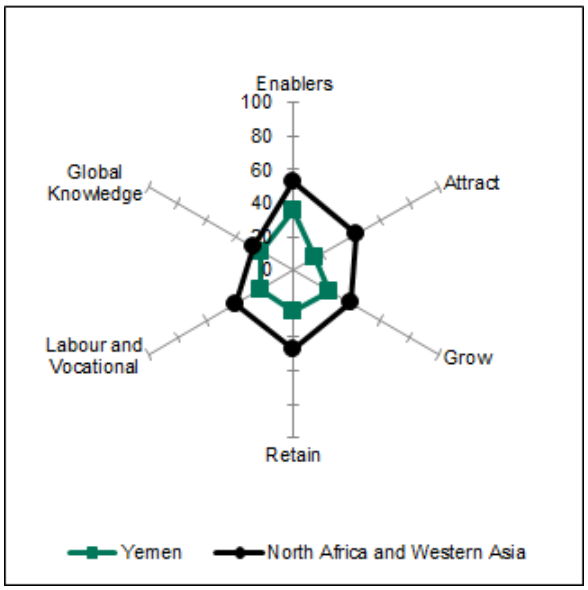
The Group of Competitors

Yemen's group of competitors includes those Lower Middle Income countries located in its broader region (Armenia, Morocco, Egypt). The below figure compares their GTCI score against their GDP per capita and population.



Performance across Pillars





Pillar	Top 3 Pillar Scores	SCORE GAP: YEM pillar score MINUS Top pillar score	Top 3 Competitor Scores	SCORE GAP: YEM pillar score MINUS Top competitor score
Input				
Enablers	Singapore, Switzerland, Denmark	-50.90	Armenia, Morocco, Egypt	-5.75
Attract	Singapore, Luxembourg, Qatar	-68.48	Armenia, Morocco, Egypt	-31.88
Grow	Netherlands, United States, Switzerland	-48.79	Armenia, Egypt, Morocco	-10.78
Retain	Luxembourg, Switzerland, United States	-59.50	Egypt, Armenia, Morocco	-25.85
Output				
LV Skills	Czech Republic, Slovakia, Germany	-47.82	Armenia, Egypt, Morocco	-22.47
GK Skills	Luxembourg, Singapore, United States	-38.80	Armenia, Egypt, Morocco	-4.69

Yemen underperforms its regional average across all pillars. The trend continues to within its income group, except that it marginally outscores the average on Global Knowledge Skills.

Education, Learning and Skills

Talent competitiveness involves two core dimensions for each country: a) the quality in developing talent; and b) the extent to which developed talent creates an effective pool of skills that enhances productive activities. For the former, the pillar Grow measures the quality of 3 components: Formal Education, Lifelong Learning (e.g., firm training) and Access to Growth Opportunities (e.g., access to decision-making, networking etc.). Success on these components is measured by the final pool of skills available in the country (e.g., technical professions, knowledge workers etc.) and by how this pool of people enhances productivity and innovation.

Sub-pillar	YEM ranking in each sub-pillar	Top 3 Sub-pillar Scores	SCORE GAP: YEM sub-pillar score MINUS Top sub-pillar score
Grow			
Formal Education	88	Australia, Canada, Switzerland	-71.91
Lifelong Learning	93	Switzerland, Finland, Ireland	-56.39
Access to Growth Opportunities	64	Denmark, United States, Netherlands	-43.44
LV Skills			
Employable Skills	86	Czech Republic, Slovakia, Germany	-62.68
GK Skills			
Higher Skills and Competencies	79	United States, Canada, Finland	-55.16
Talent Impact	53	Luxembourg, China, Singapore	-38.82

Yemen shows weakness across Formal Education and Lifelong Learning (i.e. firm training, quality of management schools etc.). However, Access to Growth Opportunities is a highlight , where it has robust scores on the willingness to delegate authority and the voicing of concerns to officials. The country performs in line with its overall ranking on Employable Skills as well as Higher Skills and Competencies, but Talent Impact is a standout performer, primarily due to its exceptionally strong new product entrepreneurial activity. That said, it lags behind on other aspects, including its poor innovation output and very low sophisticated and vocational skill-intensive exports.

Appendix B: GTCI 2014 MENA Indicator Scores[iii]

	Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
Var	**GTCI2014 Total Score**	**56.70**	**55.80**	**50.69**	**57.13**	**41.13**	**39.11**	**26.28**	**40.84**	**32.93**	**31.60**	**24.03**	**35.11**
	Input	**65.28**	**64.61**	**55.55**	**61.21**	**44.47**	**40.96**	**30.43**	**44.75**	**34.42**	**36.37**	**24.86**	**38.76**
1.1	**Enablers**	**77.07**	**76.33**	**65.21**	**68.15**	**46.49**	**44.07**	**30.52**	**50.53**	**38.48**	**41.16**	**35.41**	**44.46**
1.1	**Regulatory Landscape**	**79.33**	**81.34**	**53.93**	**71.37**	**30.47**	**42.20**	**29.08**	**48.43**	**35.37**	**49.27**	**14.64**	**42.18**
1.1.1	Government Effectiveness	69.16	63.64	37.29	71.49	26.77	36.12	20.71	34.85	14.52	35.27	0.00	23.08
1.1.2	Business-Government Relations	81.60	84.99	69.99	60.66	39.34	47.30	39.68	50.95	36.00	60.29	37.79	49.60
1.1.3	Political Stability	87.24	95.37	54.49	83.38	25.32	47.90	32.84	56.74	29.41	54.42	6.15	49.83
1.1.4	Starting a Foreign Business	n/a	n/a	n/a	57.50	n/a	37.50	23.08	56.82	61.54	47.12	n/a	51.04
1.2	**Market Landscape**	**66.39**	**59.37**	**61.39**	**62.46**	**53.94**	**40.37**	**18.37**	**41.75**	**27.08**	**36.42**	**31.02**	**33.74**
1.2.1	Intensity of Local Competition	78.49	79.33	78.09	73.30	75.62	64.42	42.72	62.21	51.08	68.67	55.96	62.40
1.2.2	Venture Capital Deals	n/a	0.50	n/a	29.00	n/a	2.03	0.00	2.36	0.44	0.71	n/a	3.28
1.2.3	Firm-level Technology Absorption	84.63	81.77	79.68	73.63	58.22	61.53	36.13	60.32	53.40	56.56	51.25	57.05
1.2.4	R&D Expenditure	10.06	n/a	1.12	41.53	n/a	24.50	0.73	12.44	9.08	16.04	n/a	5.51
1.2.5	ICT Access	78.26	75.44	70.87	79.53	61.21	33.15	28.46	44.82	36.51	42.82	8.19	29.57
1.2.6	Ease of Doing Business	80.50	59.80	77.20	72.08	20.70	56.60	2.20	40.80	12.00	33.70	8.70	26.30
1.3	**Business Landscape**	**85.49**	**88.28**	**80.31**	**70.63**	**55.05**	**49.62**	**44.12**	**61.41**	**53.00**	**37.80**	**60.57**	**57.46**
1.3.1	Difficulty of Hiring	100.00	100.00	100.00	73.76	55.67	83.33	55.67	67.90	89.00	0.00	89.00	63.63
1.3.2	Difficulty of Redundancy	100.00	100.00	100.00	79.76	70.00	20.00	60.00	73.21	40.00	50.00	70.00	63.50
1.3.3	Labour-Employer Cooperation	70.74	76.27	58.75	61.18	52.77	47.20	39.21	52.45	47.47	51.70	52.67	54.63
1.3.4	Reliance on Professional Management	71.21	76.86	62.51	67.83	41.77	47.94	21.59	52.07	35.51	49.52	30.63	48.07
2	**Attract**	**73.03**	**76.03**	**52.30**	**58.30**	**40.55**	**41.31**	**27.57**	**44.84**	**19.51**	**38.28**	**15.18**	**40.05**
2.1	**External Openness**	**76.07**	**73.46**	**58.05**	**46.86**	**40.35**	**32.31**	**18.23**	**34.93**	**21.77**	**35.60**	**18.01**	**31.32**
2.1.1	FDI Inflow	23.41	6.13	17.69	27.73	67.06	33.61	9.75	29.74	12.44	24.61	11.99	31.28
2.1.2	FDI and Technology Transfer	81.47	80.21	74.92	64.76	43.78	60.46	43.82	59.50	53.10	62.31	41.29	54.91
2.1.3	Prevalence of Foreign Ownership	75.45	61.87	53.55	67.42	47.46	60.78	36.95	57.49	44.11	70.14	28.79	54.30
2.1.4	Male Adult Migrants	100.00	100.00	94.00	34.67	38.64	0.69	1.71	11.15	0.84	0.26	4.02	6.35
2.1.5	Female Adult Migrants	100.00	100.00	41.04	33.04	33.82	0.62	1.39	9.73	0.57	0.21	2.48	6.13
2.1.6	Brain Gain	n/a	83.17	64.50	48.73	23.67	30.33	16.00	37.40	19.67	48.00	19.50	32.42
2.1.7	Brain Drain	n/a	82.83	60.67	50.35	28.00	39.67	18.00	39.49	21.67	43.67	18.00	33.84
2.2	**Internal Openness**	**69.99**	**78.60**	**46.54**	**69.74**	**40.76**	**50.32**	**36.90**	**54.75**	**17.24**	**40.97**	**12.34**	**48.78**
2.2.1	Tolerance to Minorities	66.23	n/a	28.77	74.33	28.62	26.08	20.84	61.70	8.78	56.45	0.00	58.29
2.2.2	Tolerance to Immigrants	92.41	n/a	73.25	71.42	48.76	61.84	44.64	54.22	7.11	41.67	9.41	44.68
2.2.3	Female Graduates	79.16	73.43	53.94	70.08	62.64	61.67	83.47	66.41	n/a	38.91	1.60	53.82
2.2.4	Female-to-Male Earnings Ratio	30.95	79.76	3.57	63.91	13.10	n/a	0.00	41.71	11.90	14.29	13.10	39.94
2.2.5	Social Mobility	81.19	82.60	73.18	69.50	50.69	51.69	35.56	50.35	41.17	53.52	37.60	48.83

