FII INSTITUTE
Future Investment Initiative Institute
Impact on Humanity

GLOBAL FUTURE OF WORK REPORT:

Series 1

PREPARING LABOR MARKETS IN MENA FOR A NEW TECHNOLOGICAL ERA

October 22, 2024

CONTENTS

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The Future Investment Initiative (FII) Institute is a global non-profit foundation, driven by data, with an investment arm and one agenda: Impact on Humanity.

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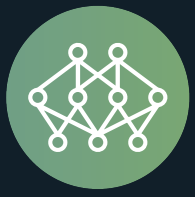
Bringing together the brightest minds and most promising solutions to serve humanity

OUR MISSION
Creating a purposeful present and a promising future

OUR PILLARS

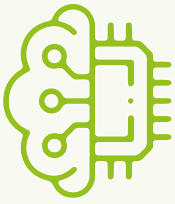
THINK
Laboratory of ideas



XCHANGE
Curator of platforms

ACT
Investment arm

OUR FOCUS AREAS



AI & ROBOTICS

EDUCATION

HEALTHCARE

SUSTAINABILITY

Executive summary

AN ARRAY OF CHALLENGES

Countries worldwide face an array of productivity and labor market challenges. Transformational technologies play out in various ways across different economies, based on demographics, competitiveness, and the ability to adopt technologies rapidly, among other factors. There are some notable differences between Global North and Global South.

179 M

additional working-age population than jobs created in Global South between 2012 and 2022

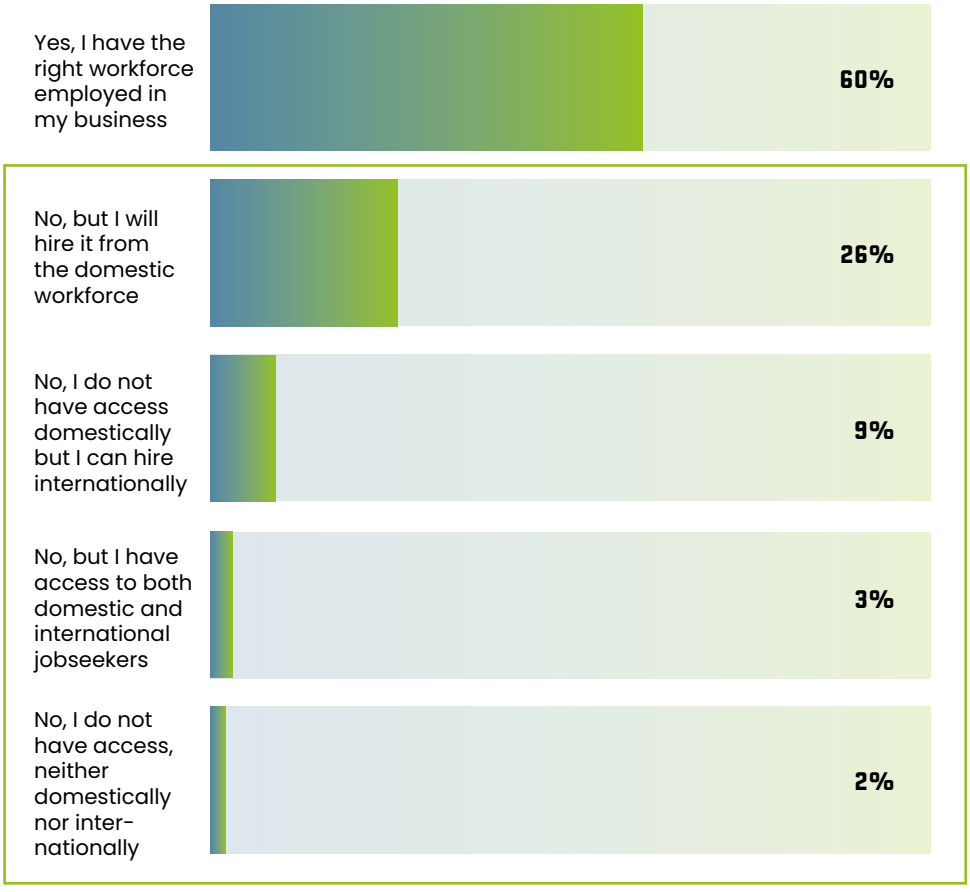
66 M

more jobs created than the growth in working-age population in Global North between 2012 and 2022

For the Global North, aging populations and a decelerating growth in the labor force are leading to labor shortages and a slow-growing workforce. Productivity growth could be the only viable path to sustaining economic expansion. But productivity growth has lost momentum, especially since the 2008 global financial crisis, and has been stagnant since 2017.

In the Global South, countries are contending with sluggish productivity growth and face challenges in creating enough jobs, especially for a younger, growing workforce, although conditions vary considerably by country.

In both North and South, innovation and technology adoption are critical to strengthening competitiveness and spurring both economic growth and job creation. Automation holds the promise of significant productivity gains, which could be pivotal in driving economic growth and creating new jobs. But reaping the benefits will require addressing the digital divide and investing in skills development.



SOURCE: PIF FUTURE OF WORK REPORT SURVEY, 2024

INTERTWINED ISSUES

MENA countries have intertwined challenges: embrace tech adoption or risk falling further behind. MENA countries face the same major labor market challenges of high unemployment and low labor participation as other Global South countries, but in sometimes more exacerbated form.

14 MENA countries analyzed

333m people within them

215m people of working age (15-64)

49% of working age population do not actively participate in economy

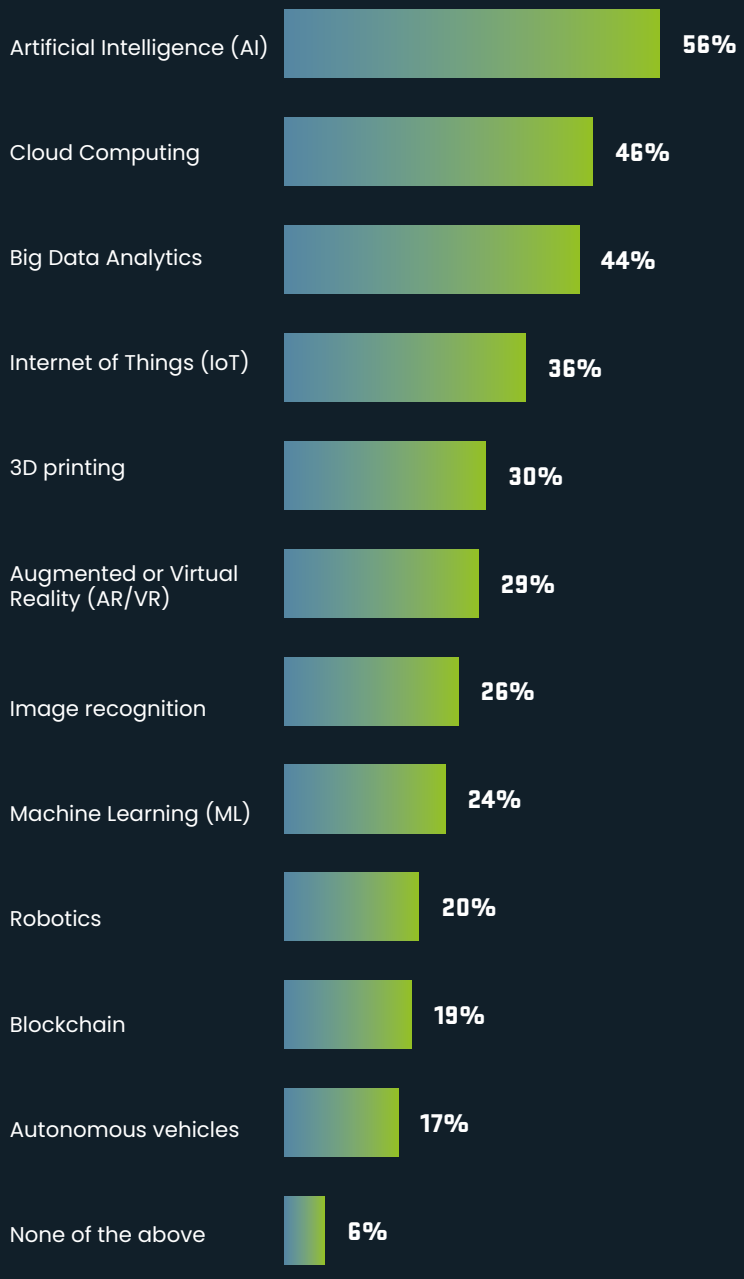
10m in labor force currently unemployed

24% youth unemployment rate

The region is marked by low job creation, a lack of competitiveness, limited productive industries including a dearth of leading global firms, and a lagging education and training system.

