

Identifying shortages in non-EU countries

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Growing use of online job adverts

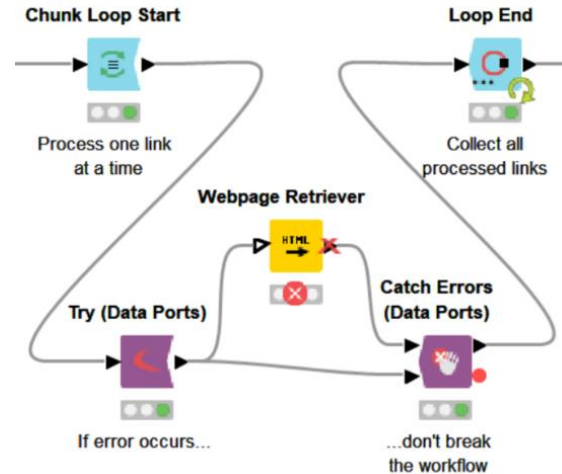
- To set up a skills partnership, need to have an idea of shortages in the origin country
- Some of the best shortage measures use vacancy data (van Smoorenburg, 2024), which may be scraped from the web
- Online job adverts (OJA) are not the same as vacancies (e.g. Plaimauer, 2024) but might still be very useful:
- OJA can capture the evolution of actual vacancies (Evans et al., 2023)
- aspects of OJA can predict employers' assessments of shortages (Brown et al., 2024)



Web scraping vacancy data

Requires learning XML, the language of queries that work on the HTML code of websites

Can then be run with various software solutions (Python, R...). Here, KNIME is used, a free platform with a user interface





First set of focus countries

Table 2: Websites used in the data collection thus far

Albania	Algeria	Kosovo*	Moldova	North Macedonia
gjirafa.com	algerie.tanqeeb.com	gjirafa.com	angajat.md	gjirafa.com
njoftime.al	bayt.com	kosovajob.com	bestjobs.eu	kariera.mk
njoftimefalas.com	emploipartner.com	lyppune.com	md.trud.com	njoftimeperpune.com
njoftime.com	naukrigulf.com	merrjep.com	rabota.md	pazar3.mk
njoftimerperpune.com		ofertapune.net		vrabotuvanje.com
njoftime365.com		portalpune.com		
		shpalljepune.com		

Note: As some websites ultimately turned out to be inaccessible (especially in Albania and Kosovo*), not all websites in the table are covered by the database. The main access problem is a changed *namespace*.

*This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.



A word on data issues

Huge heterogeneity – every website offers different information

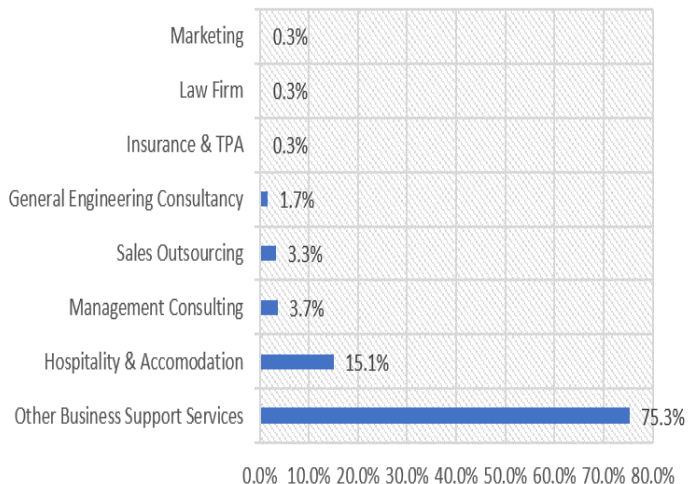
- All websites systematically include the job title and location
- Many have information on wages (in €, \$, local currency...) and full-time/part-time
- Some cover education/experience
- Only few cover sectors
- Also sometimes available: whether work is remote, how many jobs to be filled, date when posted
- However, also unsystematic information in the vacancy text



