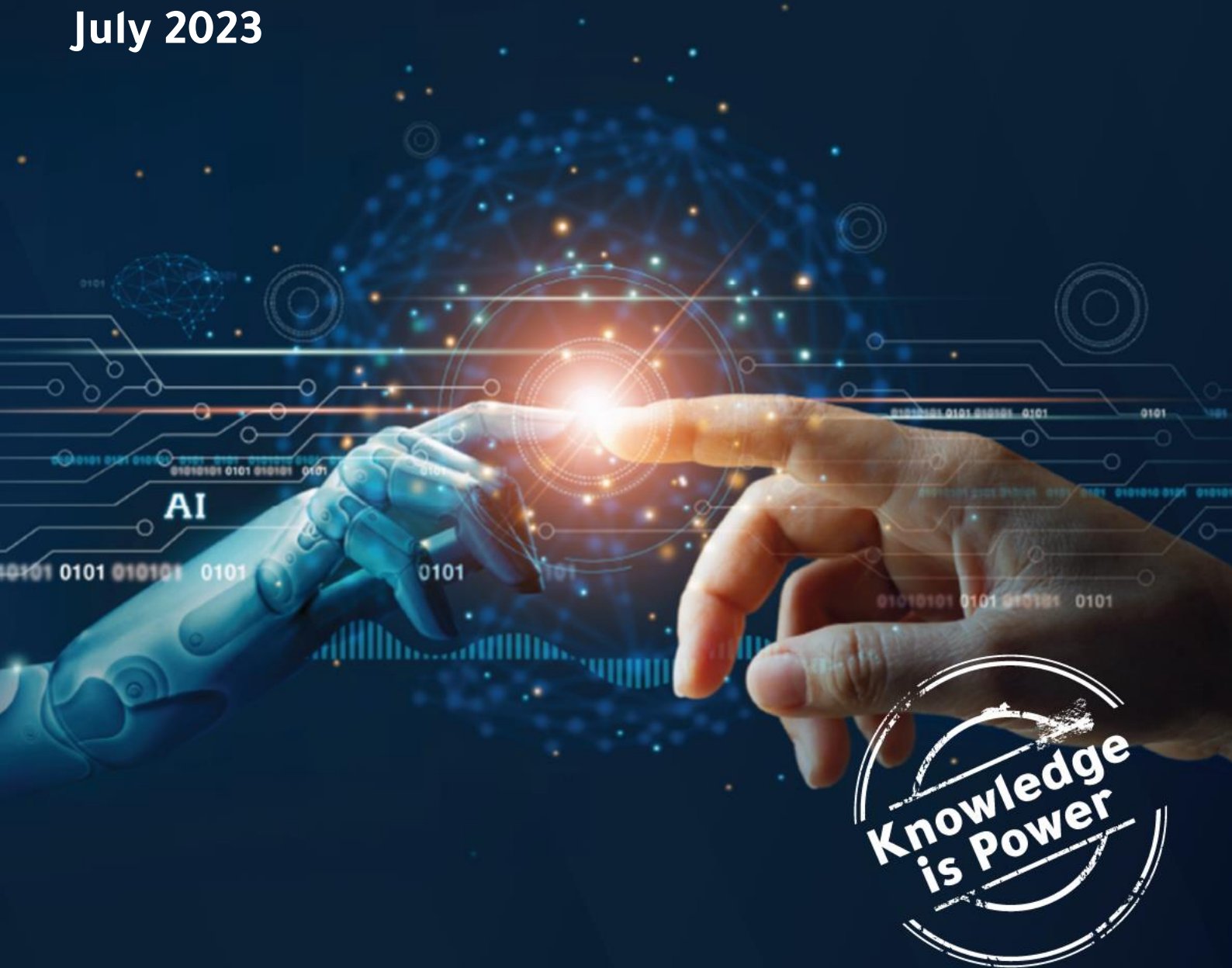




منتدى الاستراتيجيات الأردني
JORDAN STRATEGY FORUM

Is Jordan Ready for Future Jobs (2023-2027)?

July 2023





منتدى الاستراتيجيات الأردني JORDAN STRATEGY FORUM

The Jordan Strategy Forum (JSF) is a not-for-profit organization, which represents a group of Jordanian private sector companies that are active in corporate and social responsibility (CSR) and in promoting Jordan's economic growth. JSF's members are active private sector institutions, who demonstrate a genuine will to be part of a dialogue on economic and social issues that concern Jordanian citizens. The Jordan Strategy Forum promotes a strong Jordanian private sector that is profitable, employs Jordanians, pays taxes and supports comprehensive economic growth in Jordan.

The JSF also offers a rare opportunity and space for the private sector to have evidence-based debate with the public sector and decision-makers with the aim to increase awareness, strengthening the future of the Jordanian economy and applying best practices.

For more information about the Jordan Strategy Forum, please visit our website at www.jsf.org or contact us via email at info@jsf.org. Please visit our Facebook page at Facebook.com/JordanStrategyForumJSF or our Twitter account @JSFJordan for continuous updates about Jordan Strategy Forum.



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Knowledge is Power Report: It is a report that presents facts, figures, and observations from various sources on a specific topic within one report.

The Jordan Strategy Forum (JSF) is pleased to make this publication available to all users to benefit and quote from provided that they the JSF is explicitly and properly cited as the reference.

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1. Background:

We all know that the Jordanian economy has been wrestling with a number of difficult economic challenges. At the forefront of these challenges is unemployment. Given Jordan's unemployment record, it is not surprising that one of the objectives of the **"Economic Modernization Vision"** is to **"create 1+ million new income opportunities for Jordanians by 2033"**. Indeed, and to implement the Vision, eight growth drivers are identified, including **"Smart Jordan"** which covers **Early Childhood Care and Development, Basic and Secondary Education, Higher Education, and Technical and Vocational Education and Training**.