MENA has the highest percentage of non-employed individuals out of the total working-age population, the largest proportion of youth that are not in education, employment or training (NEET), and the lowest percentage of tertiary school enrolment. These factors exacerbate the region's ability to develop a skilled workforce.

DOES YOUR COMPANY CURRENTLY UTILIZE ANY OF THESE ADVANCED TECHNOLOGIES? (SELECT MULTIPLE)



SOURCE: PIF FUTURE OF WORK REPORT SURVEY, 2024

The potential path to success

From global best practice, we identify four levers that can help businesses in MENA countries find workers with requisite skills. These are:

FUNDING

Technological transformation requires investment in the workforce as well as in innovation. Adequate capital and financial support need to be available to support education, training and capacity-building efforts essential for equipping people with the skills needed for future job markets.

SKILLING AND CAPABILITY BUILDING

As technological advancements reshape industries, there is a growing need for skill development. Skilling efforts not only equip individuals with the abilities required for emerging technologies, but also enable them to capture new job opportunities created by these advancements, helping to offset job losses in traditional sectors. A range of initiatives in education, training, upskilling and reskilling are needed prepare the workforce for the demands of the evolving market.

MONITORING, ADVOCACY AND POLICY MAKING

Policies and frameworks are needed to foster technological innovation while addressing the evolving needs of society. Governments play a key role in enacting relevant policies, often aligning these efforts closely with industry demands to ensure that emerging technologies are integrated into the economy through practical, hands-on training programs.

JOB MATCHING

As technology transforms the nature of work, aligning the skills of the workforce with market needs becomes increasingly critical. Systems and platforms will need to be created that facilitate effective job matching, ensuring that individuals are positioned in roles that best utilize their skills and qualifications, and that employers have access to the suitable skills they require.

DATA AT A GLANCE

Overview of themes with the most interesting datapoints

MACRO TRENDS

Long-term shifts shaping broader economy, society, and industries

~50% View the "Use of Advanced Tech" as a major trend affecting their businesses

55% Report that the impact of major trends (incl. advanced tech) has been "Significant or Disruptive"

~60% Rank "Operational Cost" as the most impacted part of their business

TECH ADOPTION

Current pace of adoption and the anticipated impact on jobs

56% Have adopted and are using "AI" in their businesses

~ 80% Plan to "Significantly" scale advanced technologies in the next five years

70% State that jobs will be "Created or Transformed" over the next decade

WORKFORCE AND SKILLS

Competence of existing workforce and its ability to adopt tech

40% Report workforce shortages, with the most significant gaps in tech-based roles

65% Identify advanced tech as the most relevant occupation type in the coming decade

71% Have a quota for women employees at "the Company Level"

YOUTH

Perception of youth and its skills level as they join the workforce

43% Express concern that college and university graduates are not job-ready

46% Report that youth training in tech-related skills is insufficient

73% State "Advanced IT Skills and Programming" to be the top tech skill youth needs to learn

KEY FINDINGS

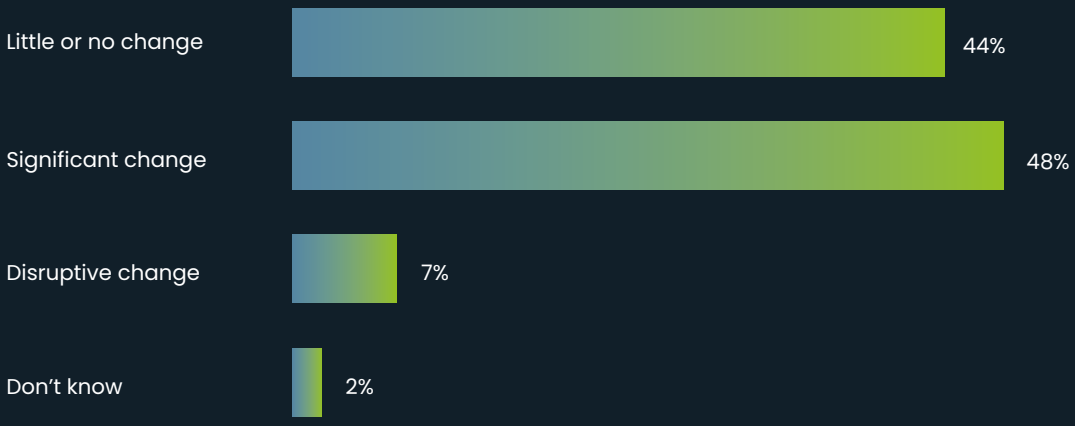
Top trends affecting business, extent of their impact, and the most affected business areas

Preliminary

2.1. WHAT ARE THE TOP THREE TRENDS AFFECTING YOUR BUSINESS? (SELECT TOP THREE)

SOURCE: PIF FUTURE OF WORK REPORT SURVEY, 2024

2.2. HOW HAS YOUR COMPANY BEEN AFFECTED BY THESE GLOBAL DISRUPTIONS? (SELECT ONE)



2.3. WHAT PART OF YOUR BUSINESS HAS MOSTLY BEEN AFFECTED? (SELECT TOP TWO)

Half of the surveyed businesses report "Use of advanced technology" as a major trend impacting the businesses of MENA

LABOR MARKETS AND THE ROLE OF PRODUCTIVITY

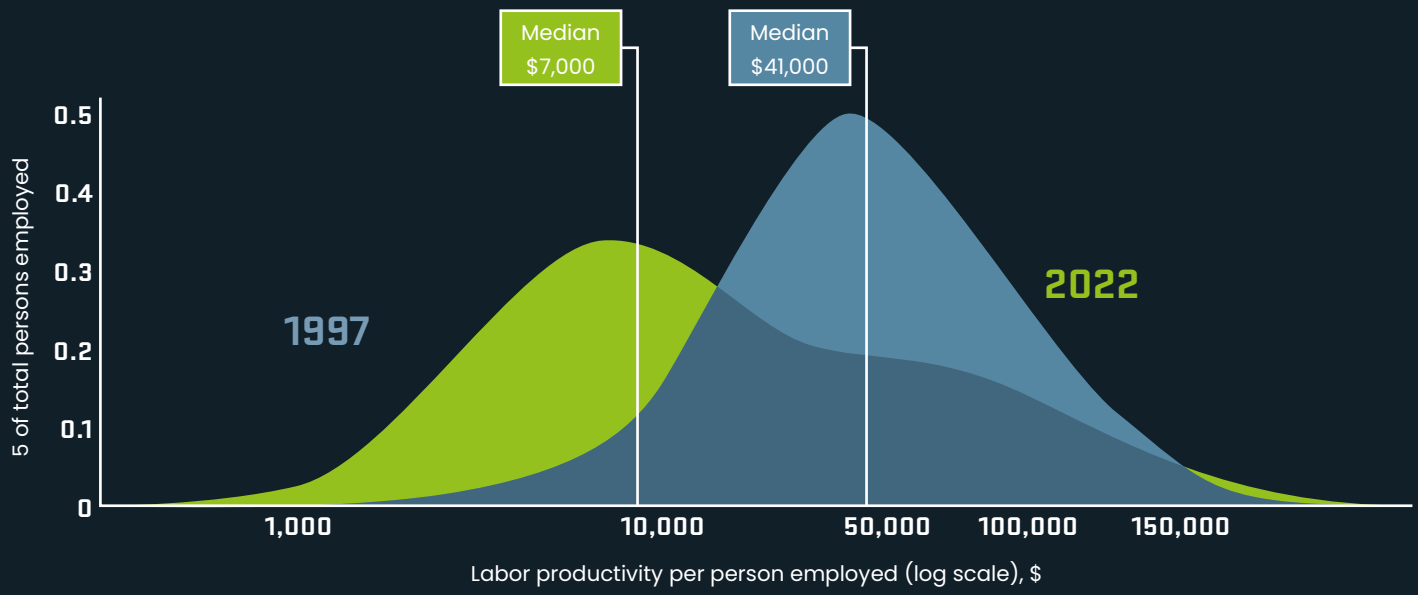
A new wave of technology – driven by generative AI and automation but also including many other technology types, from precision fermentation to advanced analytics – has taken center stage, as business and policy leaders race to unlock its potential. These technologies offer the potential to reverse the trend of stagnant productivity growth that has marked the past decade and longer.