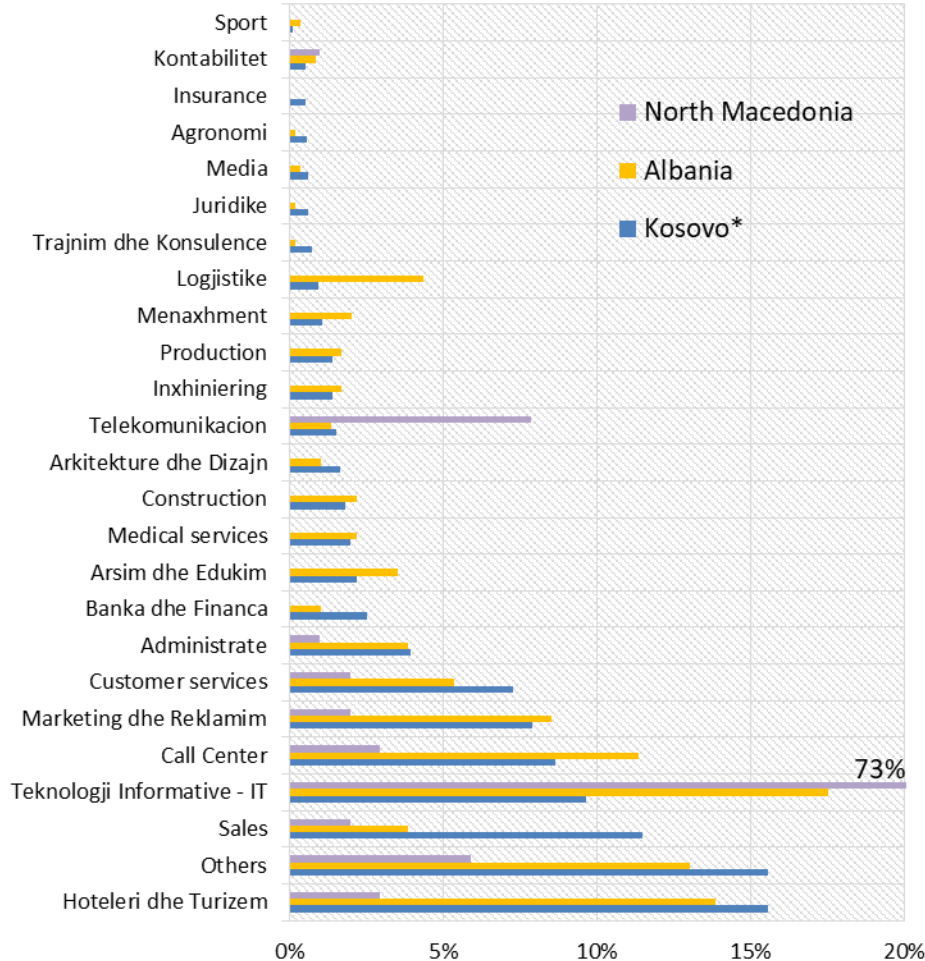


Sector information

sectors indicated on bayt (Algeria)