Under the Strategic State and potential and priorities of the education sector, it is worth noting the following quotations from the Vision:

Strategic State of Sector: "Facing the challenges of outdated curriculum/programs, traditional pedagogical methods, weak institutional capacity, poor governance, and low learning outcomes".

Strategic Potential and Priorities:

1. "Develop knowledgeable, skillful citizens capable of achieving their dreams and aspirations".
2. "Early Childhood Care and Education: An integrated, equitable, just, and child-centered system".
3. "Basic and Secondary Education: Develop critical thinking, problem-solving, and lifelong learners who believe in human values and cherish national identity".
4. "Higher Education: An inclusive, equitable, and high-quality research-driven and technology-enabled system".
5. "TVET: Develop a well-trained, highly skilled, and diverse workforce".

To realize the strategic potential and priorities, the Vision outlines 10 early childhood care and development initiatives, 12 basic and secondary education initiatives, 8 higher education initiatives, and 15 technical and vocational education and training initiatives.

Relative to the above-mentioned observations, it is informative to note that **the year 2023 has witnessed the publication of two very relevant Global Reports**.

- A. On the 16th of March 2023**, the United Nations Conference on Trade and Development (UNCTAD) launched its **“Technology and Innovation Report 2023”**. In this Report, the **“Frontier Technology Readiness Index”** is also published. This Index ranks 166 countries based on ICT, skills, research and development, industrial capacity, and finance indicators.
- B. On the 30th of April 2023**, the World Economic Forum (WEF) launched its **“Future of Jobs Report / 2023”**. This report explores how jobs and skills will evolve over the next five years (2023 - 2027). This Report **“continues the analysis of employer expectations to provide new insights on how socio-economic and technology trends will shape the workplace of the future”**.

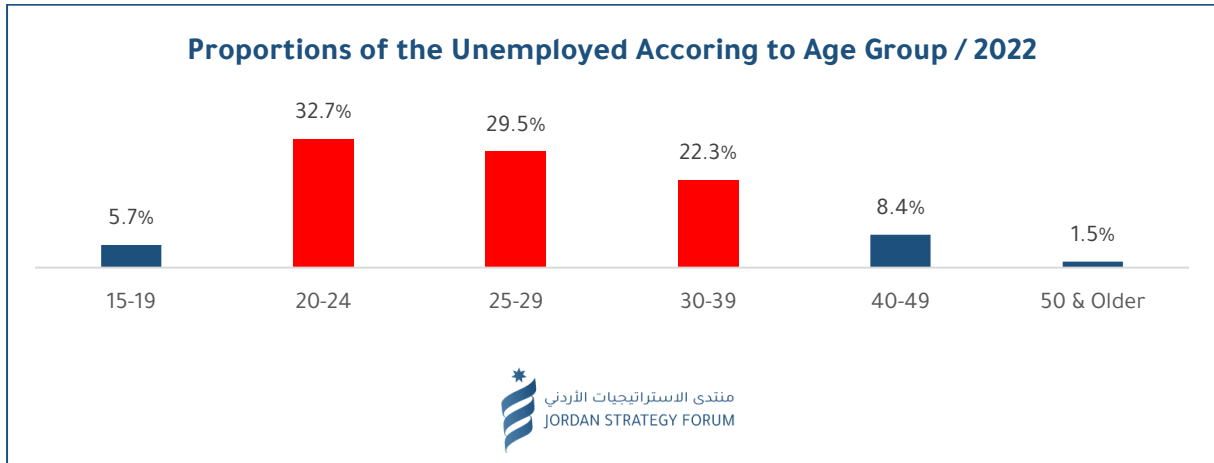
The objectives of the Policy Paper, published by the Jordan Strategy Forum (JSF) are four-fold:

1. To contextualize the unemployment challenge in Jordan in terms of its magnitude and structure.
2. To outline where Jordan ranks in the Frontier Technology Readiness Index.
3. To outline a number of observations from the Future of Jobs 2023 Report.
4. To recommend some policy measures whose objective is to highlight what needs to be done to make Jordan's labor force more competitive.

2. Unemployment in Context: The Jordanian Case

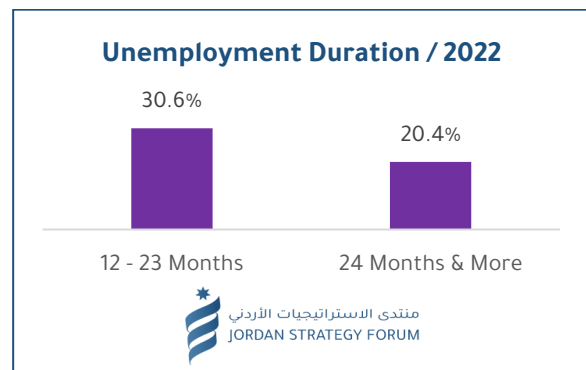
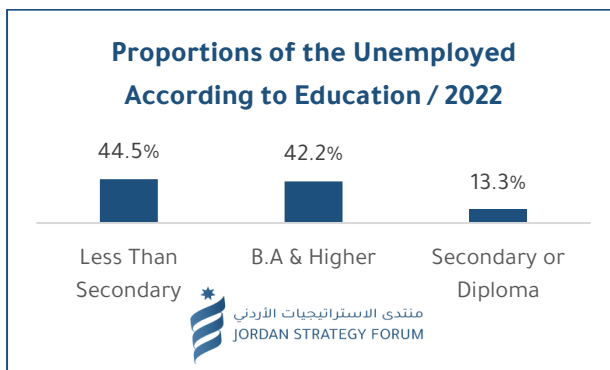
We all know that the Jordanian economy has been wrestling, and for too long, with the challenge of **UNEMPLOYMENT**. In 2018 and 2022, for example, the overall unemployment stood at 18.6% and 22.8% respectively. Within this context, all stakeholders should be aware that these rates hide a number of salient features.

