



How to: Future Skills in Tunisia

Digital Transformation Centre Tunisia



Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Our second white paper:



EINSTEIN
CENTER
Digital Future

Digital Talent:
Mapping the demand for
digital skills in Tunisia



I - Introduction

Tunisia has experienced high unemployment over the past years. The overall unemployment rate stands at 16% and is even higher for university graduates at around 30% (National Institute of Statistics, 2020). While there are likely multiple causes driving this, a likely factor is the existence of a mismatch between the demand by employers and the skills supplied by Tunisian job seekers (Asaad et al., 2018). This explanation is supported by evidence from the World Bank Enterprise Survey, which finds that 34.8% of Tunisian firms identify an inadequately educated workforce as a major constraint – a substantially higher rate than across other countries (20.5%; The World Bank, 2020).

Digital skills have been identified as an area that potentially suffers from this labor market mismatch in North Africa (AUC & OECD, 2021). Indeed, in a nation-wide survey, Tunisian firms named technical and digital skills as by far the most important competency when filling job posts (IACE, 2019). To understand this potential skills mismatch, this article investigates the specific digital skills that are currently in demand on the Tunisian labor market using a novel dataset. We collect data from the largest Tunisian online job platform through web crawling between May 2020 and May

2021, obtaining a sample of 59,254 online job ads.

To the best of our knowledge, this paper is the first to examine the demand for digital skills in North Africa using data from online job advertisements. It is also the first study using online job ads data in a middle-income country, as previous literature has focused exclusively on online job ads in high-income countries (e.g., Deming & Kahn, 2018; Deming & Nozay, 2020). We find that 42% of job ads require some digital skills. The category of skills mentioned most often in our dataset is “programming,” which appears in 16% of all job ads. Moreover, we find that digital skills go hand in hand with a series of non-digital competencies, such as cognitive and social skills. This analysis helps identify potential skills gaps, direct students and jobseekers towards employable roles, and support educational and labor market policy more generally. Policymakers may benefit from learning about the demand for digital skills in Tunisia. In fact, the Tunisian government has already proven interest in promoting the digital sector and creating high-quality jobs as it has established a ministry especially dedicated to ICT and the digital transformation (MITCEN).

Our approach to study the demand for digital skills



Used **online job ads** to study what digital skills employers write in job offers

Advantages:

- Public and up to date
- Granular and detailed
- Directly observe skill mentions

Limitations:

- Covers firms currently recruiting
- Do firms know what they need?
Do they phrase skills correctly?

Collecting data from online job offers

- Used **web-crawling** to obtain >280k ads
- Deduplicated, focused on French-language ads (92%) → 59,254 ads
- Extracted text on skills

Responsable Marketing Digital / E-Commerce

La Manouba CDI Temps-plein

Il y a 2 jours

Work conditions

Location

Skills required

Société commerciale, sise à Denden-Manouba, désire recruter un chargé de marketing et de communication digital dont la mission;

- Valoriser l'image de la société, assurer sa présence sur le web et générer des visites de prospects qualifiés sur le site internet et les réseaux sociaux;
- Produire l'ensemble des contenus numériques et multimédias (rédactionnels, visuels, photos, vidéos...) et les diffuser avec une approche cross-canal (Réseaux sociaux, sites web, mini-sites, emailings ...);
- Mise en place de stratégie marketing, développement et la gestion du site web;
- Animer les réseaux sociaux et faire grandir les communautés de la société;

Exigences de l'emploi

De formation multimédia ou infographie, avec une spécialisation en e-marketing/e-communication/marketing stratégique

Digital skills categories

- Programming – web, app and software development
- Technical support and IT – system administration, IT support and security
- Office software – common IT software (e.g. Microsoft Office)
- Graphic design and digital content creation – Photoshop, web content
- Data science and data engineering – Big Data, cloud computing, Python
- Digital marketing – web content optimization (SEO), e-marketing
- Data and business analysis – Power BI, Microsoft Dynamics, visualization
- Machine learning and AI – random forests, deep learning, etc.