Just how these transformational technologies play out across different economies around the world depends on specific country dynamics, based on demographics, competitiveness and the ability to adopt technologies rapidly, among other factors.

Global productivity has risen over the past 25 years, with median productivity surging approximately sixfold. But growth has slowed

GLOBAL PRODUCTIVITY HAS RISEN OVER THE PAST 25 YEARS WITH MEDIAN PRODUCTIVITY SURGING APPROXIMATELY SIXFOLD, MARKING A SUCCESS STORY IN OVERALL PRODUCTIVITY IMPROVEMENTS

Productivity level per country (GDP per employee, 2022 international dollars, PPP)



SOURCE: PIF

A TALE OF TWO HALVES

In recent years, the Global North has invested in tech adoption, considered one of the biggest forces for increasing productivity and spurring the creation of new businesses and stronger economic growth, thereby creating more jobs than it displaces. However, the impact is yet to be seen outside the information and communication technology (ICT) sector.

- 2.7% annual productivity growth for Global North between 1997–02
- 2.2% annual productivity growth for Global North between 2002-07
- 1.2% annual productivity growth for Global North between 2012-17
- 1.2% annual productivity growth for Global North between 2017-22

China and India have significantly contributed to most of the productivity growth in the Global South in the past two decades, consistently accounting for more than half of the Global South's productivity growth. This contribution stems from the significant investments these countries have made in urbanization, infrastructure, businesses and manufacturing facilities. By doing so, China and India have multiplied their capital stock per worker – that is, the level of capital each worker has access to in order to produce goods or services – by factors of eight and four, respectively.

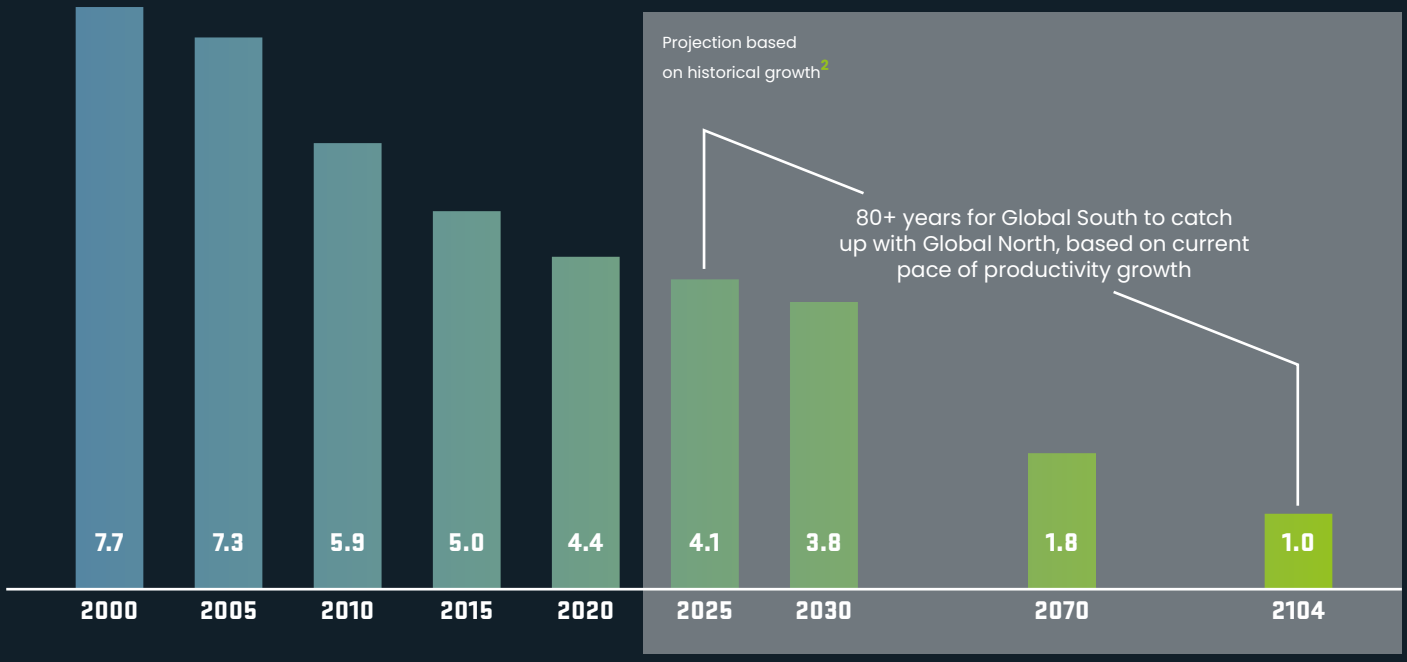
- 1.7% annual productivity growth for Global South between 1997-02
- 5.8% annual productivity growth for Global South between 2002-07
- 4.1% annual productivity growth for Global South between 2012-17
- 3% annual productivity growth for Global South between 2017-22

CATCHING UP?

From 2002 to 2012, productivity growth in the Global South, both including and excluding India and China, was higher than in the Global North, showing signs of convergence. However, between 2017-2022, this trend has reversed when India and China are excluded. Given the current pace of productivity growth, it could take over 80 years for the Global South to catch up with the Global North. However, without India and China, the convergence may never be achieved, as the Global South is already starting from a lower productivity level and, excluding India and China, the productivity growth is lower than that of the Global North.

GIVEN THE CURRENT PACE OF PRODUCTIVITY GROWTH, IT COULD TAKE OVER 80 YEARS FOR THE GLOBAL SOUTH TO CATCH UP WITH THE GLOBAL NORTH

Labor productivity ratio of Global North and Global South[1]



SOURCE: "TOTAL ECONOMY DATABASE, "OUTPUT, LABOR AND LABOR PRODUCTIVITY," THE CONFERENCE BOARD, 2023"

1 LABOR PRODUCTIVITY IS MEASURED AS THE AGGREGATE REAL GDP OVER THE TOTAL HOURS WORKED IN THE GIVEN REGION AT A SPECIFIED YEAR; THE LABOR PRODUCTIVITY RATIO IS CALCULATED AS LABOR PRODUCTIVITY LEVEL IN GLOBAL NORTH DIVIDED BY LEVEL IN GLOBAL SOUTH.
2 THE PROJECTED GROWTH IS BASED ON 5-YEAR CAGR OF PRODUCTIVITY BETWEEN 2017 AND 2022.
3 IN AUSTRALIA, CANADA, GERMANY, THE UNITED KINGDOM AND THE UNITED STATES.
4 "HOLDING UNEMPLOYMENT RATE CONSTANT."

A TALE OF TWO MARKETS

Labor markets are a tale of two very different trajectories. In the Global North, decelerating population growth and aging demographics are leading to labor shortages and a slow-growing workforce. While immigration could alleviate some of these pressures, it has not been sufficient to structurally reverse the trend.