- A.** The total number of the unemployed Jordanians increased from **322,983 in 2018** to **419,837** individuals in 2022, or by **30.0%**.
- B.** In 2022, most of the 419,837 unemployed Jordanians belong to the age groups 20-24 (32.7%), 25-29 (29.5%), and to 30-39 group (22.3%). These proportions reflect the real challenge.



Source: Department of Statistics.

- C. Most of the 419,837 unemployed Jordanians have either less than secondary education (44.5%) or a university undergraduate degree or higher (42.2%). Again, these proportions reflect the real challenge behind the unemployment challenge in Jordan.
- D. A large proportion (30.6%) of the 419,837 unemployed Jordanians are unemployed for 12 to 23 months. In addition, 20.4% of the unemployed Jordanians are unemployed for 2 years or more. Again, these proportions reflect the real challenge behind the unemployment challenge in Jordan.

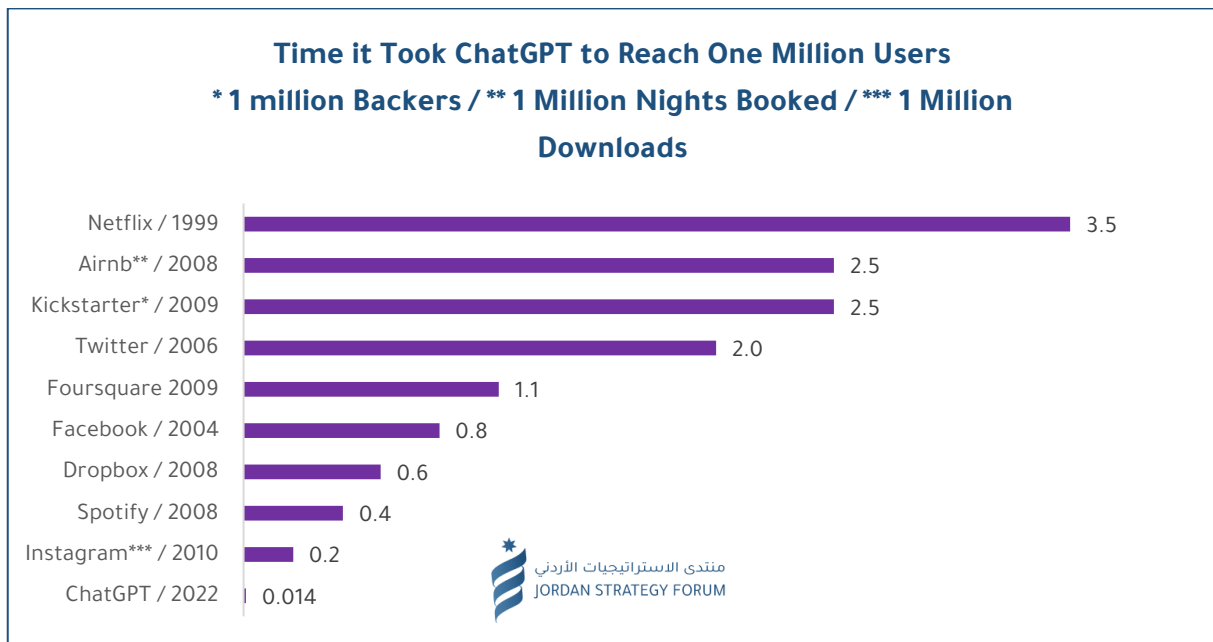


Source: Department of Statistics.

- E. Policy makers should not underestimate the socio-economic implications of unemployment. Unemployment involves high costs. **The economic cost** involves a decline in a nation's output and income. **The psychological cost** involves a loss of self-esteem, depression, and even suicidal behavior. **The social cost** involves increases in crime, domestic violence, drug abuse, divorce, and even social unrest.

Relative to Jordan's unemployment record, and from the outset, one must be clear about the following six observations:

1. Unlike the first, second, and third industrial revolutions, the on-going fourth industrial revolution is affecting almost all industries. Indeed, this revolution is fast changing the way people live, work, and relate to one another. All in all, this is the result of “frontier technologies” like the Internet of Things (IoT), Blockchain, Big Data, Robotics, 3D Printing, Artificial Intelligence (AI), and others.
2. ChatGPT, the popular artificial intelligence chatbot gained one million users just five days after launching in November 2022. In other words, the adoption of new technologies moves at an unprecedented pace.



Source: Adapted from Statista.

3. No one should underestimate the importance of the advances in technologies in improving productivity and economic growth, and creation of new and better jobs.
4. As a result of the on-going technological advancements, labor markets across the globe are going through major transformations with millions of roles / jobs being eliminated or created.
5. New technologies can bring huge benefits. They can, however, cause huge losses. **The implications of technologies could be serious for developing countries if are either overwhelmed, or simply left behind.**
6. Innovation in developing countries can be achieved through independent research and development (R&D) and / or technology adoption. On average, it can be argued that developing countries **can achieve economic growth and development at a lower cost and a faster pace by adopting technology.** R&D activities are costly, risky, and take time to realize their benefits.