Adapted from Djumalieva and Sleeman (2018)

Non digital skills categories

- Social – communication, teamwork, French/English, negotiation
- Cognitive – analyzing, thinking, researching, solving, statistics, mathematics
- Character – autonomy, organization, detail-oriented, initiative, motivated
- Management – supervising, leadership, mentoring, coaching
- Creativity – creative, creativity
- Writing – editing, drafting reports
- Finance – budgeting, accounting, managing budgets
- Business systems – Six Sigma, business planning, business strategy, KPIs
- Customer service – sales, patiences, clients, customers

Overview

42%

Of ads including at least one digital skill



27%

Of ads including more advanced digital skills

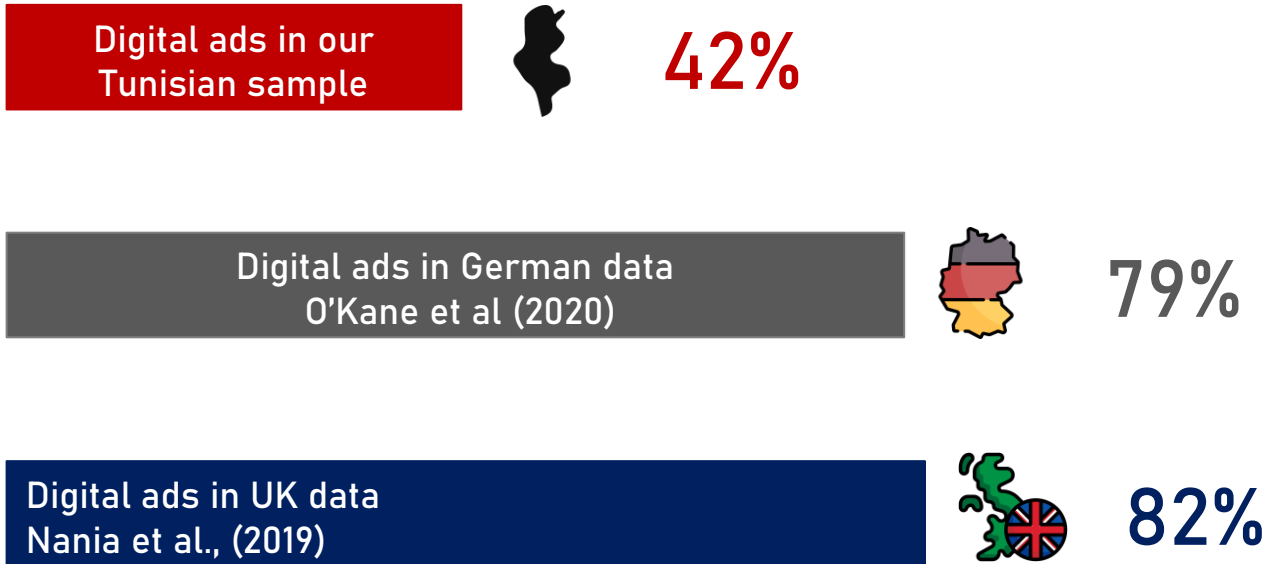


1 in 2

'Digital ads' are in the capital

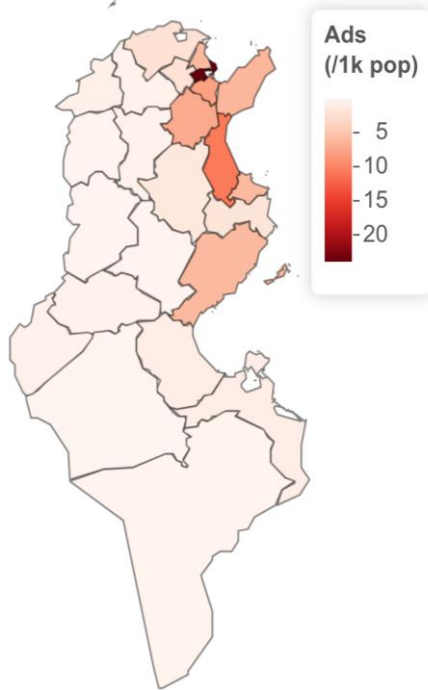


How do our results compare to other countries?