1.5–3x

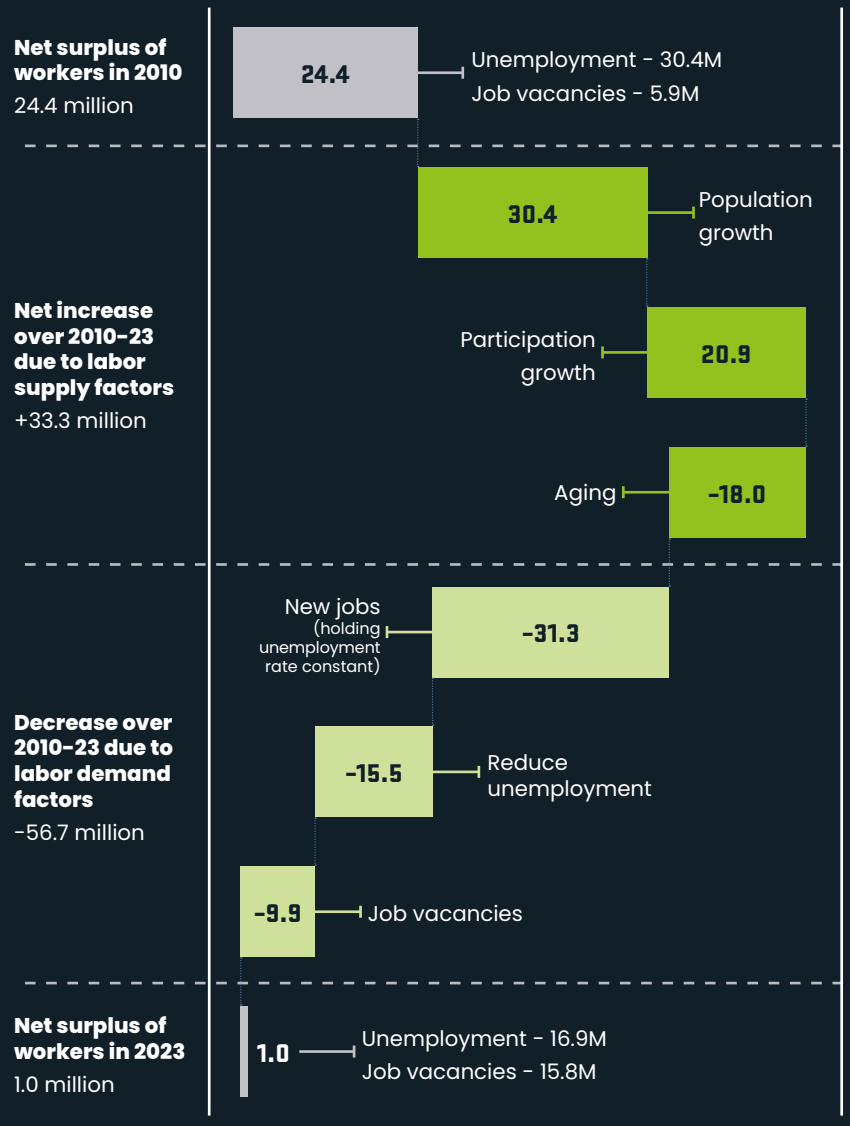
required increase in immigration levels to cancel out population decline since 2015[3]

With fewer workers available, countries must find alternative ways to sustain economic growth. In this context, accelerating productivity growth becomes essential. By boosting productivity, economies can mitigate labor shortages and ensure continued development despite demographic pressures.

While labor supply in the Global North grew in the last decade, its pace slowed notably due to an aging population and lower immigration, which have been partially compensated by a growing participation rate.

Even as labor supply grew in the last decade, its pace has slowed notably due to an aging population and lower immigration, which have been partially compensated by a growing participation rate

CHANGE IN NUMBER OF SURPLUS WORKERS ACROSS 8 ADVANCED ECONOMIES,[4] 2010–23, million



SOURCE: AUSTRALIAN BUREAU OF STATISTICS; DARES (FRANCE); EMPLOYMENT DATA FROM INTERNATIONAL LABOUR ORGANIZATION; JOB OPENINGS AND LABOR TURNOVER SURVEY, US BUREAU OF LABOR STATISTICS; MINISTRY OF HEALTH, LABOUR AND WELFARE, JAPAN; POPULATION DATA FROM UN POPULATION PROSPECTS; STATISTICS CANADA; UK OFFICE FOR NATIONAL STATISTICS; VACANCY DATA FROM EUROSTAT; MCKINSEY GLOBAL INSTITUTE ANALYSIS"

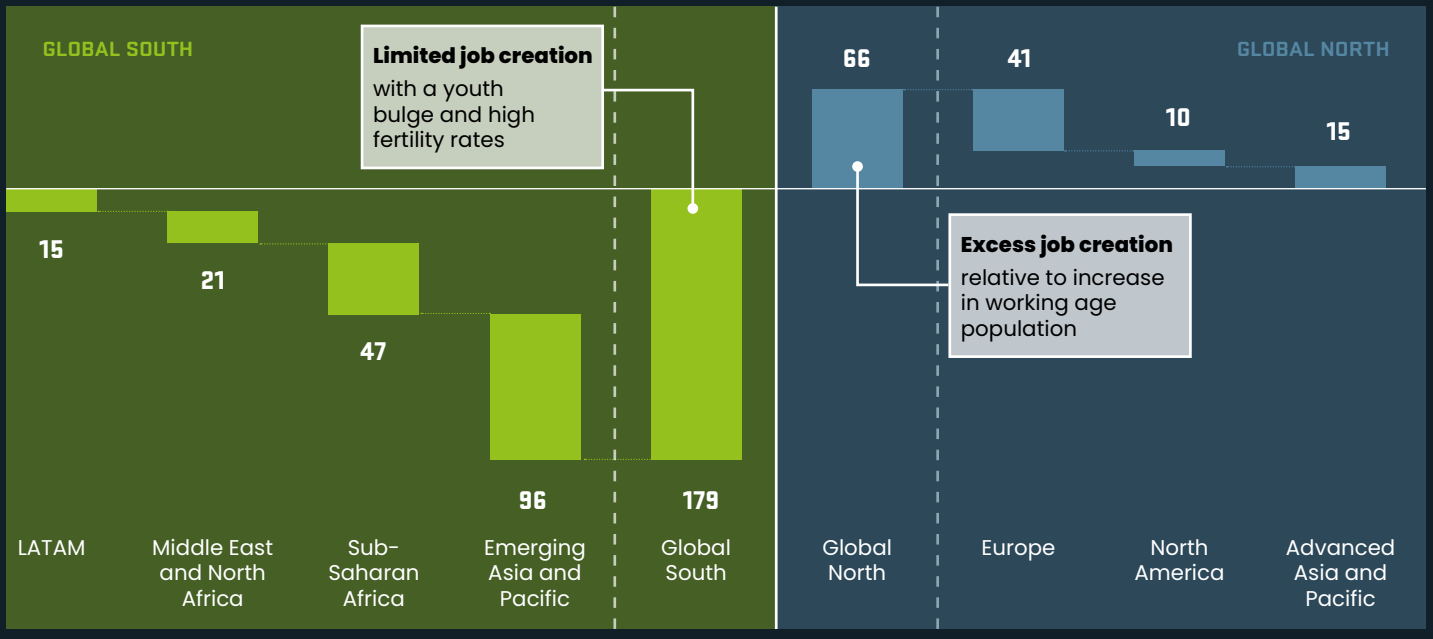
THE 8 COUNTRIES ARE AUSTRALIA, CANADA, FRANCE, GERMANY, ITALY, JAPAN, UK AND US. CANADA DATA SPANS 2015–23.

LOOKING SOUTHWARDS

In the Global South, by contrast, population growth has expanded the labor force, but job creation has not kept pace in many countries. Young people in the Global South are especially affected by the insufficient job creation, with millions neither employed nor in education or training. When job opportunities are scarce, employers tend to seek more experienced workers.

Moreover, the Global South is unable to create enough jobs to cater to its increasing working-age population, while the Global North has excess job creation

DIFFERENCE BETWEEN JOBS CREATED AND INCREASE IN THE WORKING AGE POPULATION, 2012–2022,[1] millions



SOURCE: "INTERNATIONAL LABOUR ORGANIZATION; WORLD BANK"

1 ALL REGIONS ARE AGGREGATED BASED ON COMPARABLE COUNTRY SET WITH FULL RECORDS FOR BOTH EMPLOYMENT NUMBER AND WORKING-AGE POPULATION FOR 2012 AND 2022. THE EXHIBIT CONSIDERS 112 COUNTRIES: 42 EUROPEAN COUNTRIES, 17 EMERGING ASIA COUNTRIES (INCLUDING CHINA AND INDIA), 17 SUB-SAHARAN AFRICAN COUNTRIES, 15 LATIN AMERICAN COUNTRIES, 14 MIDDLE EAST AND NORTH AFRICA COUNTRIES, 5 ADVANCED ASIAN AND PACIFIC COUNTRIES, AND 2 NORTH AMERICAN COUNTRIES."

Over the next decade, as demographic shifts in the Global South play out, the surplus of labor supply could ease. The Global South has experienced decreasing fertility rate and increasing life expectancy.

2.9
births per woman (2012)

2.5
births per woman (2022)

63
average life expectancy (2002)

69
average life expectancy (2022)

SOURCE: PIF

In this context, the Global South needs to identify new competitive edges to drive future economic growth and job creation in the next decade and keep pace with the Global North. Entrepreneurship, a key contributor to economic growth and job creation, remains relatively scarce in the Global South compared to the Global North. Technology adoption could help drive future economic growth and job creation and attract foreign direct investment.

TECH TRANSFORMATION

Technology has always been a transformative force, from steam engines to assembly lines, and more recently the digital revolution. Today, technological advances, including the increasing adoption of automation and artificial intelligence, are influencing global markets. These technologies present significant opportunities to boost growth and increase efficiency, but they also pose challenges that affect the Global North and South in different ways.