[iii] Lanvin, INSEAD (2014); PwC analysis

	Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
3	**Grow**	**54.78**	**54.66**	**45.43**	**56.92**	**45.50**	**33.15**	**22.51**	**40.38**	**29.56**	**29.01**	**24.54**	**34.00**
3.1	**Formal Education**	**40.64**	**24.33**	**29.38**	**50.62**	**38.88**	**14.69**	**11.99**	**25.41**	**24.67**	**8.46**	**6.87**	**16.28**
3.1.1	Vocational Enrolment	2.30	1.39	7.36	46.84	29.99	28.69	17.12	27.87	36.10	12.50	1.50	19.21
3.1.2	Tertiary Enrolment	n/a	8.33	48.44	65.37	43.61	32.17	28.31	40.23	25.51	12.48	6.41	26.46
3.1.3	International Student Inflow	100.00	100.00	17.76	37.09	58.94	2.45	2.53	12.04	8.52	8.87	19.59	7.14
3.1.4	Reading, Math and Science Scores	31.19	3.49	n/a	56.06	n/a	10.14	n/a	25.99	n/a	n/a	n/a	35.35
3.1.5	University Ranking	29.09	8.43	43.95	47.40	22.99	0.00	0.00	21.34	28.55	0.00	0.00	9.13
3.2	**Lifelong Learning**	**67.07**	**74.43**	**53.98**	**61.88**	**60.79**	**49.08**	**28.17**	**50.31**	**26.43**	**44.12**	**24.16**	**42.69**
3.2.1	Quality of Management Schools	68.12	77.73	55.67	65.61	73.43	55.17	33.33	52.89	21.58	59.94	30.25	46.20
3.2.2	Extent of Staff Training	66.01	71.13	52.30	58.41	44.82	42.99	34.06	48.82	34.68	45.39	38.48	46.35
3.2.3	Firms Offering Formal Training	n/a	n/a	n/a	53.79	64.12	n/a	17.14	49.57	23.03	27.04	3.75	35.54
3.3	**Access to Growth Opportunities**	**56.62**	**65.23**	**52.94**	**58.27**	**36.81**	**35.69**	**27.36**	**45.43**	**37.57**	**34.44**	**42.58**	**43.02**
3.3.1	Use of Virtual Social Networks	89.18	88.23	84.52	84.54	77.76	83.34	68.46	75.83	81.85	73.97	60.58	70.98
3.3.2	Number of Linkedin Users	42.59	33.02	19.05	42.62	28.70	15.95	8.24	17.66	5.91	10.42	n/a	6.46
3.3.3	Willingness to Delegate Authority	63.10	74.44	60.36	57.88	37.59	39.68	27.18	44.64	50.95	39.36	46.54	43.45
3.3.4	Voicing Concern to Officials	31.60	n/a	47.84	45.15	3.22	3.79	5.56	36.00	11.58	14.01	20.62	34.84
4	**Retain**	**56.24**	**51.42**	**59.27**	**61.45**	**45.33**	**45.32**	**41.11**	**43.25**	**50.15**	**37.01**	**24.30**	**36.53**
4.1	**Sustainability**	**36.57**	**34.77**	**53.80**	**51.73**	**28.35**	**37.62**	**33.78**	**38.71**	**39.38**	**33.06**	**20.07**	**31.62**
4.1.1	Pension System	n/a	2.83	n/a	83.65	8.21	65.32	74.53	41.90	54.87	28.78	10.04	27.99
4.1.2	Extent and Effect of Taxation	n/a	89.29	65.80	43.93	48.49	44.52	38.17	42.64	30.44	49.90	30.10	41.40
4.1.3	Pay Level - Head of Organization	32.64	25.12	41.93	34.11	n/a	23.47	14.48	37.33	33.92	26.61	n/a	22.52
4.1.4	Pay Level - Head of Information Technology	40.50	21.84	53.67	38.98	n/a	17.16	7.93	27.82	38.28	26.94	n/a	22.96
4.2	**Lifestyle**	**75.92**	**68.08**	**64.73**	**71.16**	**62.32**	**53.03**	**48.45**	**47.79**	**60.92**	**40.96**	**28.53**	**41.45**
4.2.1	Environmental Performance	76.22	60.30	66.15	75.25	39.54	53.79	39.43	45.05	57.20	42.35	7.33	31.46
4.2.2	Safety at Night	100.00	n/a	78.73	70.07	54.89	51.43	41.57	40.19	47.11	47.62	59.29	50.85
4.2.3	Female Part-time Workers	n/a	n/a	n/a	64.64	n/a	n/a	n/a	35.03	n/a	n/a	n/a	36.18
4.2.4	Physician Density	30.34	43.93	14.04	49.38	56.81	18.69	18.45	28.45	45.13	8.80	1.84	22.41
4.2.5	Sanitation	97.11	100.00	100.00	97.18	98.03	88.21	94.34	82.55	94.22	65.09	45.66	62.38
	Output	**39.56**	**38.18**	**40.96**	**48.98**	**34.44**	**35.39**	**17.98**	**33.02**	**29.95**	**22.06**	**22.36**	**27.80**
5	**Labour and Vocational**	**49.83**	**50.99**	**44.33**	**53.04**	**38.16**	**39.58**	**22.25**	**39.01**	**37.65**	**30.65**	**22.22**	**34.10**
5.1	**Employable Skills**	**51.82**	**39.68**	**44.26**	**58.28**	**27.90**	**39.79**	**24.52**	**41.87**	**45.19**	**23.39**	**23.66**	**34.70**
5.1.1	Secondary-educated Workforce	28.64	n/a	28.01	56.79	12.05	42.88	17.21	44.49	41.78	1.72	17.06	34.57
5.1.2	Secondary-educated Population	35.26	21.88	33.35	52.64	17.36	31.64	2.13	39.41	n/a	n/a	n/a	33.25
5.1.3	Technicians and Associate Professionals	69.15	27.86	54.23	68.17	45.27	n/a	42.29	39.74	42.29	18.91	n/a	25.87
5.1.4	State of Cluster Development	74.23	69.29	61.43	56.36	36.93	44.87	36.45	45.06	51.49	49.54	30.26	43.59
5.2	**Labour Productivity**	**47.85**	**62.30**	**44.41**	**47.80**	**48.42**	**39.37**	**19.98**	**36.16**	**30.11**	**37.92**	**20.78**	**33.51**
5.2.1	Labour Productivity per Employee	74.69	100.00	57.74	46.73	n/a	14.83	15.09	16.91	10.61	7.30	4.86	6.71
5.2.2	Relationship of Pay to Productivity	66.49	70.29	58.68	52.63	51.67	41.79	30.29	47.22	35.47	49.26	44.10	50.59
5.2.3	Vocational Skill-intensive Exports	2.37	16.62	16.81	44.05	45.17	61.49	14.55	40.99	44.25	57.20	13.39	36.81

	Countries	UAE	Qatar	Saudi Arabia	HI Countries	Lebanon	Tunisia	Algeria	UMI Countries	Egypt	Morocco	Yemen	LMI Countries
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
6	**Global Knowledge**	**29.28**	**25.36**	**37.58**	**44.91**	**30.73**	**31.21**	**13.70**	**27.02**	**22.26**	**13.46**	**22.50**	**21.49**
6.1	**Higher Skills and Competencies**	**34.14**	**31.57**	**29.87**	**49.68**	**33.44**	**28.57**	**16.74**	**25.04**	**27.09**	**12.23**	**16.42**	**20.44**
6.1.1	Tertiary-educated Workforce	23.74	n/a	30.64	49.57	36.53	28.45	21.38	31.62	28.11	11.28	9.76	21.97
6.1.2	Tertiary-educated Population	29.87	34.75	34.91	46.81	25.50	20.77	n/a	25.46	n/a	n/a	n/a	21.90
6.1.3	Professionals	42.38	27.74	30.49	51.92	30.79	n/a	11.89	26.44	39.02	4.88	40.55	21.58
6.1.4	Researchers	n/a	n/a	n/a	42.31	n/a	19.99	1.62	8.30	5.56	9.31	n/a	3.22
6.1.5	Legislators, Senior Officials and Managers	41.81	16.95	19.77	39.62	66.67	n/a	32.77	24.95	45.76	3.39	14.12	26.17
6.1.6	Quality of Scientific Research Institutions	63.05	76.53	57.58	66.69	27.44	39.11	25.23	44.64	27.81	36.78	16.05	36.73
6.1.7	Scientific and Technical Journal Articles	3.99	1.87	5.80	51.38	13.73	34.55	7.53	12.97	16.29	7.77	1.64	7.86
6.2	**Talent Impact**	**24.42**	**19.16**	**45.30**	**40.14**	**28.01**	**33.84**	**10.67**	**29.00**	**17.42**	**14.68**	**28.59**	**22.55**
6.2.1	Innovation Output	29.11	37.59	42.10	56.02	26.17	36.32	0.00	31.52	16.41	22.75	0.35	26.43
6.2.2	New Product Entrepreneurial Activity	62.16	n/a	82.43	48.45	35.14	55.41	28.38	38.59	22.97	8.11	74.32	41.22
6.2.3	New Business Density	6.40	8.12	n/a	23.76	n/a	7.07	2.34	16.11	n/a	5.83	n/a	3.14
6.2.4	Sophisticated Exports	0.00	11.76	11.35	31.94	22.71	36.57	11.95	28.84	12.88	22.04	11.09	21.83

Appendix C: GTCI 2014 MENA Indicator Rankings[iv]

	Countries	UAE	Qatar	Saudi Arabia		Lebanon	Tunisia	Algeria		Egypt	Morocco	Yemen	
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
Var	**GTCI2014 Total Score**	**22**	**25**	**32**		**57**	**65**	**91**		**80**	**85**	**93**	
	Input												
1.1	**Enablers**	**11**	**12**	**27**		**72**	**79**	**92**		**86**	**82**	**89**	
1.1	**Regulatory Landscape**	**13**	**12**	**47**		**89**	**73**	**90**		**83**	**58**	**93**	
1.1.1	Government Effectiveness	24	30	52		70	55	78		84	57	93	
1.1.2	Business-Government Relations	4	2	16		79	59	77		86	33	83	
1.1.3	Political Stability	24	9	63		91	74	87		90	64	92	
1.1.4	Starting a Foreign Business	n/a	n/a	n/a		n/a	28	32		12	23	n/a	
1.2	**Market Landscape**	**19**	**27**	**26**		**35**	**58**	**93**		**88**	**71**	**82**	
1.2.1	Intensity of Local Competition	13	12	14		21	61	91		87	45	81	
1.2.2	Venture Capital Deals	n/a	51	n/a		n/a	41	58		52	48	n/a	
1.2.3	Firm-level Technology Absorption	4	10	14		61	50	93		76	66	84	
1.2.4	R&D Expenditure	52	n/a	78		n/a	33	81		54	42	n/a	
1.2.5	ICT Access	22	27	30		44	70	75		63	58	88	
1.2.6	Ease of Doing Business	19	38	22		74	41	91		82	62	85	
1.3	**Business Landscape**	**6**	**4**	**12**		**69**	**81**	**89**		**74**	**91**	**58**	
1.3.1	Difficulty of Hiring	1	1	1		58	39	58		22	93	22	
1.3.2	Difficulty of Redundancy	1	1	1		47	91	63		82	75	47	
1.3.3	Labour-Employer Cooperation	14	7	35		56	78	88		77	62	57	
1.3.4	Reliance on Professional Management	23	14	32		85	67	93		91	62	92	
2	**Attract**	**4**	**3**	**34**		**74**	**69**	**90**		**92**	**83**	**93**	
2.1	**External Openness**	**3**	**4**	**9**		**33**	**66**	**91**		**89**	**52**	**93**	
2.1.1	FDI Inflow	42	89	57		10	29	82		71	40	74	
2.1.2	FDI and Technology Transfer	2	4	8		87	53	86		67	48	91	
2.1.3	Prevalence of Foreign Ownership	15	47	65		79	49	89		82	31	92	
2.1.4	Male Adult Migrants	1	1	4		12	86	75		84	90	67	
2.1.5	Female Adult Migrants	1	1	12		16	83	74		84	90	70	
2.1.6	Brain Gain	n/a	3	11		75	63	86		80	31	81	
2.1.7	Brain Drain	n/a	1	14		71	51	85		83	39	85	
2.2	**Internal Openness**	**21**	**13**	**78**		**84**	**69**	**90**		**92**	**83**	**93**	
2.2.1	Tolerance to Minorities	51	n/a	85		86	87	88		90	69	91	
2.2.2	Tolerance to Immigrants	8	n/a	28		63	40	71		89	75	86	
2.2.3	Female Graduates	16	32	62		52	54	9		n/a	71	79	
2.2.4	Female-to-Male Earnings Ratio	78	11	90		84	n/a	91		87	83	84	
2.2.5	Social Mobility	11	7	23		59	56	89		82	53	86	