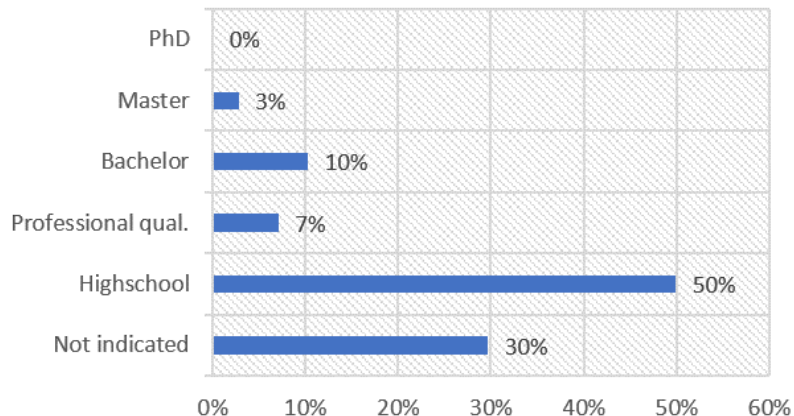
Collected from gjirafa.com



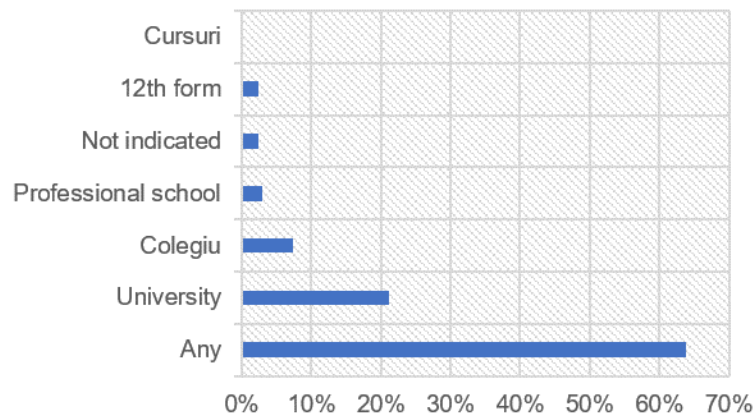


First skill measure: educational attainment

Education expected on njoftimefaldas
(Albania)



Education expected on
rabortamd (Moldova)

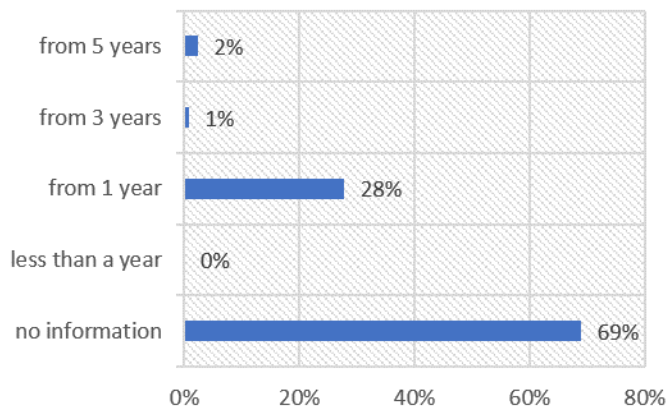


In both Albania and Moldova, only about 20% of vacancies posted (on these sites) require a higher degree. Just high school or “any” level is typically acceptable

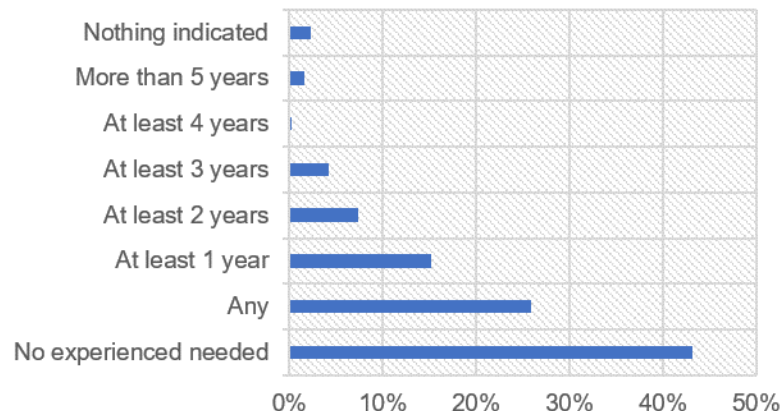


Second skill measure: prior work experience

Prior experience expected on
mtrud (Moldova)



Prior experience expected on
rabortamd (Moldova)



These two sites for Moldova agree in so far as

a) around 30% of vacancies require prior experience of 1 year or more

b) Around 70% of vacancies do not require or do not specify prior experience



Potential use for migration policy

If the web scraped data can be translated into some indicator of skill shortages, this will help

- Identify skill shortages in both destination and origin countries – then establishing a joint training centre could benefit both
- Steer policy makers to potential sectors, occupations, and partner countries for an EU Talent Partnership
- Monitor how skill shortages evolve over time – also to assess the impact of EU Talent Partnerships

NEXT STEPS: MAKING THE DATA COMPARABLE

The next key challenge is to transform the very heterogeneous data into some measures that can be compared across countries and time.

1. The already limited information on sectors seems hard to place into international classifications
2. By contrast, the specific job titles may be linked to international classifications of occupations, using “libraries” of classified jobs (in various languages, so quality of translation matters)
3. Skill levels: those defined for classified jobs, or from analysis of full vacancy text
4. Target indicator: vacancy rates, e.g. by occupation. When vacancy rates themselves are still prone to errors, the **change** in vacancy rates over time may be a useful indicator

Thanks for your attention

Also see 1st working paper (from Task 3.3):

Linking shortages and migration aspirations

www.gs4s.eu/working-paper-series