THE TECH REVOLUTION PRESENTS POTENTIAL RISKS, AFFECTING THE GLOBAL NORTH AND GLOBAL SOUTH IN DIFFERENT WAYS

	Context		Potential risk of the tech revolution	
	Labor markets	Technology positioning	Job displacement	Competitiveness loss
Global North	Tightness	Developer	Limited risk due to labor market tightness	Low risk due to higher productivity levels compared to the Global South, providing buffer
Global South	Slackness	Follower	Elevated risk due to significant challenges in job creation	High risk due to lower productivity levels compared to the Global North, making it harder to stay competitive

All eyes on AI

In the Global North, AI and automation may boost business and the economy, with AI adoption rates in Europe and the United States forecast to reach 30% by 2030. This would change job demands from data collection and processing to more expertise-driven and human-centric tasks, as well as increase demand for tech, healthcare and managerial roles. The need for technology skills is projected to rise by 25%–30%.

In the Global South, technological advancements tend to be slower for two major reasons. First, resource constraints in most Global South countries limit their ability to invest in R&D or adopt emerging technologies developed in the Global North. Second, Global South businesses face little incentive to adopt automation technologies due to the low cost of labor, which reduces the opportunity cost of not automating in the short term.

AI PREPAREDNESS SCORE (out of 1)

0.77	United States
0.64	European Union
0.52	Asia-Pacific
0.47	Global average
0.45	MENA
0.43	Latin America
0.34	Sub-Saharan Africa

SOURCE: IMF

MEGATRENDS

Other megatrends beyond technological progress are affecting labour markets worldwide. These can be categorized into three themes: structural trends, infrastructure priorities, and COVID-induced shifts.

STRUCTURAL TRENDS INCLUDE:

- **AGING POPULATIONS:** The share of the population over 65 years globally is projected to grow by 7% between 2020 and 2050, potentially leading to a rise in the demand for healthcare workers.

- **INCREASE IN FEMALE LABOR PARTICIPATION:** Most regions are seeing growth in female labor participation. Increases between 1991 and 2023 by region include: 6% in the European Union, 1.6% in MENA, 8.5% in Latin America, and 0.7% in the United States.

INFRASTRUCTURE PRIORITIES INCLUDE:

- **THE SHIFT TOWARD MORE GREEN ENERGY:** This has the potential to affect the labor market, including the creation of new jobs in low-carbon innovative industries. This trend is more pronounced in the Global North.

- **RISING DEMAND FOR SEMICONDUCTORS:** The global market for semiconductors could reach about $1 trillion by 2030, which could contribute to the creation of many highly skilled jobs.

COVID-INDUCED SHIFTS INCLUDE:

- **REMOTE WORK** has reshaped the employment landscape, improving job matching, offering greater flexibility and access to a broader pool of talent. This has been more pronounced in the Global North. In 2023, about 22% of employees were working either fully or partially remotely in the United States and the European Union.

- **THE GROWTH OF E-COMMERCE.** This trend has hit both the Global North and South. In the European Union and the United States, retail e-commerce sales grew at an annual average rate of 6% and 7.5% respectively between 2018 and 2023. In the Global South, e-commerce is growing even faster. Retail e-commerce sales in the same period in the Middle East and Africa, Asia and Pacific, and Latin America saw growth of 10%, 7.5% and 12% respectively.

1 Human capital index is based on the nonemployed working-age population and World Bank's Human Capital Index. Human capital (youth-oriented) index is based on the nonemployed youth population (15–24). Political stability index is built based on the World Bank's Political Stability Index. Productivity and attractiveness index is labor productivity (output per hour worked) and share of exports as a percentage of GDP. Resource dependence index is based on the share of oil rents of GDP. Tech preparedness index is built based on the International Monetary Fund's AI Preparedness Index and the Digital Infrastructure Index"

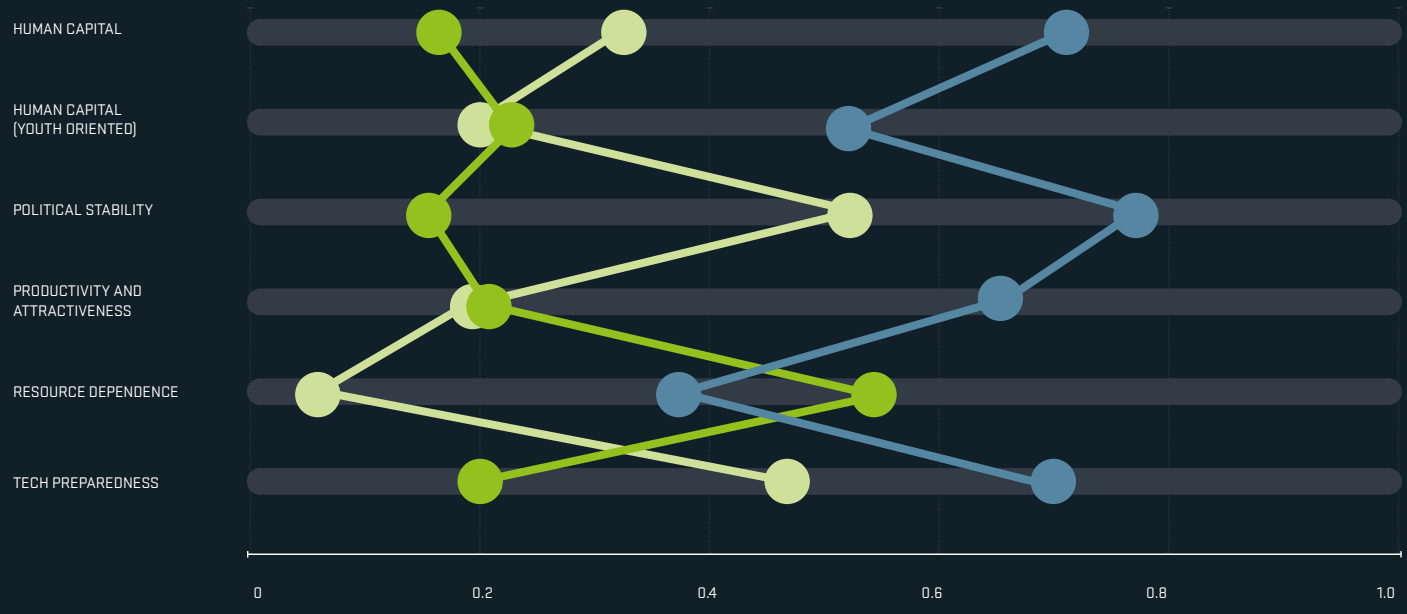
2 The data was normalised by using a min-max scaling technique at the country level and taking the simple average of countries based on the clustering. This approach adjusts the original values to a standardized range between 0 and 1, ensuring the minimum value in the data set corresponds to 0 and the maximum value corresponds to 1"

MENA'S INTERTWINED CHALLENGES

MENA countries face the same major labor market challenges as other Global South countries, and in some cases in more exacerbated form. Unemployment is high and labor participation low, particularly among youth. This is a result of low job creation, lack of competitiveness, limited productive industries including a dearth of leading global firms, and a lagging education and training system.

But MENA is far from a homogenous region.

THE SIX KEY FACTORS[1] THAT DEFINE MENA REGIONS, NORMALIZED[2] VALUE (RANGE FROM 0 TO 1)



	ADDITIONAL WORKING-AGE POPULATION BETWEEN 2012-2022	ADDITIONAL JOBS CREATED BETWEEN 2012-2022
LEADING REGIONAL ECONOMIES	7m	6m
EMERGING ECONOMIES	21m	6m
CHALLENGED ECONOMIES	7m	2m

SOURCE: INTERNATIONAL LABOUR ORGANIZATION; INTERNATIONAL MONETARY FUND; THE CONFERENCE BOARD TOTAL ECONOMY DATABASE; WORLD BANK

ICONS: POP_JOP / GETTY IMAGES

UNTAPPED HUMAN CAPITAL

Almost half of the MENA working-age population – 49% – does not actively participate in the economy. The labor force – that is, people able and willing to work – totals less than 110 million. Moreover, around 10 million of those in the labor force, about 9% of the total, are currently unemployed.