Where are 'digital ads' located?

Figure 4: Ads by governorate

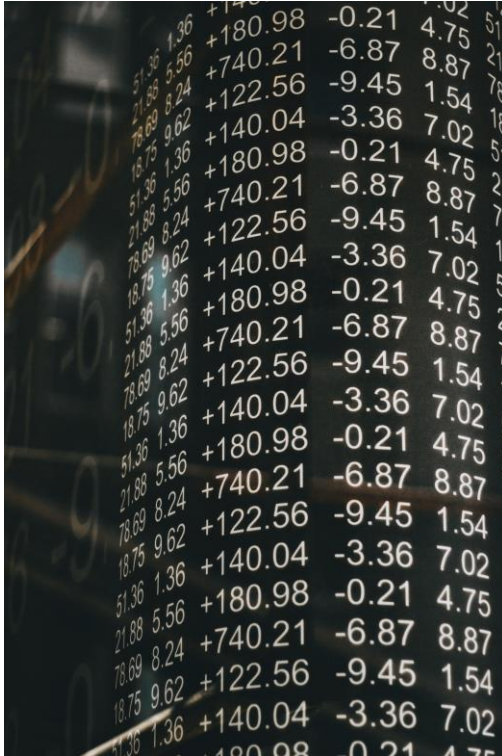


52% of all 'digital ads' are advertised in the capital

Other hubs for digital job offers include: *Ariana*, *Ben Arous*, Nabeul, Sousse, *Manouba* and Monastir

The concentration of digital ads in the capital region cannot be explained only by differences in job creation – e.g., if compared to ANETI or IACE vacancies data

The value of job ads data



i Today's results are but one example of the value of **job offers' data:**

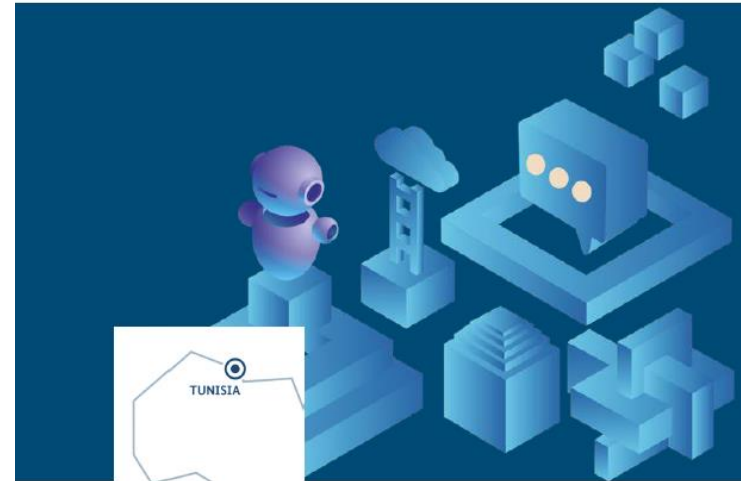
- Up to date
- Granular information on job requirements

ii Many other potential **applications:**

- Investigate '*working from home*' trends after the pandemic
- Observe labor market trends
- *Nowcasting*

Next step: Tunisia Foresight Journey

What COULD and what SHOULD Tunisia and its digital economy look like in 2035? This was the guiding question of the foresight journey on which Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH embarked with multiple stakeholders that are shaping the future of Tunisia. Jointly, a visual future scenario was developed and discussed to create a visionary basis for recommendations on how the Tunisian society can develop the skills that will be needed in 2035. This report entails the main results of the foresight journey, including the visual future scenario, an accompanying narrative and thoughts regarding future jobs and skills in the digital economy. First recommendations are formulated, including steps on how the foresight journey could - and should - be continued.



Smart Futures Tunisia

Exploring the Digital Skills of Tomorrow



Thank you for your attention!

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