[iv] Lanvin, INSEAD (2014); PwC analysis

	Countries	UAE	Qatar	Saudi Arabia		Lebanon	Tunisia	Algeria		Egypt	Morocco	Yemen	
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
3	**Grow**	**24**	**25**	**42**		**40**	**78**	**92**		**88**	**89**	**90**	
3.1	**Formal Education**	**32**	**56**	**47**		**34**	**78**	**81**		**55**	**84**	**88**	
3.1.1	Vocational Enrolment	82	86	77		46	49	60		34	67	85	
3.1.2	Tertiary Enrolment	n/a	81	46		48	60	63		64	76	83	
3.1.3	International Student Inflow	1	1	33		10	63	62		46	43	28	
3.1.4	Reading, Math and Science Scores	40	56	n/a		n/a	52	n/a		n/a	n/a	n/a	
3.1.5	University Ranking	41	56	30		48	63	63		43	63	63	
3.2	**Lifelong Learning**	**18**	**5**	**45**		**30**	**58**	**91**		**92**	**68**	**93**	
3.2.1	Quality of Management Schools	24	8	47		13	49	89		93	36	91	
3.2.2	Extent of Staff Training	13	5	42		68	77	92		91	65	83	
3.2.3	Firms Offering Formal Training	n/a	n/a	n/a		16	n/a	60		56	53	66	
3.3	**Access to Growth Opportunities**	**28**	**14**	**37**		**82**	**84**	**92**		**80**	**85**	**64**	
3.3.1	Use of Virtual Social Networks	10	13	26		54	30	78		38	66	88	
3.3.2	Number of Linkedin Users	17	23	36		26	45	54		61	51	n/a	
3.3.3	Willingness to Delegate Authority	18	7	20		81	72	93		32	75	45	
3.3.4	Voicing Concern to Officials	55	n/a	29		89	88	87		80	77	68	
4	**Retain**	**32**	**41**	**26**		**56**	**57**	**67**		**43**	**74**	**88**	
4.1	**Sustainability**	**59**	**61**	**16**		**80**	**56**	**66**		**51**	**67**	**92**	
4.1.1	Pension System	n/a	86	n/a		83	40	36		49	61	77	
4.1.2	Extent and Effect of Taxation	n/a	1	5		28	41	61		74	26	75	
4.1.3	Pay Level - Head of Organization	26	39	16		n/a	42	59		24	34	n/a	
4.1.4	Pay Level - Head of Information Technology	14	41	8		n/a	45	50		15	33	n/a	
4.2	**Lifestyle**	**15**	**26**	**33**		**35**	**52**	**62**		**37**	**73**	**85**	
4.2.1	Environmental Performance	25	38	32		70	44	71		42	62	91	
4.2.2	Safety at Night	1	n/a	21		49	52	64		58	57	42	
4.2.3	Female Part-time Workers	n/a	n/a	n/a		n/a	n/a	n/a		n/a	n/a	n/a	
4.2.4	Physician Density	52	39	68		18	60	61		35	75	84	
4.2.5	Sanitation	38	1	1		35	56	42		43	76	81	
	Output												
5	**Labour and Vocational**	**31**	**30**	**43**		**61**	**54**	**91**		**62**	**82**	**92**	
5.1	**Employable Skills**	**40**	**61**	**50**		**79**	**58**	**83**		**48**	**87**	**86**	
5.1.1	Secondary-educated Workforce	64	n/a	66		79	50	75		52	83	76	
5.1.2	Secondary-educated Population	48	62	52		68	54	81		n/a	n/a	n/a	
5.1.3	Technicians and Associate Professionals	21	63	34		43	n/a	46		46	73	n/a	
5.1.4	State of Cluster Development	2	9	21		80	56	81		40	46	88	
5.2	**Labour Productivity**	**28**	**2**	**37**		**26**	**54**	**93**		**78**	**58**	**92**	
5.2.1	Labour Productivity per Employee	2	1	9		n/a	57	56		67	71	77	
5.2.2	Relationship of Pay to Productivity	5	4	21		45	76	88		86	51	69	

5.2.3	Vocational Skill-intensive Exports	92	87	85		45	18	90		46	24	91	
	Countries	**UAE**	**Qatar**	**Saudi Arabia**		**Lebanon**	**Tunisia**	**Algeria**		**Egypt**	**Morocco**	**Yemen**	
	Income Group	HI	HI	HI		UMI	UMI	UMI		LMI	LMI	LMI	
	MENA Region	GCC	GCC	GCC		Levant +	Magreb	Magreb		Levant +	Magreb	Levant +	
6	**Global Knowledge**	**52**	**59**	**35**		**47**	**46**	**87**		**67**	**88**	**66**	
6.1	**Higher Skills and Competencies**	**38**	**43**	**49**		**39**	**50**	**78**		**56**	87	**79**	
6.1.1	Tertiary-educated Workforce	66	n/a	48		41	57	70		58	77	78	
6.1.2	Tertiary-educated Population	48	40	38		56	62	n/a		n/a	n/a	n/a	
6.1.3	Professionals	33	54	49		47	n/a	73		40	83	37	
6.1.4	Researchers	n/a	n/a	n/a		n/a	33	58		51	44	n/a	
6.1.5	Legislators, Senior Officials and Managers	23	62	60		6	n/a	36		18	80	67	
6.1.6	Quality of Scientific Research Institutions	32	12	36		87	68	90		86	76	93	
6.1.7	Scientific and Technical Journal Articles	73	82	64		54	32	61		52	59	84	
6.2	**Talent Impact**	**60**	**71**	**18**		**54**	**44**	**88**		**79**	**85**	**53**	
6.2.1	Innovation Output	66	45	40		70	50	93		81	77	92	
6.2.2	New Product Entrepreneurial Activity	15	n/a	3		50	20	59		64	74	5	
6.2.3	New Business Density	48	43	n/a		n/a	47	63		n/a	50	n/a	
6.2.4	Sophisticated Exports	93	87	90		41	25	85		74	43	91	

Appendix D: GTCI 2014 MENA Pillar Rankings and Scores[v]

MENA Country Rankings by Pillar

GTCI	INPUT SUB-INDEX	Enablers	Attract	Grow	Retain	OUTPUT SUB-INDEX	Labour and Vocational Skills	Global Knowledge
UAE (22)	UAE (17)	UAE (11)	Qatar (3)	UAE (24)	Saudi Arabia (26)	Saudi Arabia (36)	Qatar (30)	Saudi Arabia (35)
Qatar (25)	Qatar (20)	Qatar (12)	UAE (4)	Qatar (25)	UAE (32)	UAE(40)	UAE (31)	Tunisia (46)
Saudi Arabia (32)	Saudi Arabia (27)	Saudi Arabia (27)	Saudi Arabia (34)	Lebanon (40)	Qatar (41)	Qatar (44)	Saudi Arabia (43)	Lebanon (47)
Lebanon (57)	Lebanon (56)	Lebanon (72)	Tunisia (69)	Saudi Arabia (42)	Egypt (43)	Tunisia (51)	Tunisia (54)	UAE (52)
Tunisia (65)	Tunisia (75)	Tunisia (79)	Lebanon (74)	Tunisia (78)	Lebanon (56)	Lebanon (54)	Lebanon (61)	Qatar (59)
Egypt (80)	Morocco (80)	Morocco (82)	Morocco (83)	Egypt (88)	Tunisia (57)	Egypt (66)	Egypt (62)	Yemen (66)
Morocco (85)	Egypt (88)	Egypt (86)	Algeria (90)	Morocco (89)	Algeria (67)	Yemen (87)	Morocco (82)	Egypt (67)
Algeria (91)	Algeria (90)	Yemen (89)	Egypt (92)	Yemen (90)	Morocco (74)	Morocco (89)	Algeria (91)	Algeria (87)
Yemen (93)	Yemen (93)	Algeria (92)	Yemen (93)	Algeria (92)	Yemen (88)	Algeria (91)	Yemen (92)	Morocco (88)