3. The Frontier Technology Readiness Index: Where Does Jordan Rank?

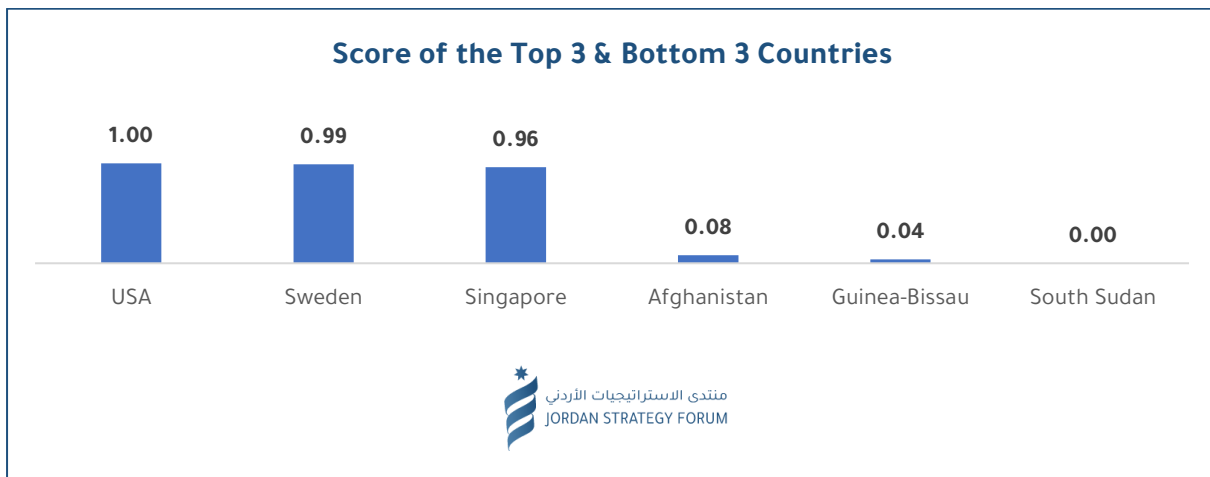
As stated earlier, the Frontier Technology Readiness Index ranks 166 countries based on ICT, skills, research and development, industrial capacity, and finance indicators. The indicators that compose the index are listed below:

Indicators Included in the Frontier Technology Readiness Index	
Category	Indicator Name
ICT Deployment	Internet users (per cent of population).
ICT Deployment	Mean download speed (Mbps).
Skills	Expected years of schooling.
Skills	High-skill employment (% of working population).
R&D Activity	Number of scientific publications on frontier technologies.
R&D Activity	Number of patents filed on frontier technologies.
Industry Activity	High-technology manufactures exports (% of total merchandise trade).
Industry Activity	Digitally deliverable services exports (% of total service trade).
Access to Finance	Domestic credit to private sector (% of GDP).

Source: Frontier Technology Readiness Index / 2023

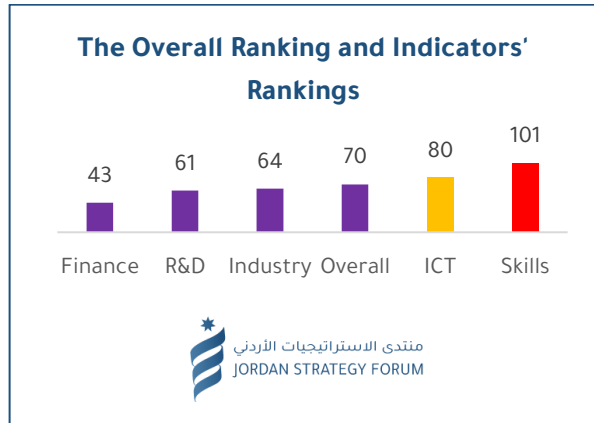
Based on the Frontier Technology Readiness Index, we outline below some observations about the rankings of Jordan individually, and from a regional and global perspectives.

A. With a perfect score (0 - 1). The USA tops the world. South Sudan comes in last at 166th.



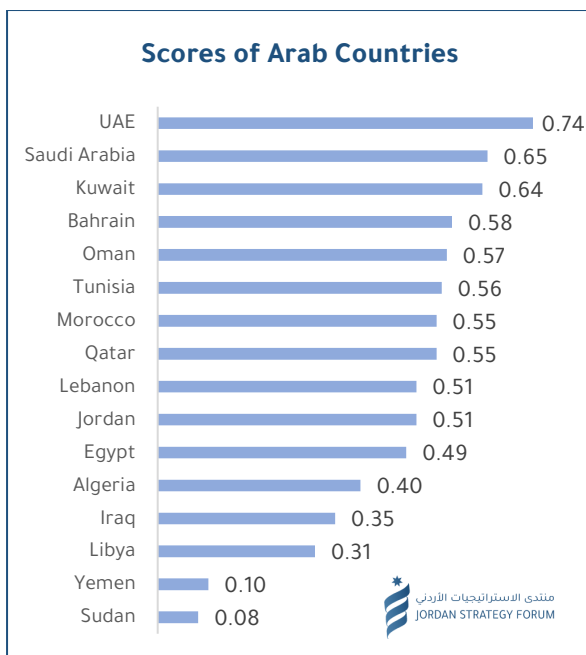
Source: Frontier Technology Readiness Index / 2023

B. Jordan lost its rank from 64th to 80th. Clearly, Jordan needs to improve in “ICT” and Skills”. The rankings in these indicators are poor.



Source: Frontier Technology Readiness Index / 2023

- C. The relative performance of Jordan is poor. Jordan comes in **10th out of 16 Arab countries**. In addition, Jordan ranks higher than only Sudan, Yemen, Libya, Iraq, Algeria, and Egypt.



Source: Frontier Technology Readiness Index / 2023

TO SUM UP, to improve Jordan's score and rank in the Frontier Technology Readiness Index, policy makers must consider **ICT development (Internet users / per cent of population and mean download speed / Mbps)**. In addition, they must consider the **expected years of schooling and high-skill employment / % of working population**).

4. The Future of Jobs Report / 2023: Some Observations

The findings of the Future of Jobs Report 2023 are based on a survey of 803 firms that employ 11.3 million individuals in 45 economies and 27 industrial clusters. The Survey

includes questions about “macrotrends and technology trends, their impact on jobs, their impact on skills, and the workforce transformation strategies businesses plan to use, across the 2023-2027 timeframe”.

Below, we outline a few observations from the Report.

