

# Endnotes

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- 1 Organisation for Economic Co-operation and Development (OECD), 2019.
- 2 World Bank, 2019.
- 3 A score that measures the number of tasks per job, and how these tasks are automated using AI.
- 4 Leopold, Ratcheva, and Zahidi, 2018.
- 5 This is done through screening job descriptions posted online for jobs that are formal, informal, full-time, part-time, temporary, fixed, private and public sector.
- 6 Of the 2,941 jobs listed in the International Standard Classification of Occupations (ISCO) classification, the Skills Monitor data set includes 2,596 jobs, which account for 88 per cent of ISCO jobs. Data is sourced from online hubs at the regional and national levels, including various types of jobs in the formal and informal sectors, and in the public and private sectors when relevant.
- 7 <https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/>.
- 8 [www.sdgmapping.auckland.ac.nz/](http://www.sdgmapping.auckland.ac.nz/).
- 9 Their total frequency reached 2,674,420 for 1,303,043 job advertisements, averaging two skills per job. The low number of required skills for a job is mainly due to the high number of poorly drafted job descriptions/advertisements in the Arab region, where job-related tasks and skills are often not mentioned. With more elaborate job descriptions, the average number of skills extracted reaches around nine skills per job description. Despite this particularity of the Arab online job market, thousands of skills are frequently demanded, and their trends seem assertive.
- 10 ESCWA and International Labour Organization (ILO), 2021.
- 11 Ibid.
- 12 <https://miskschools.edu.sa/>.
- 13 [www.universityworldnews.com/post.php?story=#20180529143046854:-:text=Egypt's20% cabinet20% has20% approved20% a,boosting20% the20% employability20% of20% youth.](http://www.universityworldnews.com/post.php?story=#20180529143046854:-:text=Egypt's20% cabinet20% has20% approved20% a,boosting20% the20% employability20% of20% youth.)
- 14 <http://wam.ae/en/details/1395302694252>.
- 15 [http://skills.gov.ae/game/Futurefit?\\_locale=en](http://skills.gov.ae/game/Futurefit?_locale=en).
- 16 [www.arabcoders.ae/](http://www.arabcoders.ae/).
- 17 [www.actvet.gov.abudhabi/en/Pages/default.aspx](http://www.actvet.gov.abudhabi/en/Pages/default.aspx).
- 18 <http://mola.gov.om/>.
- 19 [www.youth.om/en](http://www.youth.om/en).
- 20 [www.eversheds-sutherland.com/documents/global/middle-east/Jordan\\_Defence\\_Order\\_No\\_6.PDF](http://www.eversheds-sutherland.com/documents/global/middle-east/Jordan_Defence_Order_No_6.PDF).
- 21 [www.moroccoworldnews.com/304482/06/2020/morocco-prepares-draft-law-to-formalize-remote-administrative-work](http://www.moroccoworldnews.com/304482/06/2020/morocco-prepares-draft-law-to-formalize-remote-administrative-work).
- 22 [www.anpr.tn/national-ai-strategy-unlocking-tunisia-capabilities-potential/](http://www.anpr.tn/national-ai-strategy-unlocking-tunisia-capabilities-potential/).
- 23 [www.universityworldnews.com/post.php?story=20210131063348120](http://www.universityworldnews.com/post.php?story=20210131063348120).
- 24 <https://u.ae/en/information-and-services/jobs/future-skills-for-youth/special-programmes-for-developing-future-skills>.
- 25 <https://e.gov.kw/sites/kgenglish/Pages/HomePage.aspx>.
- 26 [www.mohre.gov.ae/en/the-national-self-employment-platform.aspx](http://www.mohre.gov.ae/en/the-national-self-employment-platform.aspx).
- 27 [www.mohre.gov.ae/en/wajheni.aspx](http://www.mohre.gov.ae/en/wajheni.aspx).
- 28 [www.unicef.org/jordan/media/3481/file/Briefing20%Note20%-20%Social20%Enterprise.pdf](http://www.unicef.org/jordan/media/3481/file/Briefing20%Note20%-20%Social20%Enterprise.pdf).
- 29 <https://tieg.gov.eg/>.
- 30 [www.ebrd.com/cs/Satellite?c=Content&cid=1395276191034&d=Mobile&pagename=EBRD2%FCContent2%FCContentLayout](http://www.ebrd.com/cs/Satellite?c=Content&cid=1395276191034&d=Mobile&pagename=EBRD2%FCContent2%FCContentLayout).
- 31 [www.afdb.org/en/documents/mauritania-vulnerable-youth-employability-and-socio-economic-integration-support-project-project-appraisal-report](http://www.afdb.org/en/documents/mauritania-vulnerable-youth-employability-and-socio-economic-integration-support-project-project-appraisal-report).
- 32 [www.unicef.org/lebanon/press-releases/ministry-education-and-unicef-promote-inclusive-education](http://www.unicef.org/lebanon/press-releases/ministry-education-and-unicef-promote-inclusive-education).
- 33 ESCWA is using the EMSI Burning Glass machine learning model to detect skills.
- 34 The percentage of unique jobs from the total number of jobs as per ISCO classification is 88 per cent.
- 35 Clerical staff handle a general set of administration tasks, including typing, printing, appointments, meeting minutes, answering calls, and running office errands.
- 36 Communications is a required skill in almost 150,000 jobs from around the region.
- 37 The model underpinning the present report classifies strategic planning and customer satisfaction as hard skills (figure 5), since they require an additional layer of specialization that must be learned.
- 38 Burning Glass, 2021.