High Income
Upper Middle Income
Lower Middle Income

[v] Lanvin, INSEAD (2014); PwC analysis

Figure D.1: Enablers Pillar Scores vs. Income Cohort Averages

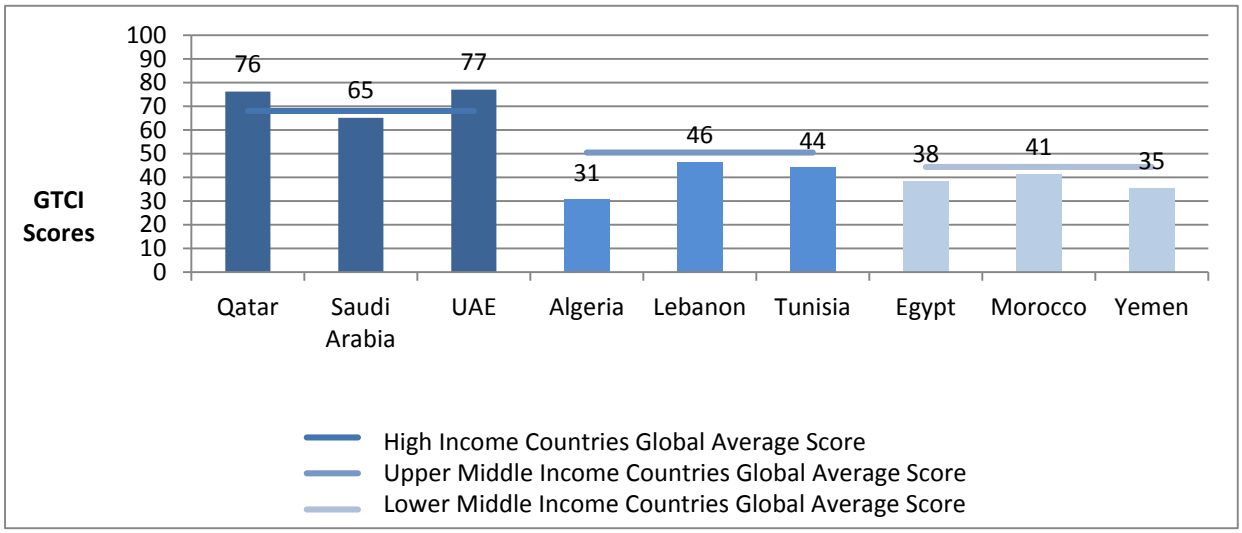


Figure D.2: Attract Pillar Scores vs. Income Cohort Averages

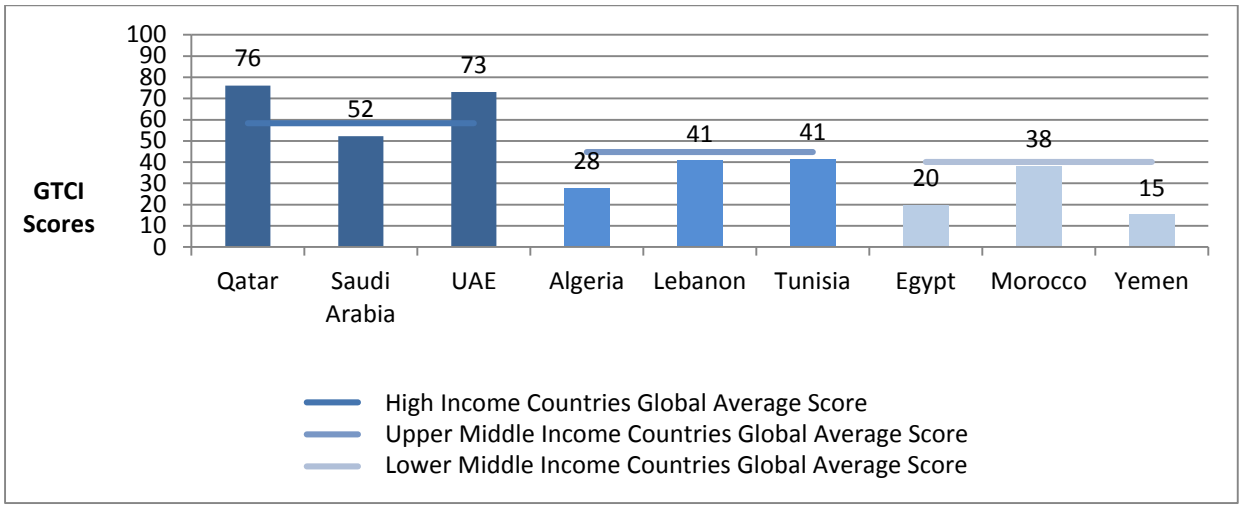


Figure D.3: Grow Pillar Scores vs. Income Cohort Averages

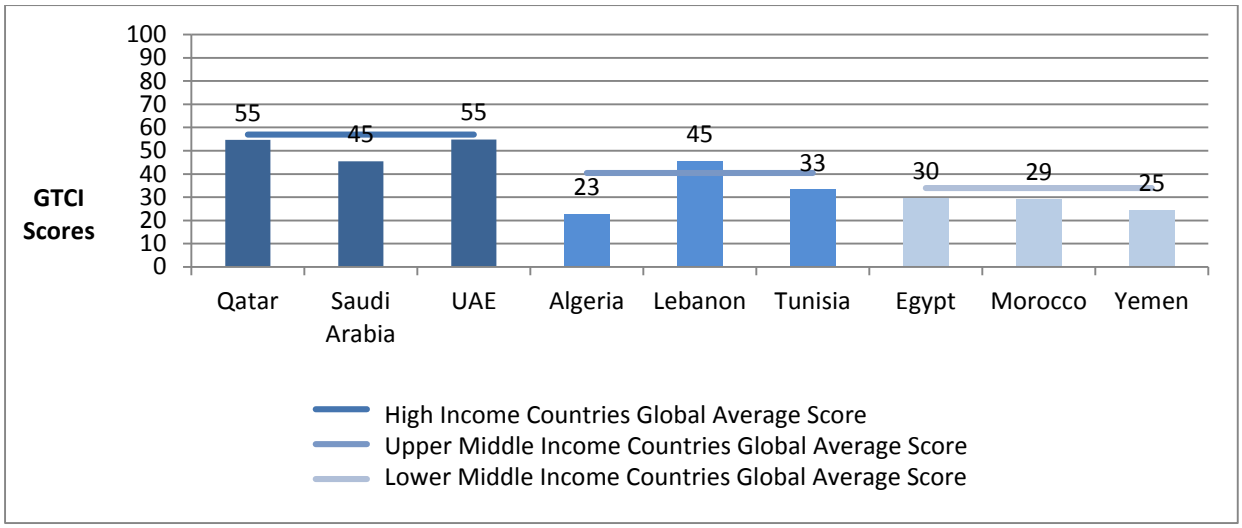


Figure D.4: Retain Pillar Scores vs. Income Cohort Averages

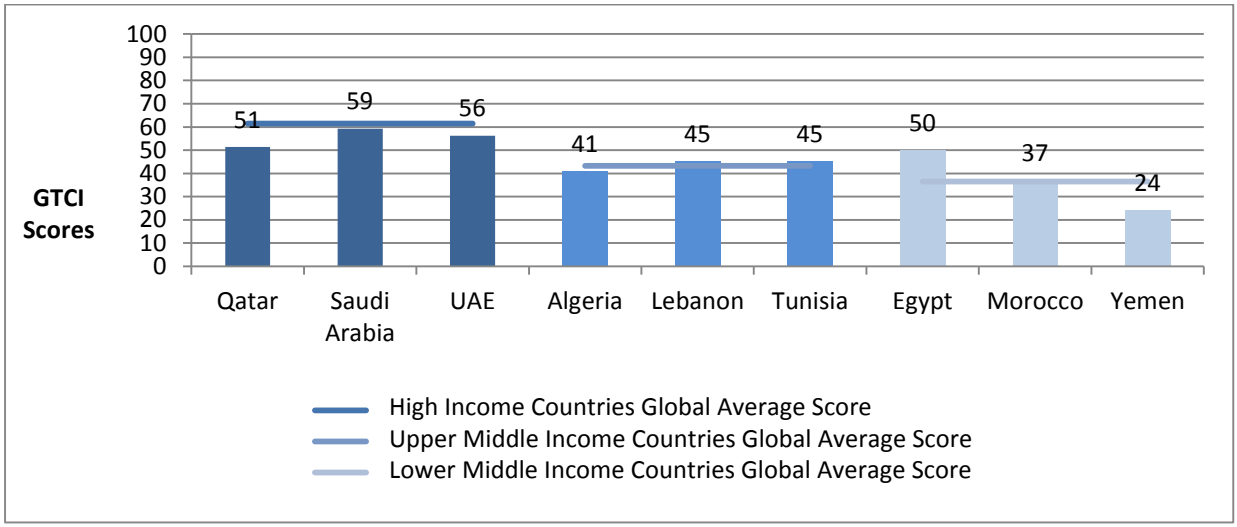


Figure D.5: LV Skills Pillar Scores vs. Income Cohort Averages

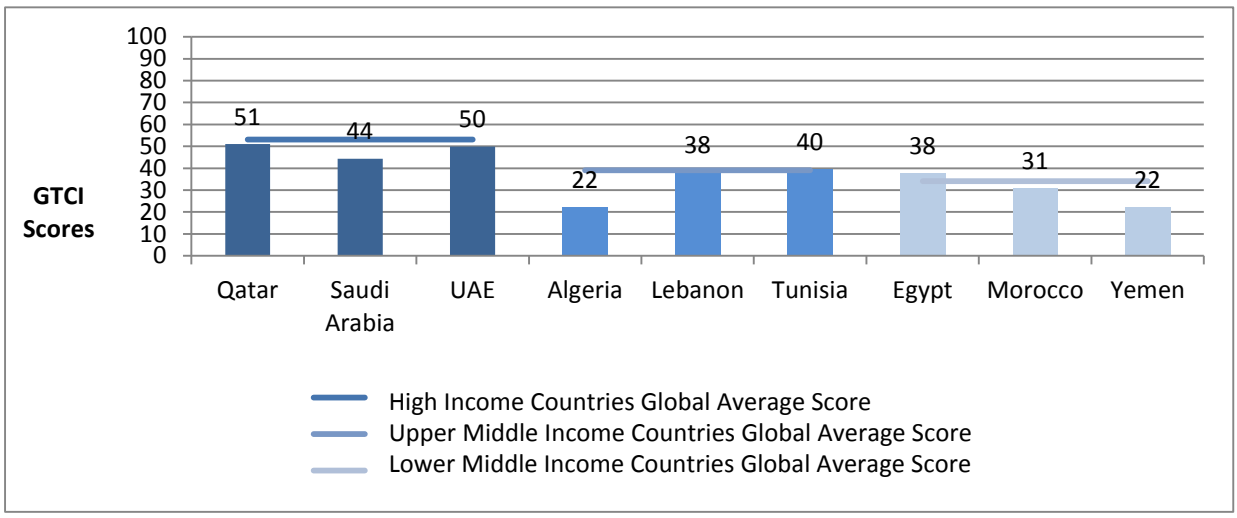
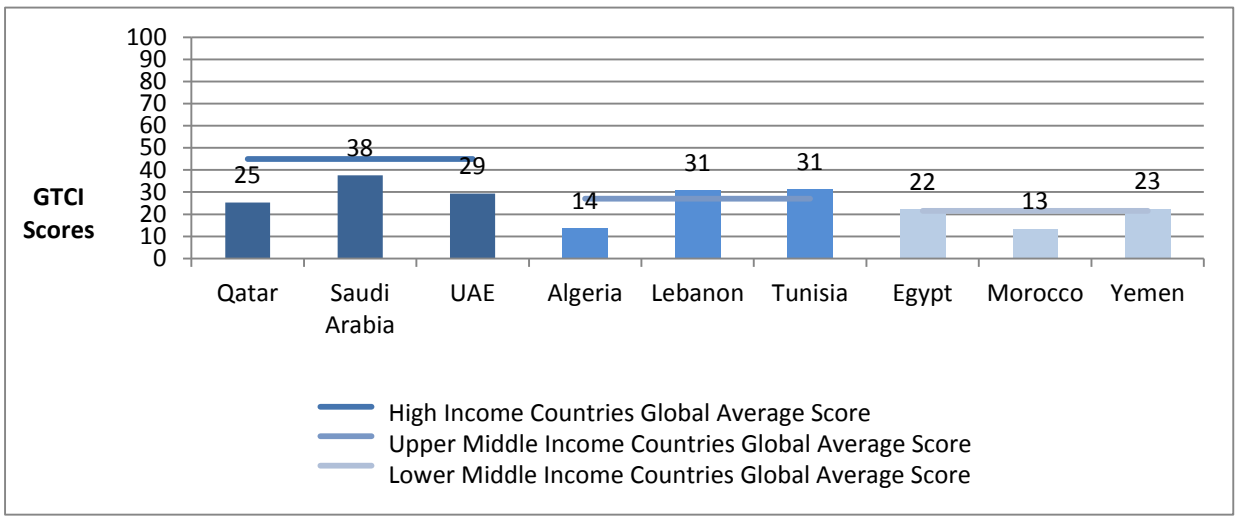


Figure D.6: GK Skills Pillar Scores vs. Income Cohort Averages



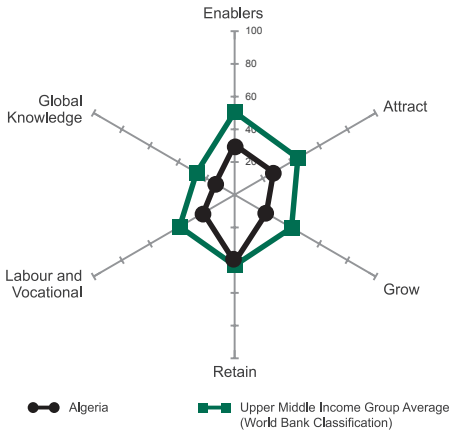
Appendix E: GTCI 2014 MENA Country Profiles

ALGERIA

Upper Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **91**

Population (millions)	**39.21**
GDP per capita (PPP$)	**13,304**
GDP (US$ billions)	**210.18**
GTCI Score	**26.28**
GTCI Score (Income Group Average)	**40.84**



	VARIABLE	SCORE	RANK
1	**Enablers**	30.52	92
1.1	**Regulatory landscape**	29.08	90
	Government efficiency		
1.1.1	Government effectiveness	20.71	78
1.1.2	Business-government relations	39.68	77
1.1.3	Political stability	32.84	87
	FDI climate		
1.1.4	Starting a foreign business	23.08	32
1.2	**Market landscape**	18.37	93
	Competition climate		
1.2.1	Intensity of local competition	42.72	91
	Innovation climate		
1.2.2	Venture capital deals	0.00	58
1.2.3	Firm-level technology absorption	36.13	93
1.2.4	R&D expenditure	0.73	81
	Connectivity		
1.2.5	ICT access	28.46	75
	Ease of doing business		
1.2.6	Ease of doing business	2.20	91
1.3	**Business landscape**	44.12	89
	Labour market flexibility		
1.3.1	Difficulty of hiring	55.67	58
1.3.2	Difficulty of redundancy	60.00	63
1.3.3	Labour-employer cooperation	39.21	88
	Ownership and governance		
1.3.4	Reliance on professional management	21.59	93
2	**Attract**	27.57	90
2.1	**External openness**	18.23	91
	Industrial openness		
2.1.1	FDI inflow	9.75	82
2.1.2	FDI and technology transfer	43.82	86
2.1.3	Prevalence of foreign ownership	36.95	89
	Migration openness		
2.1.4	Male adult migrants	1.71	75
2.1.5	Female adult migrants	1.39	74
2.1.6	Brain gain	16.00	86
2.1.7	Brain drain	18.00	85
2.2	**Internal openness**	36.90	90
	Diversity		
2.2.1	Tolerance to minorities	20.84	88
2.2.2	Tolerance to immigrants	44.64	71
	Gender mobility		
2.2.3	Female graduates	83.47	9
2.2.4	Female-to-male earnings ratio	0.00	91
	Social mobility		
2.2.5	Social mobility	35.56	89
3	**Grow**	22.51	92
3.1	**Formal education**	11.99	81
	Education climate		
3.1.1	Vocational enrolment	17.12	60
3.1.2	Tertiary enrolment	28.31	63
	Internationalisation of education		
3.1.3	International student inflow	2.53	62
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	0.00	63
3.2	**Lifelong learning**	28.17	91
	Further education		
3.2.1	Quality of management schools	33.33	89
3.2.2	Extent of staff training	34.06	92
	Continuous development		
3.2.3	Firms offering formal training	17.14	60