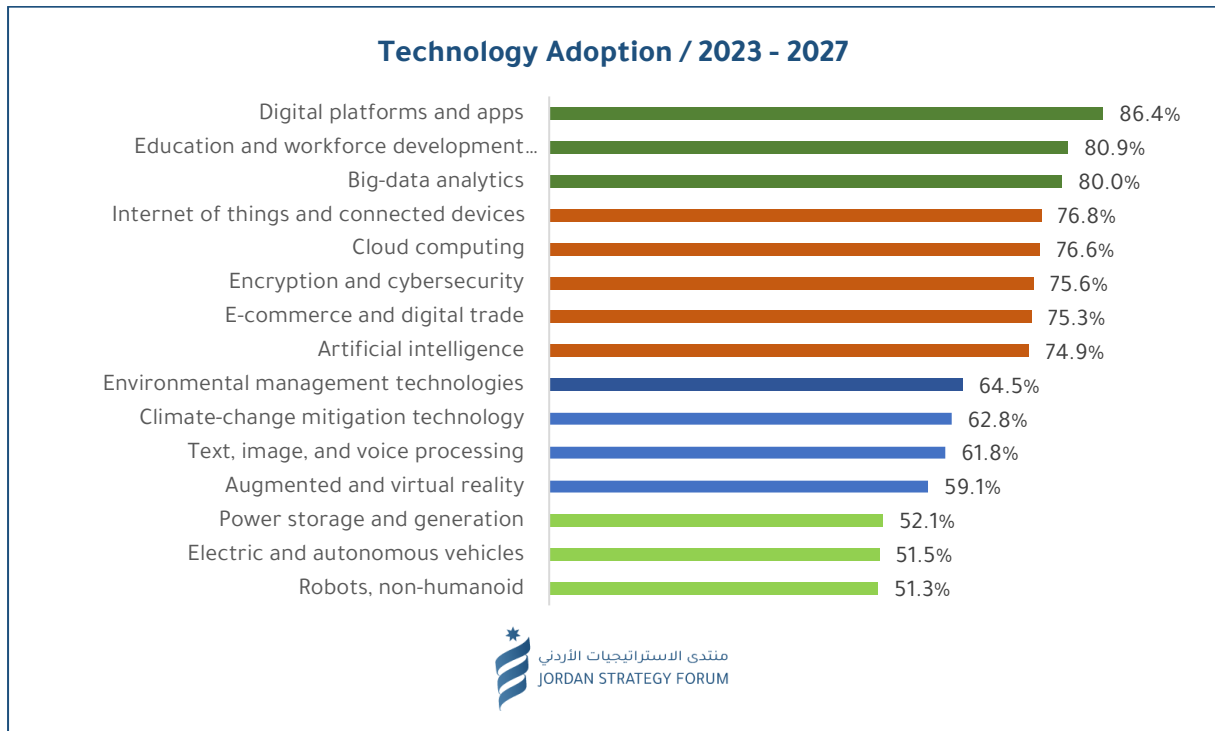
1. Businesses identify that **“increased adoption of new and frontier technologies”, “broadening digital access”, and broader digital access and broader application of Environmental, Social and Governance (ESG) standards”** as the top macrotrends which are most likely to drive transformation in their organization during 2023 - 2027.
2. Businesses predict that the **strongest net job-creation effect will be driven by investments that facilitate the green transition of businesses, broader application of ESG standards and supply chains becoming more localized**. Businesses predict that **increased adoption of frontier technologies and increased digital access will increase job growth**.

Macrotrends Driving Business Transformation

Trends ranked by share of organizations surveyed that identified this trend as likely or increasingly in the next 5 years & Impact on Jobs		
	Trends	Jobs
Increased adoption of new and frontier technologies	86.2%	36.4%
Broadening digital access	86.1%	33.7%
Broader application of Environmental, Social, & Governance standards	80.6%	51.4%
Rising cost of living for consumers	74.9%	-19.3%
Slower global economic growth	73.0%	-44.4%
Investments to facilitate the green transition of your business	69.1%	52.2%
Supply shortages and/or rising cost of inputs for your business	68.8%	-23.7%
Consumers becoming more vocal on environmental issues	67.6%	28.8%
Consumers becoming more vocal on environmental issues	67.5%	35.2%
Climate-change induced investments into adapting operations	65.1%	43.9%
Supply chains becoming more localized	60.0%	46.5%
Stricter government regulation of data use and technology	59.2%	16.9%
Ageing populations in advanced and emerging economies	51.6%	16.9%
Demographic dividend in developing and emerging economies	49.6%	37.8%
Increased geopolitical divisions	48.1%	1.6%
Ongoing impact of the COVID pandemic	43.1%	-0.9%

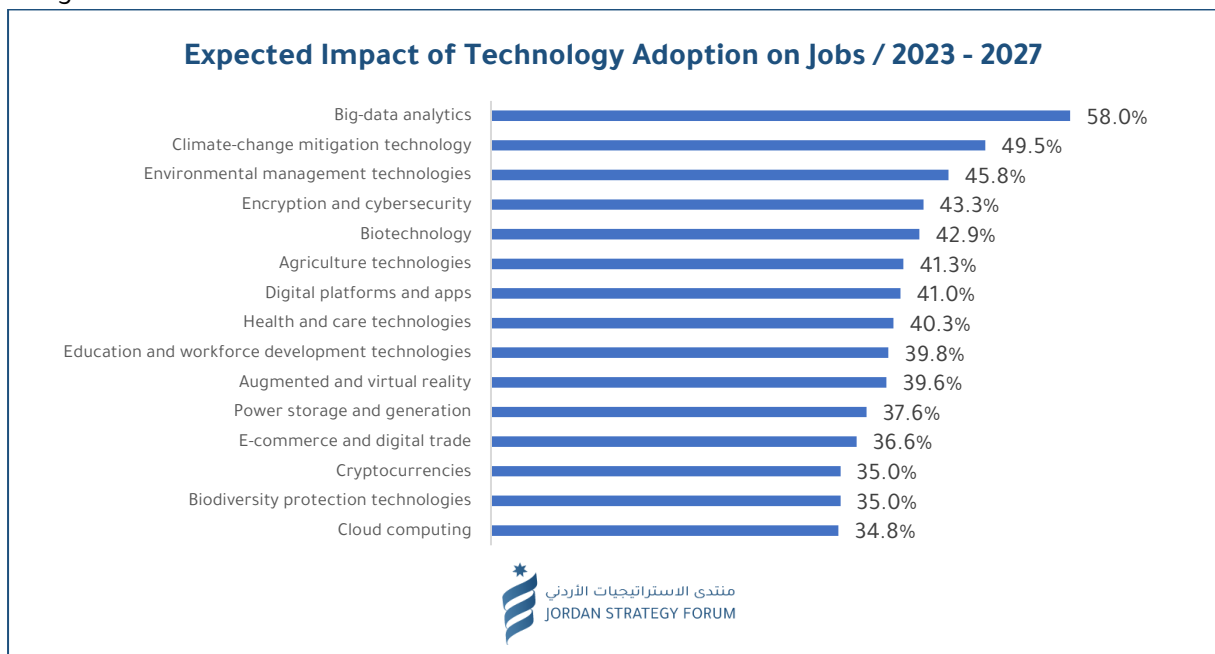
Source: The Future of Jobs Report / 2023 / WEF