of working-age population in the MENA region was not employed in 2022

of those aged 25–64 are not employed

of those aged 15–24 are not in education, employment or training

MENA HAS A LARGE AND INACTIVE WORKFORCE

	SHARE OF NON-EMPLOYED INDIVIDUALS[1] OUT OF TOTAL WORKING-AGE POPULATION (25-64), % 2022	p.p. change between 2012-2022	SHARE OF YOUTH[2] NOT IN EMPLOYMENT, EDUCATION OR TRAINING, % 2022	p.p. change between 2012-2022
NORTH AMERICA	24%	-9,0	11%	-2,5
EUROPE	23%	-6,5	15%	-0,7
LATIN AMERICA	29%	+0,3	20%	0,0
ASIA	32%	+0,5	17%	-2,5
MENA	49%	+0,6	32%	+1,9

~5 out 10
of working-age individuals are unemployed or inactive in MENA[1]

>3 out 10
Working-age youth are non-employed (inactive or unemployed) nor studying in MENA

100m
women in MENA

47%
proportion of working-age population

22m
women in MENA participate in the labor market

22%
participation rate is the lowest in the world

70%
male participation in MENA labor market

1 NON-EMPLOYED HUMAN CAPITAL IS MEASURED BY THE SUM OF INACTIVE AND UNEMPLOYED WORKING-AGE INDIVIDUALS; HENCE, INCREASE OF SHARE IN NON-EMPLOYED WORKFORCE OVER A SPECIFIC PERIOD IS WORSE OFF FOR THE ECONOMY AND VICE VERSA. THE NUMBER FOR MENA IS BASED ON SEVEN MENA COUNTRIES (KSA, QATAR, MOROCCO, TUNISIA, ALGERIA, EGYPT, IRAQ), COVERING 80%+ OF THE TOTAL 25–64 POPULATION. FOR IRAQ AND ALGERIA, DUE TO LIMITED DATA AVAILABILITY, 2021 AND 2019 NUMBERS WERE USED RESPECTIVELY INSTEAD OF 2022.
2 YOUTH IS DEFINED AS INDIVIDUALS BETWEEN AGE 15–24. **SOURCE**: INTERNATIONAL LABOUR ORGANIZATION.
3 USING NUMBER OF EMPLOYED AND UNEMPLOYED POPULATION FROM Q1 2024."

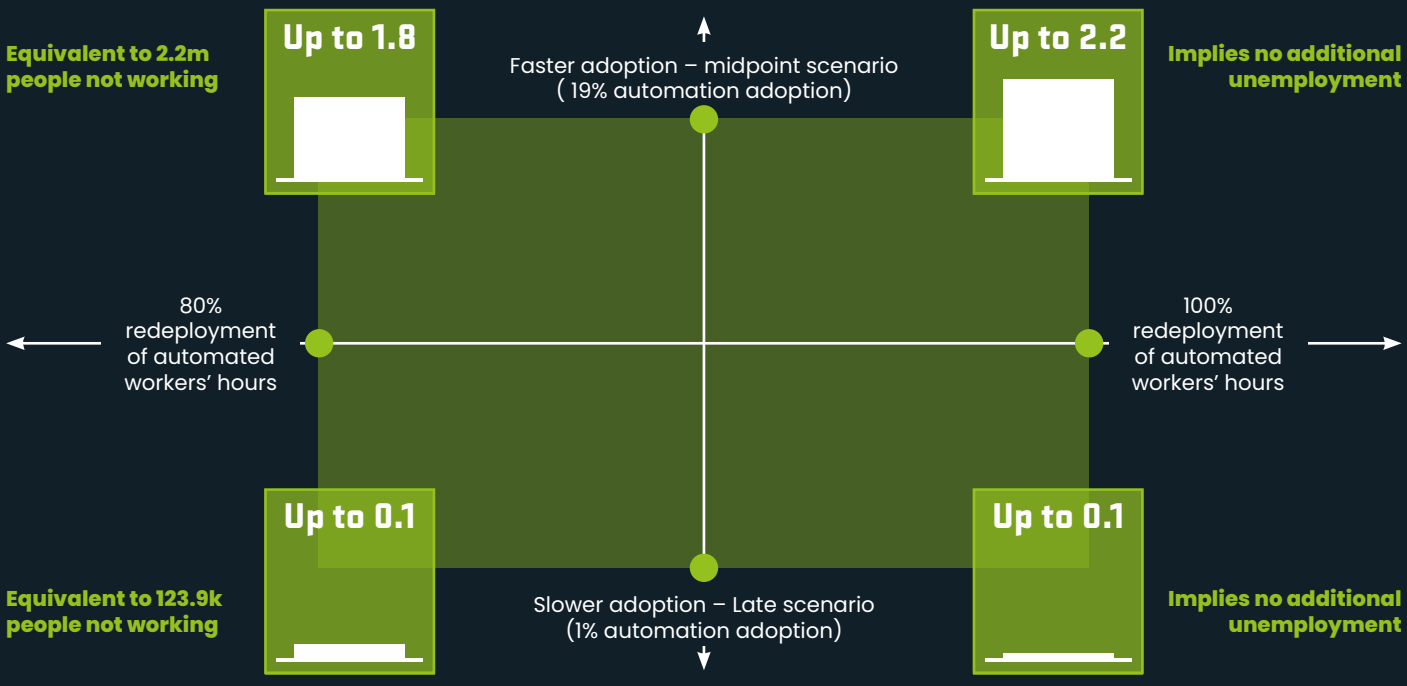
SOURCE: INTERNATIONAL LABOUR ORGANIZATION; INTERNATIONAL MONETARY FUND; MCKINSEY ANALYSIS

ADDRESSING DUAL CHALLENGES

The MENA region faces a critical challenge: the need to create jobs. To achieve this, the region needs to grow and invest, which in turn hinges on increasing competitiveness through productivity gains. Despite low labor costs and slow growth, technology adoption is essential for MENA to compete in global markets.

Without embracing tech, the region risks falling behind. The jobs of the future will demand higher productivity and tech-savviness. Despite current gaps in tech adoption and human capital, MENA can enhance its competitiveness – if it acts swiftly.

POTENTIAL ANNUAL PRODUCTIVITY CAGR IN THE MIDDLE EAST AND NORTH AFRICA, 2022–30, %[3]



SOURCE: INTERNATIONAL LABOUR ORGANIZATION; INTERNATIONAL MONETARY FUND; MCKINSEY ANALYSIS

Fast tech adoption is the most critical factor to ensure that MENA captures the productivity enhancement potential of new technologies. A delayed adoption could cause a drastic reduction in productivity boost by 2030, from an estimated potential of 1.8-2.2% to just 0.1% annually.

Successful technology adoption requires economies to redeploy workers whose jobs have been automated. It also requires being able to find workers with the right skills, including technical capabilities.