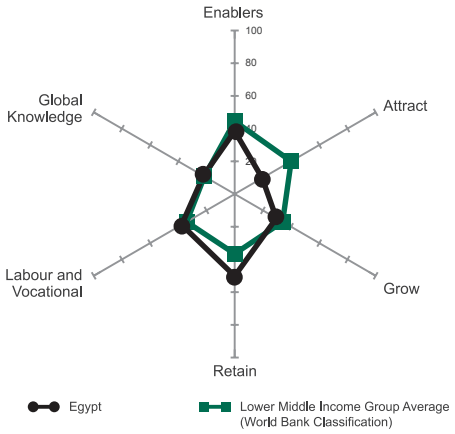
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	27.36	92
	Networks		
3.3.1	Use of virtual social networks	68.46	78
3.3.2	Number of LinkedIn users	8.24	54
	Learning through experience		
3.3.3	Willingness to delegate authority	27.18	93
	Voice		
3.3.4	Voicing concern to officials	5.56	87
4	**Retain**	41.11	67
4.1	**Sustainability**	33.78	66
	Social protection		
4.1.1	Pension system	74.53	36
	Taxation		
4.1.2	Extent and effect of taxation	38.17	61
	Pay		
4.1.3	Pay level – head of organisation	14.48	59
4.1.4	Pay level – head of information technology	7.93	50
4.2	**Lifestyle**	48.45	62
	Quality of life		
4.2.1	Environmental performance	39.43	71
4.2.2	Safety at night	41.57	64
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	18.45	61
4.2.5	Sanitation	94.34	42
5	**Labour and Vocational Skills**	22.25	91
5.1	**Employable skills**	24.52	83
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	17.21	75
5.1.2	Secondary-educated population	2.13	81
	Technical professions		
5.1.3	Technicians and associate professionals	42.29	46
	Employment quality		
5.1.4	State of cluster development	36.45	81
5.2	**Labour productivity**	19.98	93
	Labour productivity		
5.2.1	Labour productivity per employee	15.09	56
	Pay and productivity		
5.2.2	Relationship of pay to productivity	30.29	88
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	14.55	90
6	**Global Knowledge**	13.70	87
6.1	**Higher skills and competencies**	16.74	78
	Educated workforce		
6.1.1	Tertiary-educated workforce	21.38	70
6.1.2	Tertiary-educated population	n/a	n/a
	Knowledge workers		
6.1.3	Professionals	11.89	73
6.1.4	Researchers	1.62	58
6.1.5	Legislators, senior officials and managers	32.77	36
	Research quality		
6.1.6	Quality of scientific research institutions	25.23	90
6.1.7	Scientific and technical journal articles	7.53	61
6.2	**Talent impact**	10.67	88
	Innovation		
6.2.1	Innovation output	0.00	93
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	28.38	59
6.2.3	New business density	2.34	63
	High-value exports		
6.2.4	Sophisticated exports	11.95	85

EGYPT

Lower Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **80**

Population (millions)	**82.06**
GDP per capita (PPP$)	**11,084**
GDP (US$ billions)	**271.97**
GTCI Score	**32.93**
GTCI Score (Income Group Average)	**35.11**



	VARIABLE	SCORE	RANK
1	**Enablers**	38.48	86
1.1	**Regulatory landscape**	35.37	83
	Government efficiency		
1.1.1	Government effectiveness	14.52	84
1.1.2	Business-government relations	36.00	86
1.1.3	Political stability	29.41	90
	FDI climate		
1.1.4	Starting a foreign business	61.54	12
1.2	**Market landscape**	27.08	88
	Competition climate		
1.2.1	Intensity of local competition	51.08	87
	Innovation climate		
1.2.2	Venture capital deals	0.44	52
1.2.3	Firm-level technology absorption	53.40	76
1.2.4	R&D expenditure	9.08	54
	Connectivity		
1.2.5	ICT access	36.51	63
	Ease of doing business		
1.2.6	Ease of doing business	12.00	82
1.3	**Business landscape**	53.00	74
	Labour market flexibility		
1.3.1	Difficulty of hiring	89.00	22
1.3.2	Difficulty of redundancy	40.00	82
1.3.3	Labour-employer cooperation	47.47	77
	Ownership and governance		
1.3.4	Reliance on professional management	35.51	91
2	**Attract**	19.51	92
2.1	**External openness**	21.77	89
	Industrial openness		
2.1.1	FDI inflow	12.44	71
2.1.2	FDI and technology transfer	53.10	67
2.1.3	Prevalence of foreign ownership	44.11	82
	Migration openness		
2.1.4	Male adult migrants	0.84	84
2.1.5	Female adult migrants	0.57	84
2.1.6	Brain gain	19.67	80
2.1.7	Brain drain	21.67	83
2.2	**Internal openness**	17.24	92
	Diversity		
2.2.1	Tolerance to minorities	8.78	90
2.2.2	Tolerance to immigrants	7.11	89
	Gender mobility		
2.2.3	Female graduates	n/a	n/a
2.2.4	Female-to-male earnings ratio	11.90	87
	Social mobility		
2.2.5	Social mobility	41.17	82
3	**Grow**	29.56	88
3.1	**Formal education**	24.67	55
	Education climate		
3.1.1	Vocational enrolment	36.10	34
3.1.2	Tertiary enrolment	25.51	64
	Internationalisation of education		
3.1.3	International student inflow	8.52	46
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	28.55	43
3.2	**Lifelong learning**	26.43	92
	Further education		
3.2.1	Quality of management schools	21.58	93
3.2.2	Extent of staff training	34.68	91
	Continuous development		
3.2.3	Firms offering formal training	23.03	56

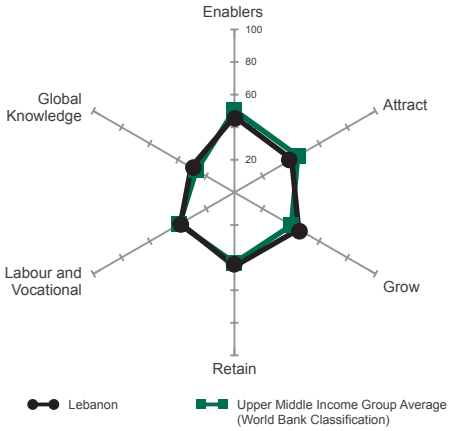
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	37.57	80
	Networks		
3.3.1	Use of virtual social networks	81.85	38
3.3.2	Number of LinkedIn users	5.91	61
	Learning through experience		
3.3.3	Willingness to delegate authority	50.95	32
	Voice		
3.3.4	Voicing concern to officials	11.58	80
4	**Retain**	50.15	43
4.1	**Sustainability**	39.38	51
	Social protection		
4.1.1	Pension system	54.87	49
	Taxation		
4.1.2	Extent and effect of taxation	30.44	74
	Pay		
4.1.3	Pay level – head of organisation	33.92	24
4.1.4	Pay level – head of information technology	38.28	15
4.2	**Lifestyle**	60.92	37
	Quality of life		
4.2.1	Environmental performance	57.20	42
4.2.2	Safety at night	47.11	58
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	45.13	35
4.2.5	Sanitation	94.22	43
5	**Labour and Vocational Skills**	37.65	62
5.1	**Employable skills**	45.19	48
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	41.78	52
5.1.2	Secondary-educated population	n/a	n/a
	Technical professions		
5.1.3	Technicians and associate professionals	42.29	46
	Employment quality		
5.1.4	State of cluster development	51.49	40
5.2	**Labour productivity**	30.11	78
	Labour productivity		
5.2.1	Labour productivity per employee	10.61	67
	Pay and productivity		
5.2.2	Relationship of pay to productivity	35.47	86
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	44.25	46
6	**Global Knowledge**	22.26	67
6.1	**Higher skills and competencies**	27.09	56
	Educated workforce		
6.1.1	Tertiary-educated workforce	28.11	58
6.1.2	Tertiary-educated population	n/a	n/a
	Knowledge workers		
6.1.3	Professionals	39.02	40
6.1.4	Researchers	5.56	51
6.1.5	Legislators, senior officials and managers	45.76	18
	Research quality		
6.1.6	Quality of scientific research institutions	27.81	86
6.1.7	Scientific and technical journal articles	16.29	52
6.2	**Talent impact**	17.42	79
	Innovation		
6.2.1	Innovation output	16.41	81
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	22.97	64
6.2.3	New business density	n/a	n/a
	High-value exports		
6.2.4	Sophisticated exports	12.88	74

LEBANON

Upper Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **57**

Population (millions)	**4.47**
GDP per capita (PPP$)	**17,169**
GDP (US$ billions)	**44.35**
GTCI Score	**41.13**
GTCI Score (Income Group Average)	**40.84**



	VARIABLE	SCORE	RANK
1	**Enablers**	46.49	72
1.1	**Regulatory landscape**	30.47	89
	Government efficiency		
1.1.1	Government effectiveness	26.77	70
1.1.2	Business-government relations	39.34	79
1.1.3	Political stability	25.32	91
	FDI climate		
1.1.4	Starting a foreign business	n/a	n/a
1.2	**Market landscape**	53.94	35
	Competition climate		
1.2.1	Intensity of local competition	75.62	21
	Innovation climate		
1.2.2	Venture capital deals	n/a	n/a
1.2.3	Firm-level technology absorption	58.22	61
1.2.4	R&D expenditure	n/a	n/a
	Connectivity		
1.2.5	ICT access	61.21	44
	Ease of doing business		
1.2.6	Ease of doing business	20.70	74
1.3	**Business landscape**	55.05	69
	Labour market flexibility		
1.3.1	Difficulty of hiring	55.67	58
1.3.2	Difficulty of redundancy	70.00	47
1.3.3	Labour-employer cooperation	52.77	56
	Ownership and governance		
1.3.4	Reliance on professional management	41.77	85
2	**Attract**	40.55	74
2.1	**External openness**	40.35	33
	Industrial openness		
2.1.1	FDI inflow	67.06	10
2.1.2	FDI and technology transfer	43.78	87
2.1.3	Prevalence of foreign ownership	47.46	79
	Migration openness		
2.1.4	Male adult migrants	38.64	12
2.1.5	Female adult migrants	33.82	16
2.1.6	Brain gain	23.67	75
2.1.7	Brain drain	28.00	71
2.2	**Internal openness**	40.76	84
	Diversity		
2.2.1	Tolerance to minorities	28.62	86
2.2.2	Tolerance to immigrants	48.76	63
	Gender mobility		
2.2.3	Female graduates	62.64	52
2.2.4	Female-to-male earnings ratio	13.10	84
	Social mobility		
2.2.5	Social mobility	50.69	59
3	**Grow**	45.50	40
3.1	**Formal education**	38.88	34
	Education climate		
3.1.1	Vocational enrolment	29.99	46
3.1.2	Tertiary enrolment	43.61	48
	Internationalisation of education		
3.1.3	International student inflow	58.94	10
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	22.99	48
3.2	**Lifelong learning**	60.79	30
	Further education		
3.2.1	Quality of management schools	73.43	13
3.2.2	Extent of staff training	44.82	68
	Continuous development		
3.2.3	Firms offering formal training	64.12	16