3. In addition, the survey indicates that **“digital platforms and apps, education and workforce technologies, and big-data analytics are the technologies most likely to be adopted by the surveyed organizations”**.



Source: The Future of Jobs Report / 2023 / WEF

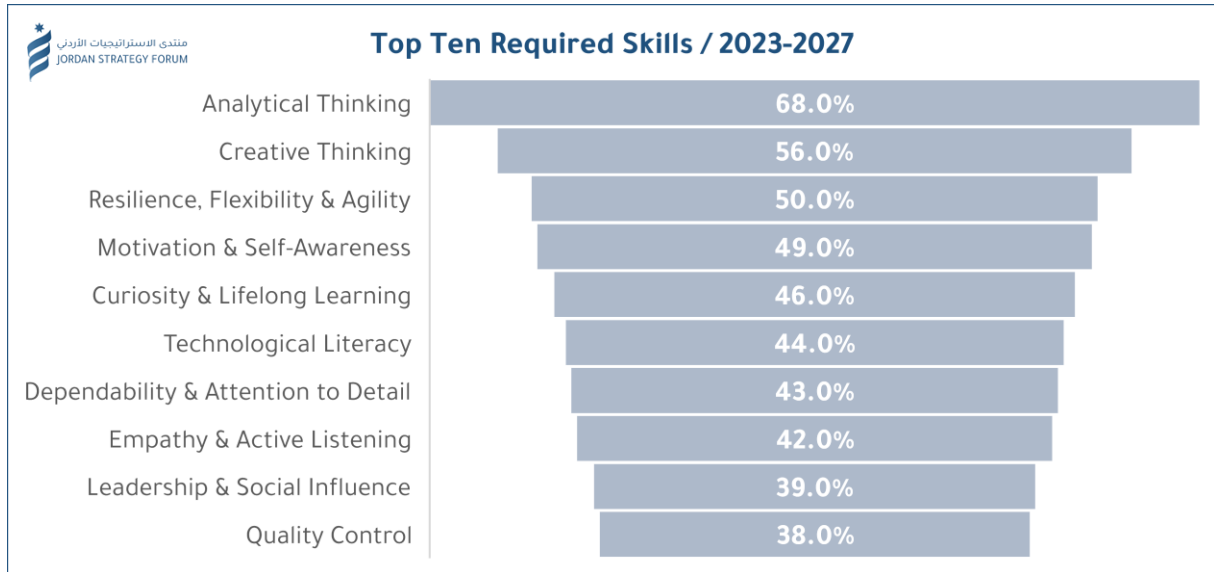
4. As far as the impact of adopted technologies on jobs are concerned, big data analytics and climate change mitigation technology are expected to be the biggest drivers of job growth.



Source: The Future of Jobs Report / 2023 / WEF

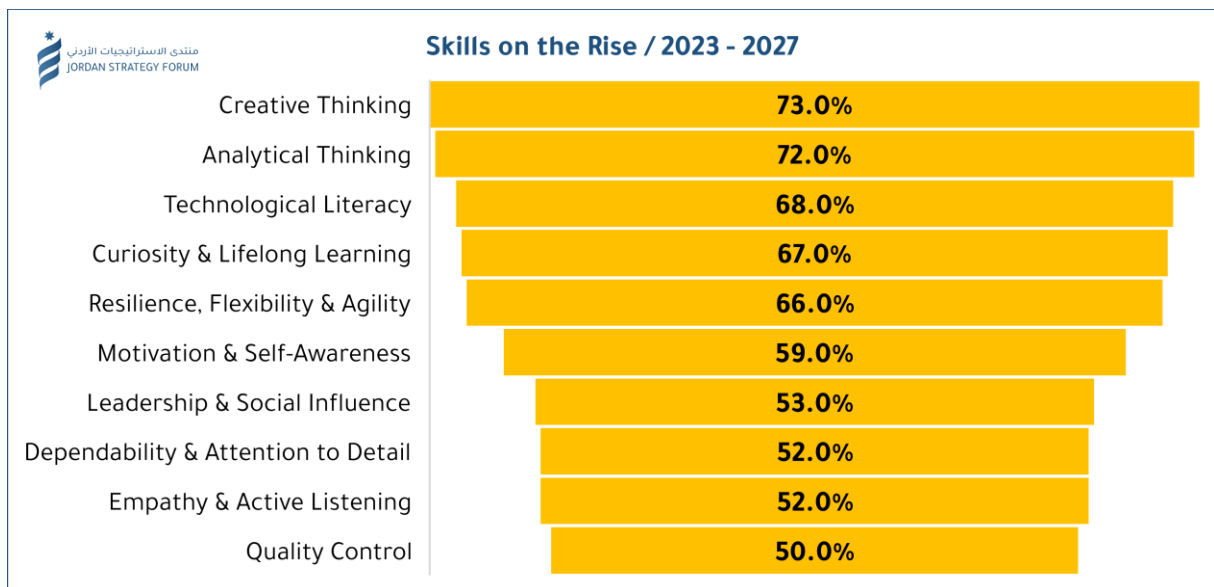
5. Overall, the report estimates a “mean structural labor-market churn of 23% for surveyed companies across sectors and countries over the next five years”. In other words, the total number of expected job movements (in newly created roles, and existing destroyed ones) represents 23% of the current workforce.