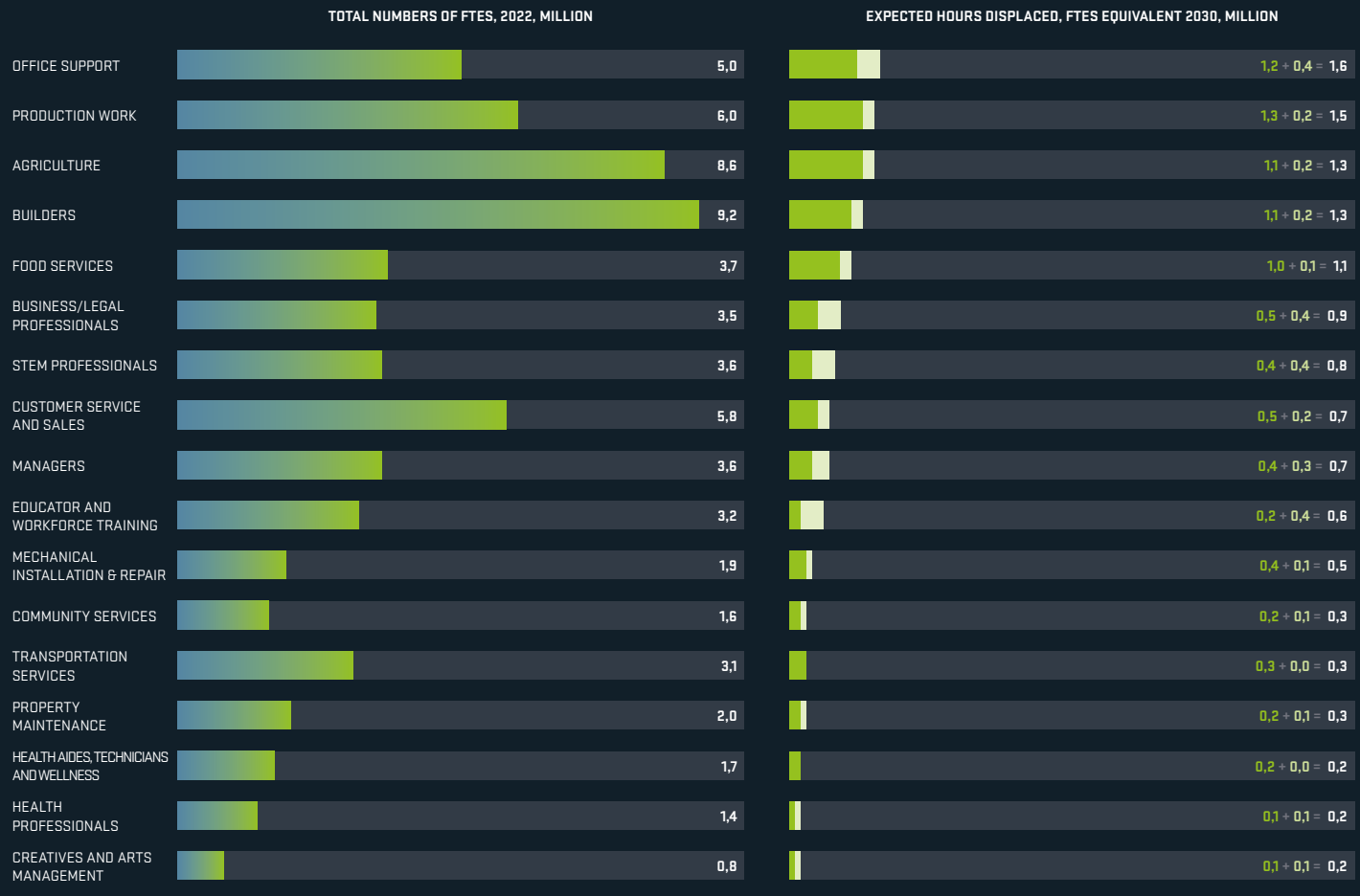
Redeployment is essential: if only one automated worker out of five is not reskilled and redeployed, the productivity impact of automation could fall from 2.2% to 1.8% annually. Poorer performances could result in even less positive outcomes.

SKILLING UP

Skills are no less essential: they are needed from the start to meet the demands of a rapidly evolving job market. In MENA, only 11% of jobs in 2023 were STEM-related, significantly fewer than in the United States (24%) and the European Union (36%). This highlights the paradox that, despite a large unemployed population in the MENA region, there is also a shortage of people with the requisite skills. These findings highlight the growing importance of education and training in facilitating the transition to new technologies and maximizing its benefits.

New efforts to upskill and reskill would need to identify the jobs of the future and where demand would sharply decline. Occupations such as agricultural employees, builders and production workers would be affected by non-AI emerging technologies, according to our analysis, while office support, STEM professionals and educators are among those likely most affected by automation driven by generative AI. However, the impact of automation would vary by region because of differences in industrial and

AUTOMATION ADOPTION AND EXPECTED HOURS DISPLACED FOR A SUBSET OF MIDDLE EAST AND NORTH AFRICA (MENA[1]), MIDPOINT SCENARIO



SOURCE: MCKINSEY GLOBAL INSTITUTE ANALYSIS

1 FIGURES MAY NOT SUM, BECAUSE OF ROUNDING.
1 THIS IS BASED ON FOUR COUNTRIES IN MENA THAT PROVIDE A GOOD REPRESENTATION OF ALL CLUSTERS ACROSS MENA.

PREPARING FOR THE FUTURE

As new technologies increasingly reshape global labor markets, the MENA region faces critical challenges. Given significant gaps in technology adoption, as well as in human capital, the region risks losing competitiveness if it does not act promptly to address these challenges. Tech adoption needs to be coupled with reskilling and upskilling to equip workers with the skills needed in a more automated future – and limit the impact on society.

MENA has historically been slower at adopting cutting-edge technologies, often accumulating a lag of 10–15 years compared with the Global North.

internet penetration reached in 2015

15 years
after North America

10 years
after the European Union

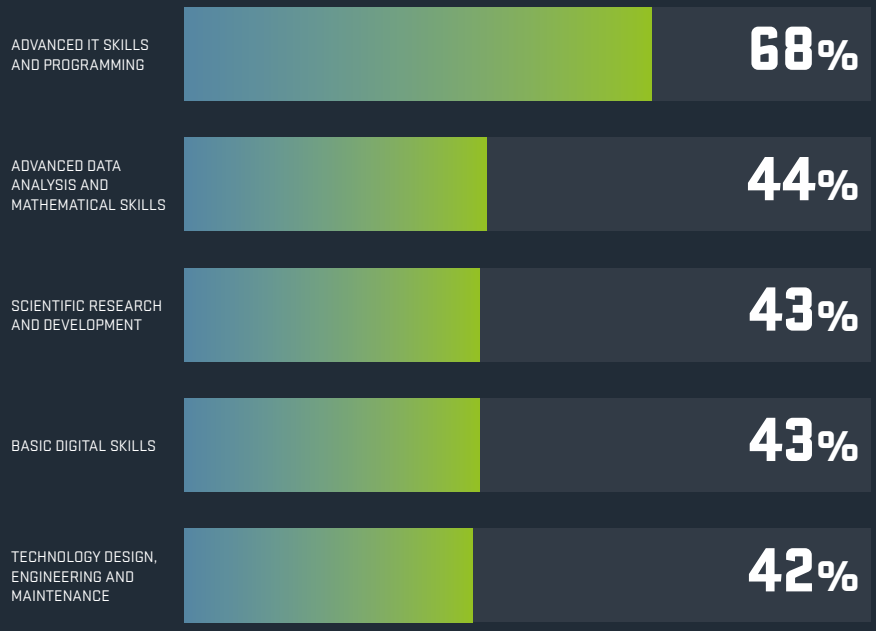
94
companies in MENA with annual revenues greater than $1bn

1,800
companies in the United States

1,756
companies in Europe

DO YOU HAVE THE RIGHT SKILLS IN YOUR WORKFORCE TO MEET YOUR STRATEGY?

IF NOT, WHERE DO YOU SEE SHORTAGES IN TECH SKILLS?



SOURCE: PIF FUTURE OF WORK REPORT SURVEY, 2024

SUCCESS STORIES

There are shortcomings. But the region has also shown time and again that it can rise to important challenges. And there are success stories.

MOROCCO'S RISING AUTOMOTIVE INDUSTRY

In 2009, Morocco launched the National Pact for Industrial Emergence (PNEI), focusing on six key industries, with the automotive sector emerging as a standout. To attract global manufacturers, the Moroccan government created free trade zones, offered tax incentives and made significant infrastructure investments. These strategic initiatives proved successful, drawing major automotive companies like Peugeot and Renault to establish plants and operations in Morocco.

180,000

new jobs between 2014 and 2021 in the automotive sector

700,000

vehicles produced a year – the largest exporter in Africa

990,000

women impacted by significant legal changes to empower them

105,271

women enter the workforce between 2018 and 2021

EMPOWERING WOMEN IN SAUDI ARABIA

Historically, Saudi Arabia has had a relatively low rate of female workforce participation. However, significant reforms in recent years, guided by Vision 2030, have aimed to address these challenges and increase women's involvement in the labor force.

TRANSFORMING SAUDI ARABIA INTO A DATA-DRIVEN ECONOMY

Saudi Arabia is on a transformative journey to establish itself as a leader in the global data-driven economy. This vision is rooted in the Kingdom's broader Vision 2030, aimed at diversifying its economy beyond oil dependence, promoting innovation and enhancing public sector services. A pivotal element of this progress is the alignment between the National Digital Transformation Strategy, ICT Strategy and the National Data and AI Strategy.