- 39 Examples of labour-intensive occupations are market gardening and crop growing, animal production, subsistence mixed crop and livestock farming, and subsistence fishing, hunting, trapping and gathering.
- 40 Of the 20 Arab countries for which data is available, the lockdown percentage is the share of Arab countries that imposed a lockdown during each of the studied months.
- 41 "National e-Accessibility Policy: Template for the Arab Region", ESCWA, 2020, p. 7, <https://e-inclusion.unescwa.org/sites/default/files/resources/national-e-accessibility-policy-template-arab-region-english.pdf>.
- 42 Ibid., p. 4.
- 43 ESCWA, 2021.
- 44 World Health Organization, 2021.
- 45 <https://e-inclusion.unescwa.org/node/1203>.
- 46 ESCWA, 2018.
- 47 ESCWA and ILO, 2021.
- 48 Examples of the extracted root words in a job description that target women include the following: "agree", "affectionate", "cheer", "commit", "compassion", "considerate", "emotional", "feel", "flatterable", "gentle", "honest", "interpersonal", "interdependent", "kind", "kinship", "loyal", "modesty", "nag", "pleasant", "polite", "quiet", "sensitive", "submissive", "support", "tender", "trust", and "understand". Examples of the set of root words that target men include the following: "active", "adventurous", "autonomous", "battle", "champion", "confident", "decisive", "dominant", "driven", "fearless", "greedy", "headstrong", "impulsive", "independent", "objective", "reckless", "self-confident", "self-reliant", "self-sufficient", "stubborn", and "superior".
- 49 Research Ferry, 2016 shows that women surpass men when it comes to utilizing soft skills essential for superior business performance and effective leadership. Women scored higher than men on almost all emotional intelligence competencies. Kochhar, 2020 similarly reported that men are more likely than women to acquire jobs that require mechanical skills, whereas the opposite is true when it comes to jobs that entail a high degree of proficiency in social skills.
- 50 ESCWA, 2017.
- 51 ESCWA, 2018.
- 52 Labour Force and Household Living Conditions Survey of Lebanon, 2018-2019.
- 53 Ibid.
- 54 The e-accessibility score is an index with a value between 0 and 1. It is calculated based on the Web Content Accessibility Guidelines (WCAG) 2.1, which has four key principles: perceivable, operable, understandable, and robust (POUR). More information on WCAG is available at [www.w3.org/TR/WCAG21/](http://www.w3.org/TR/WCAG21/).
- 55 ILO, 2019a.
- 56 In figure 24, we further narrow our analysis to the country levels. We specifically explore results for Egypt, Saudi Arabia and the United Arab Emirates given that they possess the highest number of online job postings stating years of experience. In both Egypt and the United Arab Emirates, results are similar to the aforementioned findings at the regional level, whereby a large share of online job openings target young people. However, newly created jobs are not enough to absorb the flux of new entrants into the labour market. As reported by the ILO (2019b) model estimates, the 2020 unemployment rate for Arab countries was estimated at 42.1 per cent among the region's young women, and 19.8 per cent among the region's young men. The youth bulge experienced by Arab countries must therefore be considered a top priority in countries' national development planning. Addressing this challenge would create enough jobs to absorb the flux of new entrants into the labour market.
- 57 ESCWA, 2020.
- 58 Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- 59 We used the University of Auckland SDG Keywords Mapping to link jobs to the SDGs. More details on the methodology are available at [www.sdgmapping.auckland.ac.nz/](http://www.sdgmapping.auckland.ac.nz/).
- 60 Full details of the methodology used to link the analysed jobs to the SDGs are available at [www.sdgmapping.auckland.ac.nz/](http://www.sdgmapping.auckland.ac.nz/).
- 61 ESCWA, 2020.
- 62 Singh, H. V., Gupta, K., Sudan, R., and Singh, R., 2018. Product Space Analysis and Industrial Policy. Brookings. Available at [www.brookings.edu/wp-content/uploads/08/2018/Product-Space-Analysis-and-Industrial-Policy.pdf](http://www.brookings.edu/wp-content/uploads/08/2018/Product-Space-Analysis-and-Industrial-Policy.pdf).
- 63 Calculations are based on the top 50 hard/technical skills per occupation. After calculating pairwise the number of skills shared with their respective frequencies for each occupation, the links of each node are limited to the top 25 per cent.
- 64 International Monetary Fund, 2021.
- 65 Data is based on the ILO nowcasting model. [www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms\\_817042.pdf](http://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_817042.pdf).
- 66 ESCWA and ILO, 2021.
- 67 Panetta, 2016.
- 68 Ibid.