6. The surveyed organizations expect that 44% of workers' skills will be disrupted in the next five years.
7. "Of the 673 million jobs reflected in the dataset in this report, respondents expect structural job growth of 69 million jobs and a decline of 83 million jobs. This corresponds to a net decrease of 14 million jobs, or 2% of current employment".
8. The surveyed organizations expect high jobs growth in education, agriculture and digital commerce and trade. The Education industry is expected to create 3 million additional jobs (vocational teachers and university teachers). The agricultural professional's sector (equipment operators) is expected to create an additional 3 million jobs. In addition, the surveyed organizations expect that 4 million additional jobs will be created in "digitally enabled roles", such as E-Commerce specialists, digital transformation specialists, and digital marketing and strategy specialists.
9. The surveyed organizations expect that "26 million fewer jobs by 2027 in record-keeping and administrative roles, including cashiers and ticket clerks; data entry, accounting, bookkeeping and payroll clerks; and administrative and executive secretaries, driven mainly by digitalization and automation".
10. Analytical thinking and creative thinking remain the most important skills for workers in 2023.
11. Here, it is useful to note that creative thinking, which is a cognitive skill (skills that the brain uses to think, read, learn, remember, reason, and pay attention), is ranked 2nd, ahead of three self-efficacy skills (resilience, flexibility and agility, motivation and self-awareness, and curiosity and lifelong learning. This indicates the "importance of workers ability to adapt to disrupted workplaces".



Source: The Future of Jobs Report / 2023 / WEF

12. As far as the required skills' expectations of the surveyed organizations in the next five years are concerned, "cognitive skills are reported to be growing in importance most quickly, reflecting the increasing importance of complex problem-solving in the workplace. Surveyed businesses report creative thinking to be growing in importance slightly more rapidly than analytical thinking. Technology literacy is the third-fastest growing core skill".



Source: The Future of Jobs Report / 2023 / WEF

13. "Six in 10 workers will require training before 2027, but only half of workers are seen to have access to adequate training opportunities today". The highest and second highest priorities for skills training from 2023-2027 are analytical thinking and creative thinking.



Source: The Future of Jobs Report / 2023 / WEF

14. “Organizations identify skills gaps and an inability to attract talent as the key barriers preventing industry transformation, with 60% of surveyed companies highlighting the difficulty in bridging skills gaps locally and 53% identifying their inability to attract talent as the main barriers to transforming their business”.



Source: The Future of Jobs Report / 2023 / WEF

15. Most of the surveyed organizations stated that they are planning to invest in “learning and training on the job” and in “accelerating automating processes” to deliver their organizations’ business goals in the next five years.



Source: The Future of Jobs Report / 2023 / WEF

16. The surveyed organizations consider “improving talent progression and promotion processes”, “higher wages”, and “reskilling and upskilling as the top 3 ways to increase talent availability in their organization.



Source: The Future of Jobs Report / 2023 / WEF

5. What Impacts Technology Adoption Policy:

From the outset, it is necessary to take note of the following four important quotations from the World Bank’s 2022 published report (Bridging the Technological Divide / Technology Adoption by Firms in Developing Countries):

- A. “Productivity accounts for half of the differences in gross domestic product per capita across countries. Identifying policies that stimulate productivity is thus critical to alleviating poverty and fulfilling the rising aspirations of global citizens”.

- B. “Technological catch-up happens through firms. Firms are the prime source for adopting more sophisticated technologies to be applied in the production of goods and provision of services”.
- C. “Workers can have access to higher-productivity jobs and countries can achieve higher prosperity through the adoption of more sophisticated technologies”.
- D. “Yet around the world, there is a large technological divide across firms. This divide is reflected in low productivity levels and a lack of better-quality jobs—particularly in developing countries, where the number of enterprises per worker relatively close to the forefront of technology sophistication (the technology frontier) is quite low”.

Relative to the above-mentioned quotations, it is also worth noting that understanding what drives firms to invest in the adoption of technology is not easy. Indeed, many factors are important. While some of these factors are internal to the firm, others are external.

External Factors: These include “market dynamics and the regulatory environment, as well as access to funding to finance technology projects. The supply of knowledge and technology solutions from other firms or from public institutions is also very important. All of these factors affect the decision to adopt and the diffusion of existing technologies”. Naturally, access to an enabling infrastructure is also important.

Internal Factors: These include the “knowledge and know-how accumulated and implemented through management and organizational practices, as well as the information available and biases of the entrepreneurs in the decision to adopt a technology”.

6. Recommendations

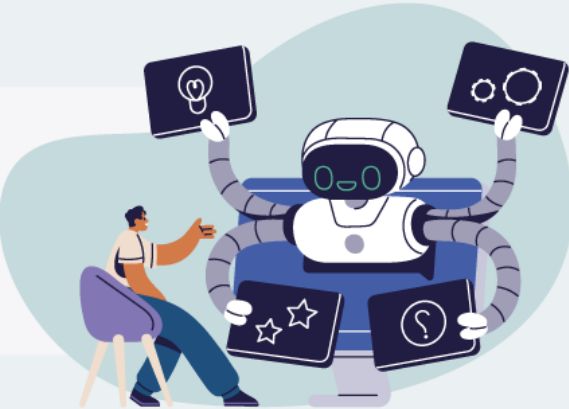
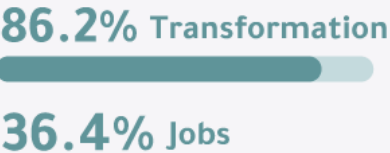
Ultimately, the shifts in jobs, skills, and technology have a huge impact on governments and companies, as well as on individual workers. Therefore, it is necessary:

1. To develop the education curricula to focus more on critical, analytical and creative thinking skills, and enable students to use the latest technological tools such as artificial intelligence and others to keep abreast of the rapid developments in the labor market.
2. To develop national policies and strategies related to employment in ways that reflect the changing nature of the future jobs, and to identify suitable talents to enhance growth, and provide a clear roadmap for the procedures required to keep pace with the major changes that may occur in jobs and skills.