31

tech training programs

13%

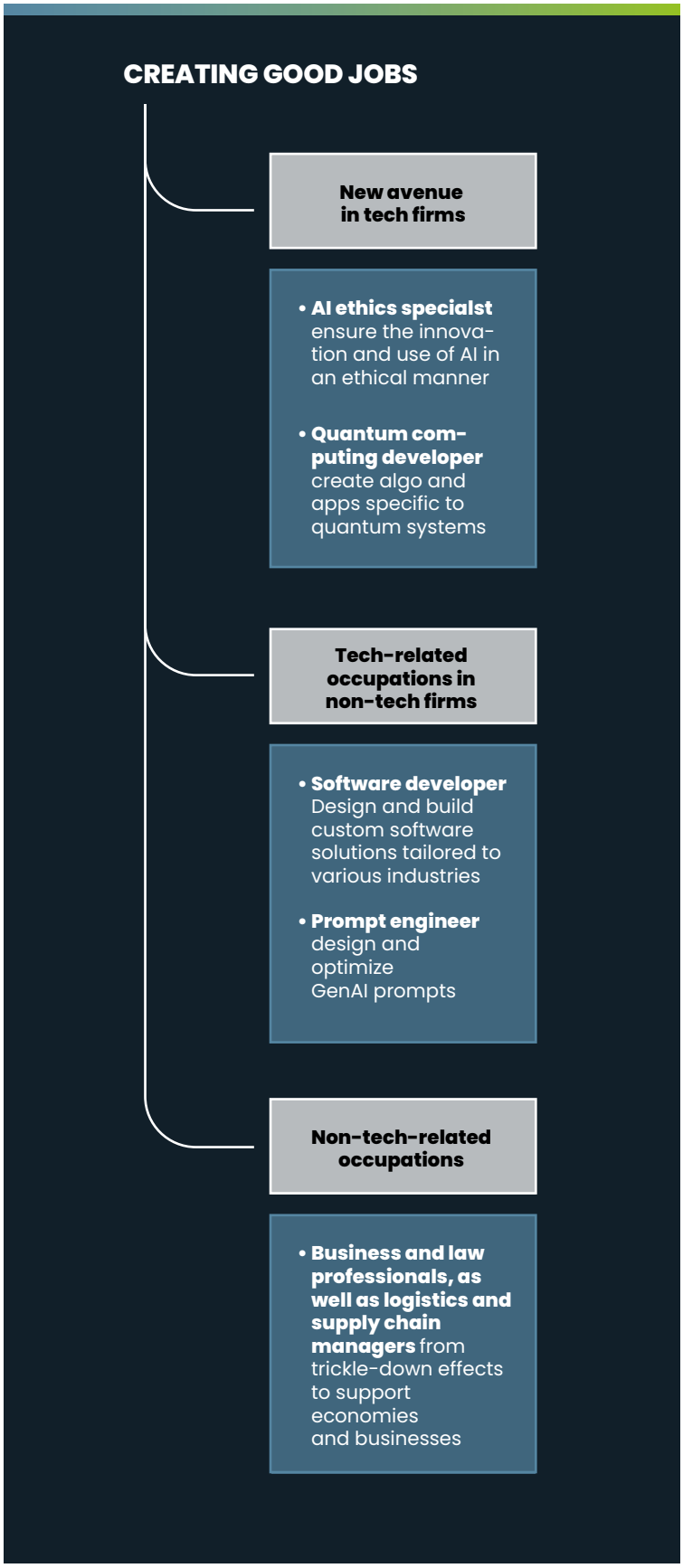
of the workforce employed in STEM-related fields by 2023

THE POTENTIAL PATH TO SUCCESS

MENA finds itself at the verge of a transformation that will support labor demand. Main enablers required to capture the opportunities of technology are in human capital development, i.e., supply challenges. However, labor markets in MENA also struggle to create new jobs due to demand challenges:

- **BUSINESS DEVELOPMENT** is hindered by substantial obstacles, including poor coordination between job seekers and employers and limited market contestability
- **LACK OF GLOBALLY COMPETITIVE ADVANCED INDUSTRIES OUTSIDE OF OIL** also hinders job creation and leads to undersized enterprises (SMEs) that struggle to grow due to limited support and market size, while insufficient infrastructure slows progress
- **ECONOMIC AND POLITICAL INSTABILITY** exacerbate these challenges, while the macroeconomic environment suffers from systemic bottlenecks that stifle innovation, preventing businesses from thriving and expanding

Tech adoption can help businesses scale, unlocking growth across various sectors. Upskilling and training the workforce would enable the region to adopt innovative and productivity-boosting technologies more rapidly and foster technology-driven entrepreneurship.



PULLING FOUR LEVERS

We studied a range of programs globally to understand initiatives that are proving successful in preparing businesses and the workforce for the adoption of new technologies. This exercise highlights four areas of initiative that are relevant for MENA countries. These levers

1. Funding

Technological transformation not only requires investment in innovation, but also in the workforce that will drive and sustain it.

- **Funding to develop training** is a crucial aspect of financial support. Governments allocate funds to support developing courses and programs that address critical skills gaps. This may involve collaborations with educational institutions, industry experts, and private training providers to ensure the courses are relevant, up to date, and tailored to the needs of the evolving workforce.
- Moreover, **governments provide credits or vouchers to individuals for training purposes**, allowing them to directly purchase courses that align with their professional development needs.
- **Funding for advocacy and research** is an example of another common practice that could be utilized.

2. Skilling and capability building

As technological advancements reshape industries, there is a growing need for skill development. Skilling efforts not only equip individuals with the abilities required for emerging technologies, but also enable them to capture new job opportunities created by these advancements, helping to offset job losses in traditional sectors.

- **Many programs are initiated by public entities and target various groups,** reflecting a top-down approach where public authorities recognize the need for reskilling and upskilling to stay competitive and ensuring continuous learning for a wide audience.
- **Private sector stakeholders are typically mobilized** for program implementation.

3. Monitoring, advocacy and policymaking

Governments play a key role in enacting relevant policies, often aligning these efforts closely with industry demands to ensure that emerging technologies are integrated into the economy through practical, hands-on training programs. In addition, innovation hubs, R&D centers and think tanks serve as critical components of policy frameworks.

- **Inclusivity and accessibility** are key components of policies to ensure that technological innovation benefits a broad spectrum of the workforce. These policies are designed to support workers across different skill levels and industries, enabling them to adapt to technological changes.
- **Long-term, integrated** policy roadmaps to anticipate the future impact of technological advancements have also been observed. These roadmaps not only guide the development of innovation but also ensure that human capital aligns with broader goals.

4. Job matching

As technology transforms the nature of work, aligning the skills of the workforce with market needs becomes increasingly critical. This lever focuses on creating systems and platforms that facilitate effective job matching, ensuring that individuals are positioned in roles that best utilize their skills and qualifications, and that employers have access to the suitable skills they require.

- **Common elements include skills passport and cross-regional standardization systems,** which are platforms or frameworks that manage and document individuals' skills, qualifications and certifications, and standardize qualifications across regions.
- **Matchmaking portals** connect employers with potential employees. Matchmaking platforms not only streamline the hiring process for employers, but also provide workers with clear pathways to improve their qualifications and secure relevant roles. By aligning employer needs with employee capabilities, these portals help ensure that labor market demands are met more efficiently and that individuals can adapt to changing job requirements.

THE ROUTE FORWARD

Within MENA, some countries have initiated efforts to respond to technological advancements. However, the extent and impact of these initiatives vary significantly across the region.

Leading economies have launched multiple initiatives, in which their proactive approach to developing human capital reflects a commitment to embrace technological innovation and prepare for a digital future. These countries have invested in education and training programs aimed at equipping individuals with the skills needed for emerging technologies and new market demands.

Emerging economies have taken moderate steps toward technology adoption and skilling, implementing a limited number of initiatives with more focused objectives despite challenges such as limited funding. The limited resources of such economies present a driver to innovate by focusing on building value through human capital.

Challenged economies have been hampered by political instability and economic constraints, making significant measures a rarity.

Overall, while these efforts mark important steps toward progress, they remain insufficient to raise the entire MENA region to a level at which technological advancements and a skilled workforce can fully drive economic growth and societal development.

Catalyzing success

To build on its ongoing efforts and improve competitiveness, the MENA region must act swiftly. The initiatives, mainly implemented by leading economies, are not sufficient to raise the entire region. The initiatives have been largely localized. Without broader regional application, the potential for sustainable growth and innovation remains limited.

MENA must consider four key factors, unique to its context:

- **Regional collaboration.** The distinct nature of these countries means they each have unique strengths that, when combined, could create synergies across the region.
- **Scalability and adaptability.** For solutions to be effective across the MENA region, they must be both scalable and adaptable to the diverse local contexts of each country.
- **Sector specificity.** Different sectors play pivotal roles in different countries. Tailoring strategies to specific sectors allows each country to address its unique needs and maximize its economic potential.
- **Public-Private Partnerships (PPPs).** In the MENA region, where many initiatives are traditionally government-driven, public-private partnerships offer an avenue to enhance innovation and efficiency. By engaging the private sector, governments can tap into additional expertise, resources, and innovation capabilities that complement public efforts.

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