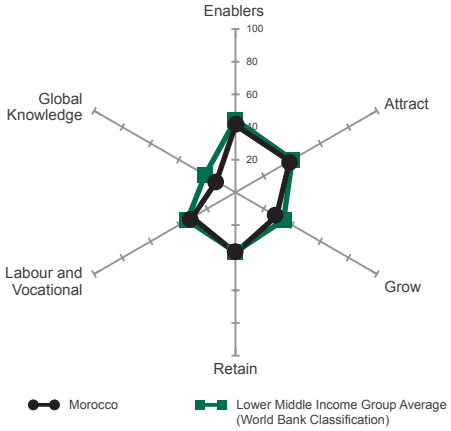
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	36.81	82
	Networks		
3.3.1	Use of virtual social networks	77.76	54
3.3.2	Number of LinkedIn users	28.70	26
	Learning through experience		
3.3.3	Willingness to delegate authority	37.59	81
	Voice		
3.3.4	Voicing concern to officials	3.22	89
4	**Retain**	45.33	56
4.1	**Sustainability**	28.35	80
	Social protection		
4.1.1	Pension system	8.21	83
	Taxation		
4.1.2	Extent and effect of taxation	48.49	28
	Pay		
4.1.3	Pay level – head of organisation	n/a	n/a
4.1.4	Pay level – head of information technology	n/a	n/a
4.2	**Lifestyle**	62.32	35
	Quality of life		
4.2.1	Environmental performance	39.54	70
4.2.2	Safety at night	54.89	49
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	56.81	18
4.2.5	Sanitation	98.03	35
5	**Labour and Vocational Skills**	38.16	61
5.1	**Employable skills**	27.90	79
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	12.05	79
5.1.2	Secondary-educated population	17.36	68
	Technical professions		
5.1.3	Technicians and associate professionals	45.27	43
	Employment quality		
5.1.4	State of cluster development	36.93	80
5.2	**Labour productivity**	48.42	26
	Labour productivity		
5.2.1	Labour productivity per employee	n/a	n/a
	Pay and productivity		
5.2.2	Relationship of pay to productivity	51.67	45
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	45.17	45
6	**Global Knowledge**	30.73	47
6.1	**Higher skills and competencies**	33.44	39
	Educated workforce		
6.1.1	Tertiary-educated workforce	36.53	41
6.1.2	Tertiary-educated population	25.50	56
	Knowledge workers		
6.1.3	Professionals	30.79	47
6.1.4	Researchers	n/a	n/a
6.1.5	Legislators, senior officials and managers	66.67	6
	Research quality		
6.1.6	Quality of scientific research institutions	27.44	87
6.1.7	Scientific and technical journal articles	13.73	54
6.2	**Talent impact**	28.01	54
	Innovation		
6.2.1	Innovation output	26.17	70
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	35.14	50
6.2.3	New business density	n/a	n/a
	High-value exports		
6.2.4	Sophisticated exports	22.71	41

MOROCCO

Lower Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **85**

Population (millions)	**33.01**
GDP per capita (PPP$)	**7,200**
GDP (US$ billions)	**104.37**
GTCI Score	**31.60**
GTCI Score (Income Group Average)	**35.11**



	VARIABLE	SCORE	RANK
1	**Enablers**	41.16	82
1.1	**Regulatory landscape**	49.27	58
	Government efficiency		
1.1.1	Government effectiveness	35.27	57
1.1.2	Business-government relations	60.29	33
1.1.3	Political stability	54.42	64
	FDI climate		
1.1.4	Starting a foreign business	47.12	23
1.2	**Market landscape**	36.42	71
	Competition climate		
1.2.1	Intensity of local competition	68.67	45
	Innovation climate		
1.2.2	Venture capital deals	0.71	48
1.2.3	Firm-level technology absorption	56.56	66
1.2.4	R&D expenditure	16.04	42
	Connectivity		
1.2.5	ICT access	42.82	58
	Ease of doing business		
1.2.6	Ease of doing business	33.70	62
1.3	**Business landscape**	37.80	91
	Labour market flexibility		
1.3.1	Difficulty of hiring	0.00	93
1.3.2	Difficulty of redundancy	50.00	75
1.3.3	Labour-employer cooperation	51.70	62
	Ownership and governance		
1.3.4	Reliance on professional management	49.52	62
2	**Attract**	38.28	83
2.1	**External openness**	35.60	52
	Industrial openness		
2.1.1	FDI inflow	24.61	40
2.1.2	FDI and technology transfer	62.31	48
2.1.3	Prevalence of foreign ownership	70.14	31
	Migration openness		
2.1.4	Male adult migrants	0.26	90
2.1.5	Female adult migrants	0.21	90
2.1.6	Brain gain	48.00	31
2.1.7	Brain drain	43.67	39
2.2	**Internal openness**	40.97	83
	Diversity		
2.2.1	Tolerance to minorities	56.45	69
2.2.2	Tolerance to immigrants	41.67	75
	Gender mobility		
2.2.3	Female graduates	38.91	71
2.2.4	Female-to-male earnings ratio	14.29	83
	Social mobility		
2.2.5	Social mobility	53.52	53
3	**Grow**	29.01	89
3.1	**Formal education**	8.46	84
	Education climate		
3.1.1	Vocational enrolment	12.50	67
3.1.2	Tertiary enrolment	12.48	76
	Internationalisation of education		
3.1.3	International student inflow	8.87	43
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	0.00	63
3.2	**Lifelong learning**	44.12	68
	Further education		
3.2.1	Quality of management schools	59.94	36
3.2.2	Extent of staff training	45.39	65
	Continuous development		
3.2.3	Firms offering formal training	27.04	53

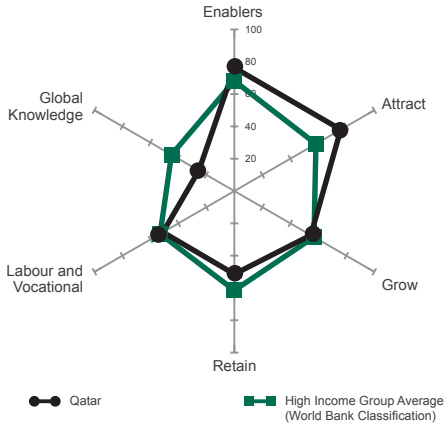
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	34.44	85
	Networks		
3.3.1	Use of virtual social networks	73.97	66
3.3.2	Number of LinkedIn users	10.42	51
	Learning through experience		
3.3.3	Willingness to delegate authority	39.36	75
	Voice		
3.3.4	Voicing concern to officials	14.01	77
4	**Retain**	37.01	74
4.1	**Sustainability**	33.06	67
	Social protection		
4.1.1	Pension system	28.78	61
	Taxation		
4.1.2	Extent and effect of taxation	49.90	26
	Pay		
4.1.3	Pay level – head of organisation	26.61	34
4.1.4	Pay level – head of information technology	26.94	33
4.2	**Lifestyle**	40.96	73
	Quality of life		
4.2.1	Environmental performance	42.35	62
4.2.2	Safety at night	47.62	57
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	8.80	75
4.2.5	Sanitation	65.09	76
5	**Labour and Vocational Skills**	30.65	82
5.1	**Employable skills**	23.39	87
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	1.72	83
5.1.2	Secondary-educated population	n/a	n/a
	Technical professions		
5.1.3	Technicians and associate professionals	18.91	73
	Employment quality		
5.1.4	State of cluster development	49.54	46
5.2	**Labour productivity**	37.92	58
	Labour productivity		
5.2.1	Labour productivity per employee	7.30	71
	Pay and productivity		
5.2.2	Relationship of pay to productivity	49.26	51
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	57.20	24
6	**Global Knowledge**	13.46	88
6.1	**Higher skills and competencies**	12.23	87
	Educated workforce		
6.1.1	Tertiary-educated workforce	11.28	77
6.1.2	Tertiary-educated population	n/a	n/a
	Knowledge workers		
6.1.3	Professionals	4.88	83
6.1.4	Researchers	9.31	44
6.1.5	Legislators, senior officials and managers	3.39	80
	Research quality		
6.1.6	Quality of scientific research institutions	36.78	76
6.1.7	Scientific and technical journal articles	7.77	59
6.2	**Talent impact**	14.68	85
	Innovation		
6.2.1	Innovation output	22.75	77
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	8.11	74
6.2.3	New business density	5.83	50
	High-value exports		
6.2.4	Sophisticated exports	22.04	43

QATAR

High Income
Northern Africa and Western Asia

RANK
(out of 93) **25**

Population (millions)	**2.17**
GDP per capita (PPP$)	**13,1757**
GDP (US$ billions)	**202.45**
GTCI Score	**55.80**
GTCI Score (Income Group Average)	**57.13**



	VARIABLE	SCORE	RANK
1	**Enablers**	76.33	12
1.1	**Regulatory landscape**	81.34	12
	Government efficiency		
1.1.1	Government effectiveness	63.64	30
1.1.2	Business-government relations	84.99	2
1.1.3	Political stability	95.37	9
	FDI climate		
1.1.4	Starting a foreign business	n/a	n/a
1.2	**Market landscape**	59.37	27
	Competition climate		
1.2.1	Intensity of local competition	79.33	12
	Innovation climate		
1.2.2	Venture capital deals	0.50	51
1.2.3	Firm-level technology absorption	81.77	10
1.2.4	R&D expenditure	n/a	n/a
	Connectivity		
1.2.5	ICT access	75.44	27
	Ease of doing business		
1.2.6	Ease of doing business	59.80	38
1.3	**Business landscape**	88.28	4
	Labour market flexibility		
1.3.1	Difficulty of hiring	100.00	1
1.3.2	Difficulty of redundancy	100.00	1
1.3.3	Labour-employer cooperation	76.27	7
	Ownership and governance		
1.3.4	Reliance on professional management	76.86	14
2	**Attract**	76.03	3
2.1	**External openness**	73.46	4
	Industrial openness		
2.1.1	FDI inflow	6.13	89
2.1.2	FDI and technology transfer	80.21	4
2.1.3	Prevalence of foreign ownership	61.87	47
	Migration openness		
2.1.4	Male adult migrants	100.00	1
2.1.5	Female adult migrants	100.00	1
2.1.6	Brain gain	83.17	3
2.1.7	Brain drain	82.83	1
2.2	**Internal openness**	78.60	13
	Diversity		
2.2.1	Tolerance to minorities	n/a	n/a
2.2.2	Tolerance to immigrants	n/a	n/a
	Gender mobility		
2.2.3	Female graduates	73.43	32
2.2.4	Female-to-male earnings ratio	79.76	11
	Social mobility		
2.2.5	Social mobility	82.60	7
3	**Grow**	54.66	25
3.1	**Formal education**	24.33	56
	Education climate		
3.1.1	Vocational enrolment	1.39	86
3.1.2	Tertiary enrolment	8.33	81
	Internationalisation of education		
3.1.3	International student inflow	100.00	1
	Performance of education system		
3.1.4	Reading, maths and science scores	3.49	56
3.1.5	University ranking	8.43	56
3.2	**Lifelong learning**	74.43	5
	Further education		
3.2.1	Quality of management schools	77.73	8
3.2.2	Extent of staff training	71.13	5
	Continuous development		
3.2.3	Firms offering formal training	n/a	n/a

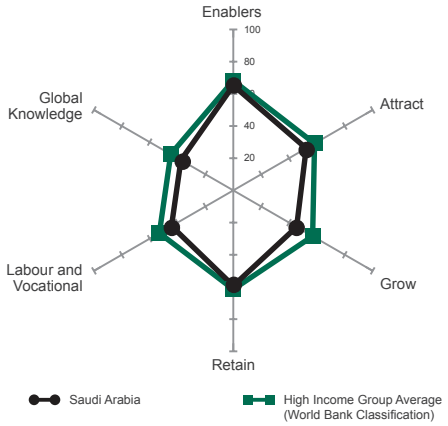
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	65.23	14
	Networks		
3.3.1	Use of virtual social networks	88.23	13
3.3.2	Number of LinkedIn users	33.02	23
	Learning through experience		
3.3.3	Willingness to delegate authority	74.44	7
	Voice		
3.3.4	Voicing concern to officials	n/a	n/a
4	**Retain**	51.42	41
4.1	**Sustainability**	34.77	61
	Social protection		
4.1.1	Pension system	2.83	86
	Taxation		
4.1.2	Extent and effect of taxation	89.29	1
	Pay		
4.1.3	Pay level – head of organisation	25.12	39
4.1.4	Pay level – head of information technology	21.84	41
4.2	**Lifestyle**	68.08	26
	Quality of life		
4.2.1	Environmental performance	60.30	38
4.2.2	Safety at night	n/a	n/a
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	43.93	39
4.2.5	Sanitation	100.00	1
5	**Labour and Vocational**	50.99	30
5.1	**Employable skills**	39.68	61
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	n/a	n/a
5.1.2	Secondary-educated population	21.88	62
	Technical professions		
5.1.3	Technicians and associate professionals	27.86	63
	Employment quality		
5.1.4	State of cluster development	69.29	9
5.2	**Labour productivity**	62.30	2
	Labour productivity		
5.2.1	Labour productivity per employee	100.00	1
	Pay and productivity		
5.2.2	Relationship of pay to productivity	70.29	4
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	16.62	87
6	**Global Knowledge**	25.36	59
6.1	**Higher skills and competencies**	31.57	43
	Educated workforce		
6.1.1	Tertiary-educated workforce	n/a	n/a
6.1.2	Tertiary-educated population	34.75	40
	Knowledge workers		
6.1.3	Professionals	27.74	54
6.1.4	Researchers	n/a	n/a
6.1.5	Legislators, senior officials and managers	16.95	62
	Research quality		
6.1.6	Quality of scientific research institutions	76.53	12
6.1.7	Scientific and technical journal articles	1.87	82
6.2	**Talent impact**	19.16	71
	Innovation		
6.2.1	Innovation output	37.59	45
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	n/a	n/a
6.2.3	New business density	8.12	43
	High-value exports		
6.2.4	Sophisticated exports	11.76	87