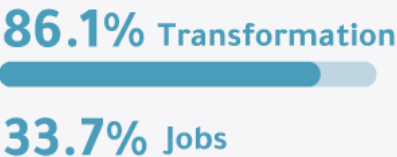
3. To accelerate the implementation of the economic modernization vision's initiatives which are related to improving the quality of education and training outputs and to supporting technological progress in local industries and services at the same time. The objective is this effort is maximizing the benefits from the presence of advanced technology and a capable national workforce. In addition, it is important to have in place a continuous evaluation of the level of progress in the implementation of the vision's initiatives.
4. Companies must be informed of modern working methods, and motivated to adopt advanced and pioneering technologies in services and production processes. This effort should be in line with the aspirations of the economic modernization vision's creation of new job opportunities which are compatible with the needs and requirements of time and technological progress.
5. Local companies should adopt best practices to attract and retain talent, including the adoption of the concept "career advancement and promotion", and a "fair wage policy" for those with advanced skills and distinguished talents. In addition to investing in skills development, reshaping, and upgrading them continuously and periodically to better respond to global production processes and requirements is important.
6. The young should be encouraged to keep up with the leading technological skills by enrolling them in specialized training courses. In addition, they should be encouraged to apply for technical certificates that rely on analysis, programming, and artificial intelligence.
7. To sum up, the responsibility of progress and development in technology and skills rests not only on governments, but also requires joint and effective action by all institutions and individuals in society, including business owners, workers, chambers of commerce and industry, trade unions, and civil society institutions.

Organizations’ perspective on the factors affecting the transformation process in their business and its expected impact on jobs over the next five years.

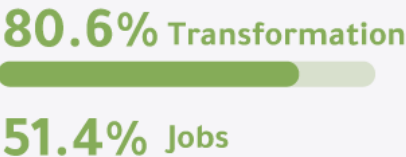
Increased Adoption of New and Frontier Technologies



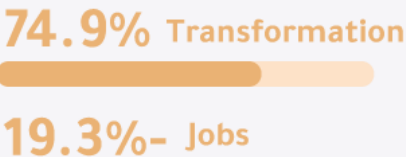
Broadening Digital Access



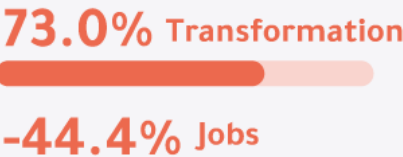
Broader Application of Environmental, Social, & Governance Standards



Rising Cost of Living for Consumers



Slower Global Economic Growth

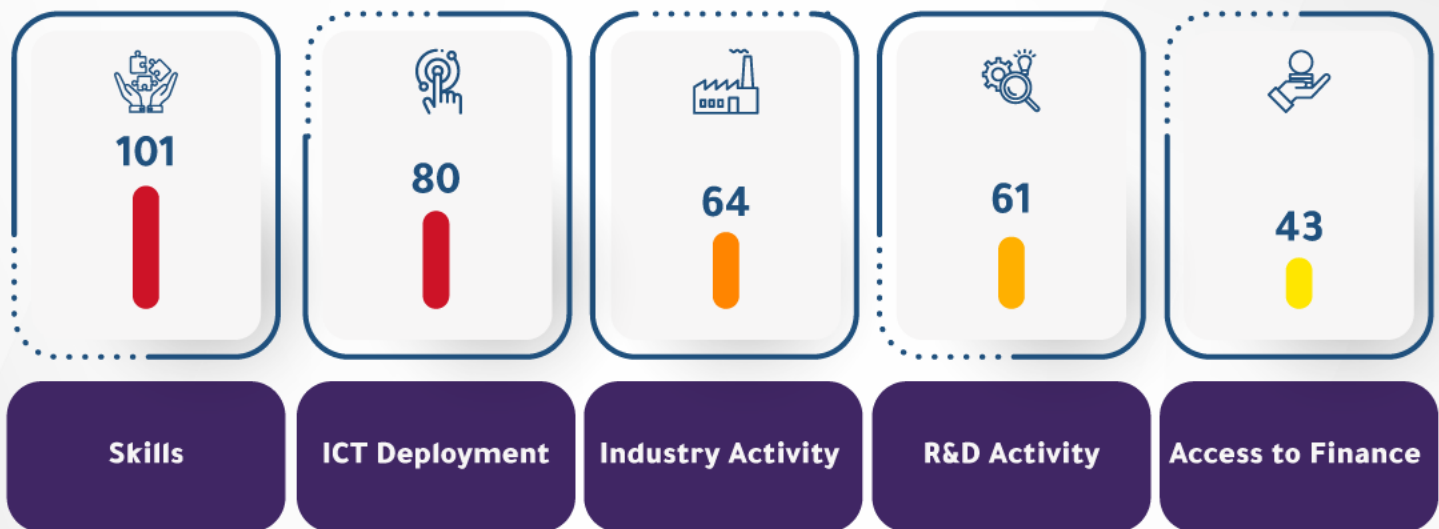


The Frontier Technology Readiness Index is part of the Technology and Innovation Report of the United Nations Conference on Trade and Development (UNCTAD), which aims to measure the readiness and ability of countries to use, adopt and adapt leading technologies equitably.



Jordan's global ranking fell by 16 points, from **64/158 in the 2021 report**, to **80/166 in the 2023 report**.

Jordan's ranking in the sub-Indicators



Jordan's ranking in the Frontier Technology Readiness Index (International)



Jordan's ranking in the Frontier Technology Readiness Index (Arab countries)





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