SAUDI ARABIA

High Income
Northern Africa and Western Asia

RANK
(out of 93) **32**

Population (millions)	**28.83**
GDP per capita (PPP$)	**53,780**
GDP (US$ billions)	**745.27**
GTCI Score	**50.69**
GTCI Score (Income Group Average)	**57.13**



	VARIABLE	SCORE	RANK
1	**Enablers**	65.21	27
1.1	**Regulatory landscape**	53.93	47
	Government efficiency		
1.1.1	Government effectiveness	37.29	52
1.1.2	Business-government relations	69.99	16
1.1.3	Political stability	54.49	63
	FDI climate		
1.1.4	Starting a foreign business	n/a	n/a
1.2	**Market landscape**	61.39	26
	Competition climate		
1.2.1	Intensity of local competition	78.09	14
	Innovation climate		
1.2.2	Venture capital deals	n/a	n/a
1.2.3	Firm-level technology absorption	79.68	14
1.2.4	R&D expenditure	1.12	78
	Connectivity		
1.2.5	ICT access	70.87	30
	Ease of doing business		
1.2.6	Ease of doing business	77.20	22
1.3	**Business landscape**	80.31	12
	Labour market flexibility		
1.3.1	Difficulty of hiring	100.00	1
1.3.2	Difficulty of redundancy	100.00	1
1.3.3	Labour-employer cooperation	58.75	35
	Ownership and governance		
1.3.4	Reliance on professional management	62.51	32
2	**Attract**	52.30	34
2.1	**External openness**	58.05	9
	Industrial openness		
2.1.1	FDI inflow	17.69	57
2.1.2	FDI and technology transfer	74.92	8
2.1.3	Prevalence of foreign ownership	53.55	65
	Migration openness		
2.1.4	Male adult migrants	94.00	4
2.1.5	Female adult migrants	41.04	12
2.1.6	Brain gain	64.50	11
2.1.7	Brain drain	60.67	14
2.2	**Internal openness**	46.54	78
	Diversity		
2.2.1	Tolerance to minorities	28.77	85
2.2.2	Tolerance to immigrants	73.25	28
	Gender mobility		
2.2.3	Female graduates	53.94	62
2.2.4	Female-to-male earnings ratio	3.57	90
	Social mobility		
2.2.5	Social mobility	73.18	23
3	**Grow**	45.43	42
3.1	**Formal education**	29.38	47
	Education climate		
3.1.1	Vocational enrolment	7.36	77
3.1.2	Tertiary enrolment	48.44	46
	Internationalisation of education		
3.1.3	International student inflow	17.76	33
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	43.95	30
3.2	**Lifelong learning**	53.98	45
	Further education		
3.2.1	Quality of management schools	55.67	47
3.2.2	Extent of staff training	52.30	42
	Continuous development		
3.2.3	Firms offering formal training	n/a	n/a

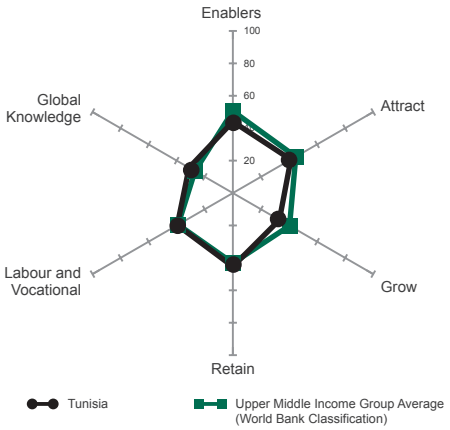
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	52.94	37
	Networks		
3.3.1	Use of virtual social networks	84.52	26
3.3.2	Number of LinkedIn users	19.05	36
	Learning through experience		
3.3.3	Willingness to delegate authority	60.36	20
	Voice		
3.3.4	Voicing concern to officials	47.84	29
4	**Retain**	59.27	26
4.1	**Sustainability**	53.80	16
	Social protection		
4.1.1	Pension system	n/a	n/a
	Taxation		
4.1.2	Extent and effect of taxation	65.80	5
	Pay		
4.1.3	Pay level – head of organisation	41.93	16
4.1.4	Pay level – head of information technology	53.67	8
4.2	**Lifestyle**	64.73	33
	Quality of life		
4.2.1	Environmental performance	66.15	32
4.2.2	Safety at night	78.73	21
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	14.04	68
4.2.5	Sanitation	100.00	1
5	**Labour and Vocational**	44.33	43
5.1	**Employable skills**	44.26	50
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	28.01	66
5.1.2	Secondary-educated population	33.35	52
	Technical professions		
5.1.3	Technicians and associate professionals	54.23	34
	Employment quality		
5.1.4	State of cluster development	61.43	21
5.2	**Labour productivity**	44.41	37
	Labour productivity		
5.2.1	Labour productivity per employee	57.74	9
	Pay and productivity		
5.2.2	Relationship of pay to productivity	58.68	21
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	16.81	85
6	**Global Knowledge**	37.58	35
6.1	**Higher skills and competencies**	29.87	49
	Educated workforce		
6.1.1	Tertiary-educated workforce	30.64	48
6.1.2	Tertiary-educated population	34.91	38
	Knowledge workers		
6.1.3	Professionals	30.49	49
6.1.4	Researchers	n/a	n/a
6.1.5	Legislators, senior officials and managers	19.77	60
	Research quality		
6.1.6	Quality of scientific research institutions	57.58	36
6.1.7	Scientific and technical journal articles	5.80	64
6.2	**Talent impact**	45.30	18
	Innovation		
6.2.1	Innovation output	42.10	40
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	82.43	3
6.2.3	New business density	n/a	n/a
	High-value exports		
6.2.4	Sophisticated exports	11.35	90

TUNISIA

Upper Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **65**

Population (millions)	**10.89**
GDP per capita (PPP$)	**11,092**
GDP (US$ billions)	**47.13**
GTCI Score	**39.11**
GTCI Score (Income Group Average)	**40.84**



	VARIABLE	SCORE	RANK
1	**Enablers**	44.07	79
1.1	**Regulatory landscape**	42.20	73
	Government efficiency		
1.1.1	Government effectiveness	36.12	55
1.1.2	Business-government relations	47.30	59
1.1.3	Political stability	47.90	74
	FDI climate		
1.1.4	Starting a foreign business	37.50	28
1.2	**Market landscape**	40.37	58
	Competition climate		
1.2.1	Intensity of local competition	64.42	61
	Innovation climate		
1.2.2	Venture capital deals	2.03	41
1.2.3	Firm-level technology absorption	61.53	50
1.2.4	R&D expenditure	24.50	33
	Connectivity		
1.2.5	ICT access	33.15	70
	Ease of doing business		
1.2.6	Ease of doing business	56.60	41
1.3	**Business landscape**	49.62	81
	Labour market flexibility		
1.3.1	Difficulty of hiring	83.33	39
1.3.2	Difficulty of redundancy	20.00	91
1.3.3	Labour-employer cooperation	47.20	78
	Ownership and governance		
1.3.4	Reliance on professional management	47.94	67
2	**Attract**	41.31	69
2.1	**External openness**	32.31	66
	Industrial openness		
2.1.1	FDI inflow	33.61	29
2.1.2	FDI and technology transfer	60.46	53
2.1.3	Prevalence of foreign ownership	60.78	49
	Migration openness		
2.1.4	Male adult migrants	0.69	86
2.1.5	Female adult migrants	0.62	83
2.1.6	Brain gain	30.33	63
2.1.7	Brain drain	39.67	51
2.2	**Internal openness**	50.32	69
	Diversity		
2.2.1	Tolerance to minorities	26.08	87
2.2.2	Tolerance to immigrants	61.84	40
	Gender mobility		
2.2.3	Female graduates	61.67	54
2.2.4	Female-to-male earnings ratio	n/a	n/a
	Social mobility		
2.2.5	Social mobility	51.69	56
3	**Grow**	33.15	78
3.1	**Formal education**	14.69	78
	Education climate		
3.1.1	Vocational enrolment	28.69	49
3.1.2	Tertiary enrolment	32.17	60
	Internationalisation of education		
3.1.3	International student inflow	2.45	63
	Performance of education system		
3.1.4	Reading, maths and science scores	10.14	52
3.1.5	University ranking	0.00	63
3.2	**Lifelong learning**	49.08	58
	Further education		
3.2.1	Quality of management schools	55.17	49
3.2.2	Extent of staff training	42.99	77
	Continuous development		
3.2.3	Firms offering formal training	n/a	n/a

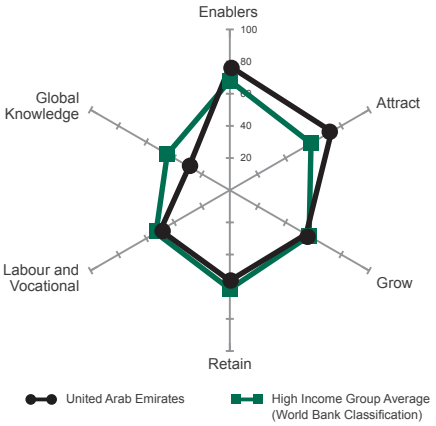
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	35.69	84
	Networks		
3.3.1	Use of virtual social networks	83.34	30
3.3.2	Number of LinkedIn users	15.95	45
	Learning through experience		
3.3.3	Willingness to delegate authority	39.68	72
	Voice		
3.3.4	Voicing concern to officials	3.79	88
4	**Retain**	45.32	57
4.1	**Sustainability**	37.62	56
	Social protection		
4.1.1	Pension system	65.32	40
	Taxation		
4.1.2	Extent and effect of taxation	44.52	41
	Pay		
4.1.3	Pay level – head of organisation	23.47	42
4.1.4	Pay level – head of information technology	17.16	45
4.2	**Lifestyle**	53.03	52
	Quality of life		
4.2.1	Environmental performance	53.79	44
4.2.2	Safety at night	51.43	52
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	18.69	60
4.2.5	Sanitation	88.21	56
5	**Labour and Vocational**	39.58	54
5.1	**Employable skills**	39.79	58
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	42.88	50
5.1.2	Secondary-educated population	31.64	54
	Technical professions		
5.1.3	Technicians and associate professionals	n/a	n/a
	Employment quality		
5.1.4	State of cluster development	44.87	56
5.2	**Labour productivity**	39.37	54
	Labour productivity		
5.2.1	Labour productivity per employee	14.83	57
	Pay and productivity		
5.2.2	Relationship of pay to productivity	41.79	76
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	61.49	18
6	**Global Knowledge**	31.21	46
6.1	**Higher skills and competencies**	28.57	50
	Educated workforce		
6.1.1	Tertiary-educated workforce	28.45	57
6.1.2	Tertiary-educated population	20.77	62
	Knowledge workers		
6.1.3	Professionals	n/a	n/a
6.1.4	Researchers	19.99	33
6.1.5	Legislators, senior officials and managers	n/a	n/a
	Research quality		
6.1.6	Quality of scientific research institutions	39.11	68
6.1.7	Scientific and technical journal articles	34.55	32
6.2	**Talent impact**	33.84	44
	Innovation		
6.2.1	Innovation output	36.32	50
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	55.41	20
6.2.3	New business density	7.07	47
	High-value exports		
6.2.4	Sophisticated exports	36.57	25

UNITED ARAB EMIRATES

High Income
Northern Africa and Western Asia

RANK
(out of 93) **22**

Population (millions)	**9.35**
GDP per capita (PPP$)	**58,041**
GDP (US$ billions)	**383.80**
GTCI Score	**56.70**
GTCI Score (Income Group Average)	**57.13**



	VARIABLE	SCORE	RANK
1	**Enablers**	77.07	11
1.1	**Regulatory landscape**	79.33	13
	Government efficiency		
1.1.1	Government effectiveness	69.16	24
1.1.2	Business-government relations	81.60	4
1.1.3	Political stability	87.24	24
	FDI climate		
1.1.4	Starting a foreign business	n/a	n/a
1.2	**Market landscape**	66.39	19
	Competition climate		
1.2.1	Intensity of local competition	78.49	13
	Innovation climate		
1.2.2	Venture capital deals	n/a	n/a
1.2.3	Firm-level technology absorption	84.63	4
1.2.4	R&D expenditure	10.06	52
	Connectivity		
1.2.5	ICT access	78.26	22
	Ease of doing business		
1.2.6	Ease of doing business	80.50	19
1.3	**Business landscape**	85.49	6
	Labour market flexibility		
1.3.1	Difficulty of hiring	100.00	1
1.3.2	Difficulty of redundancy	100.00	1
1.3.3	Labour-employer cooperation	70.74	14
	Ownership and governance		
1.3.4	Reliance on professional management	71.21	23
2	**Attract**	73.03	4
2.1	**External openness**	76.07	3
	Industrial openness		
2.1.1	FDI inflow	23.41	42
2.1.2	FDI and technology transfer	81.47	2
2.1.3	Prevalence of foreign ownership	75.45	15
	Migration openness		
2.1.4	Male adult migrants	100.00	1
2.1.5	Female adult migrants	100.00	1
2.1.6	Brain gain	n/a	n/a
2.1.7	Brain drain	n/a	n/a
2.2	**Internal openness**	69.99	21
	Diversity		
2.2.1	Tolerance to minorities	66.23	51
2.2.2	Tolerance to immigrants	92.41	8
	Gender mobility		
2.2.3	Female graduates	79.16	16
2.2.4	Female-to-male earnings ratio	30.95	78
	Social mobility		
2.2.5	Social mobility	81.19	11
3	**Grow**	54.78	24
3.1	**Formal education**	40.64	32
	Education climate		
3.1.1	Vocational enrolment	2.30	82
3.1.2	Tertiary enrolment	n/a	n/a
	Internationalisation of education		
3.1.3	International student inflow	100.00	1
	Performance of education system		
3.1.4	Reading, maths and science scores	31.19	40
3.1.5	University ranking	29.09	41
3.2	**Lifelong learning**	67.07	18
	Further education		
3.2.1	Quality of management schools	68.12	24
3.2.2	Extent of staff training	66.01	13
	Continuous development		
3.2.3	Firms offering formal training	n/a	n/a

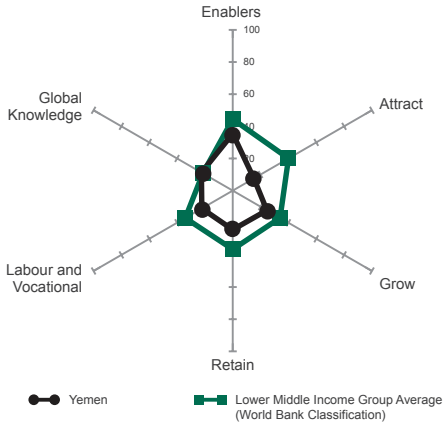
	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	56.62	28
	Networks		
3.3.1	Use of virtual social networks	89.18	10
3.3.2	Number of LinkedIn users	42.59	17
	Learning through experience		
3.3.3	Willingness to delegate authority	63.10	18
	Voice		
3.3.4	Voicing concern to officials	31.60	55
4	**Retain**	56.24	32
4.1	**Sustainability**	36.57	59
	Social protection		
4.1.1	Pension system	n/a	n/a
	Taxation		
4.1.2	Extent and effect of taxation	n/a	n/a
	Pay		
4.1.3	Pay level – head of organisation	32.64	26
4.1.4	Pay level – head of information technology	40.50	14
4.2	**Lifestyle**	75.92	15
	Quality of life		
4.2.1	Environmental performance	76.22	25
4.2.2	Safety at night	100.00	1
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	30.34	52
4.2.5	Sanitation	97.11	38
5	**Labour and Vocational**	49.83	31
5.1	**Employable skills**	51.82	40
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	28.64	64
5.1.2	Secondary-educated population	35.26	48
	Technical professions		
5.1.3	Technicians and associate professionals	69.15	21
	Employment quality		
5.1.4	State of cluster development	74.23	2
5.2	**Labour productivity**	47.85	28
	Labour productivity		
5.2.1	Labour productivity per employee	74.69	2
	Pay and productivity		
5.2.2	Relationship of pay to productivity	66.49	5
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	2.37	92
6	**Global Knowledge**	29.28	52
6.1	**Higher skills and competencies**	34.14	38
	Educated workforce		
6.1.1	Tertiary-educated workforce	23.74	66
6.1.2	Tertiary-educated population	29.87	48
	Knowledge workers		
6.1.3	Professionals	42.38	33
6.1.4	Researchers	n/a	n/a
6.1.5	Legislators, senior officials and managers	41.81	23
	Research quality		
6.1.6	Quality of scientific research institutions	63.05	32
6.1.7	Scientific and technical journal articles	3.99	73
6.2	**Talent impact**	24.42	60
	Innovation		
6.2.1	Innovation output	29.11	66
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	62.16	15
6.2.3	New business density	6.40	48
	High-value exports		
6.2.4	Sophisticated exports	0.00	93

YEMEN

Lower Middle Income
Northern Africa and Western Asia

RANK
(out of 93) **93**

Population (millions)	**24.41**
GDP per capita (PPP$)	**3,958**
GDP (US$ billions)	**35.95**
GTCI Score	**24.03**
GTCI Score (Income Group Average)	**35.11**



	VARIABLE	SCORE	RANK
1	**Enablers**	35.41	89
1.1	**Regulatory landscape**	14.64	93
	Government efficiency		
1.1.1	Government effectiveness	0.00	93
1.1.2	Business-government relations	37.79	83
1.1.3	Political stability	6.15	92
	FDI climate		
1.1.4	Starting a foreign business	n/a	n/a
1.2	**Market landscape**	31.02	82
	Competition climate		
1.2.1	Intensity of local competition	55.96	81
	Innovation climate		
1.2.2	Venture capital deals	n/a	n/a
1.2.3	Firm-level technology absorption	51.25	84
1.2.4	R&D expenditure	n/a	n/a
	Connectivity		
1.2.5	ICT access	8.19	88
	Ease of doing business		
1.2.6	Ease of doing business	8.70	85
1.3	**Business landscape**	60.57	58
	Labour market flexibility		
1.3.1	Difficulty of hiring	89.00	22
1.3.2	Difficulty of redundancy	70.00	47
1.3.3	Labour-employer cooperation	52.67	57
	Ownership and governance		
1.3.4	Reliance on professional management	30.63	92
2	**Attract**	15.18	93
2.1	**External openness**	18.01	93
	Industrial openness		
2.1.1	FDI inflow	11.99	74
2.1.2	FDI and technology transfer	41.29	91
2.1.3	Prevalence of foreign ownership	28.79	92
	Migration openness		
2.1.4	Male adult migrants	4.02	67
2.1.5	Female adult migrants	2.48	70
2.1.6	Brain gain	19.50	81
2.1.7	Brain drain	18.00	85
2.2	**Internal openness**	12.34	93
	Diversity		
2.2.1	Tolerance to minorities	0.00	91
2.2.2	Tolerance to immigrants	9.41	86
	Gender mobility		
2.2.3	Female graduates	1.60	79
2.2.4	Female-to-male earnings ratio	13.10	84
	Social mobility		
2.2.5	Social mobility	37.60	86
3	**Grow**	24.54	90
3.1	**Formal education**	6.87	88
	Education climate		
3.1.1	Vocational enrolment	1.50	85
3.1.2	Tertiary enrolment	6.41	83
	Internationalisation of education		
3.1.3	International student inflow	19.59	28
	Performance of education system		
3.1.4	Reading, maths and science scores	n/a	n/a
3.1.5	University ranking	0.00	63
3.2	**Lifelong learning**	24.16	93
	Further education		
3.2.1	Quality of management schools	30.25	91
3.2.2	Extent of staff training	38.48	83
	Continuous development		
3.2.3	Firms offering formal training	3.75	66

	VARIABLE	SCORE	RANK
3.3	**Access to growth opportunities**	42.58	64
	Networks		
3.3.1	Use of virtual social networks	60.58	88
3.3.2	Number of LinkedIn users	n/a	n/a
	Learning through experience		
3.3.3	Willingness to delegate authority	46.54	45
	Voice		
3.3.4	Voicing concern to officials	20.62	68
4	**Retain**	24.30	88
4.1	**Sustainability**	20.07	92
	Social protection		
4.1.1	Pension system	10.04	77
	Taxation		
4.1.2	Extent and effect of taxation	30.10	75
	Pay		
4.1.3	Pay level – head of organisation	n/a	n/a
4.1.4	Pay level – head of information technology	n/a	n/a
4.2	**Lifestyle**	28.53	85
	Quality of life		
4.2.1	Environmental performance	7.33	91
4.2.2	Safety at night	59.29	42
4.2.3	Female part-time workers	n/a	n/a
	Access to services		
4.2.4	Physician density	1.84	84
4.2.5	Sanitation	45.66	81
5	**Labour and Vocational**	22.22	92
5.1	**Employable skills**	23.66	86
	Vocationally trained workforce		
5.1.1	Secondary-educated workforce	17.06	76
5.1.2	Secondary-educated population	n/a	n/a
	Technical professions		
5.1.3	Technicians and associate professionals	n/a	n/a
	Employment quality		
5.1.4	State of cluster development	30.26	88
5.2	**Labour productivity**	20.78	92
	Labour productivity		
5.2.1	Labour productivity per employee	4.86	77
	Pay and productivity		
5.2.2	Relationship of pay to productivity	44.10	69
	Mid-value exports		
5.2.3	Vocational skill-intensive exports	13.39	91
6	**Global Knowledge**	22.50	66
6.1	**Higher skills and competencies**	16.42	79
	Educated workforce		
6.1.1	Tertiary-educated workforce	9.76	78
6.1.2	Tertiary-educated population	n/a	n/a
	Knowledge workers		
6.1.3	Professionals	40.55	37
6.1.4	Researchers	n/a	n/a
6.1.5	Legislators, senior officials and managers	14.12	67
	Research quality		
6.1.6	Quality of scientific research institutions	16.05	93
6.1.7	Scientific and technical journal articles	1.64	84
6.2	**Talent impact**	28.59	53
	Innovation		
6.2.1	Innovation output	0.35	92
	Entrepreneurship		
6.2.2	New product entrepreneurial activity	74.32	5
6.2.3	New business density	n/a	n/a
	High-value exports		
6.2.4	Sophisticated exports	11.09	91

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