



CEDEFOP

European Centre for the Development  
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International Labour Office  
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Oficina Internacional del Trabajo

# Guide on the use of labour market information for matching and anticipation of skills

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# Objectives

- Guidance through **labour market monitoring and analyses of skills supply and demand at national level**
- **Exploitation of the data sources and tools** which are available in the country - **labour market and education indicators**
- Hints how to improve the data sources to make them more **useful for informed decisions by individuals, companies and institutions** in the labour market including evidence-based policy making
- **Guidepost for further information sources** - detailed information on how to develop these information sources or how to use them in a context of specific institutions is the aim of other guides in the series
- To **build a common knowledge base for experts and commissioners**

# Users of information on skills supply and demand

- **Individuals**

- What education should I or my child take?
- If I lose a job how hard it will be to find a new one?
- Would a retraining course improve my chances to get a better job?

- **Companies**

- Should we focus on retraining our current staff or on new hirings when we need people with different skills for our new product?
- Is there qualified workforce available in the region where our company consider running a new business?

- **Policy makers**

- Is there a need for special support for graduates from different education levels and fields at the PES?
- Is there a need for retention measures for specific occupation?
- Is there a need to revise some education programmes? In which fields and levels? Which skills are more important to develop?
- Is there a need for introduction of adult retraining programs in some fields?

# Structure of the guide

1. Introduction
2. **Why matching skills supply with current and future labour demand matters?**
3. Measuring skills supply and demand and identification of mismatch
4. Dissemination and use of the LMI in the context of better matching

# Why matching matters?

- Perfect matching is impossible
- Negative consequences of poor matching for individuals, companies, countries
  - Lower earnings
  - Lower productivity
  - Low returns of investments in skills development
  - Additional expenses – retraining, unemployment benefits
  - Loss of competitiveness

# Labour market information and analysis system

To help the actors in the labour market make informed decisions

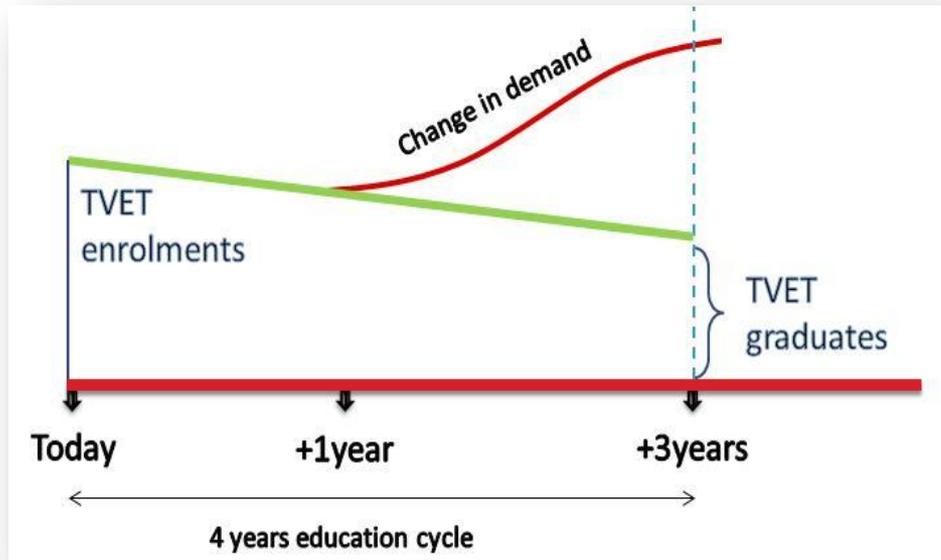
- Responsible for labour market analysis
- Responsible for monitoring and reporting on employment and labour policies
- Provides a mechanism to exchange information or coordinate different actors and institutions that produce and utilize labour market information and analysis

3 main components:

- Collection and compilation of data and information
- Analytical capacity and tools
- Institutional arrangements and networks *(Sparreboom, 2013)*

# Need for cooperative early warning system

- Changes in skills supply take time



- Involvement of stakeholders
  - national skills/HR councils
  - sectoral bodies

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# Measuring skills – proxy variables

- **Qualifications** – degrees, diplomas, certificates etc. acquired in education or training system or in the system of recognition learning outcomes. Often expressed as level and field of highest education attained.
- **Competencies/skills** – characteristics of individual which refer to pre-requisites and abilities of individuals for performing tasks (generic and job-specific competencies)
- **Occupations** – sets of jobs similar in terms of tasks and duties
- **Tasks** – activities performed in jobs (manual tasks, reading, writing, communication with colleagues or customers, work with computer, job-specific tasks)

**Use of standard classifications – ISCO, ISIC, ISCED**

# Sources of information for skills mismatch identification

## A. Standard statistics useful for skills analysis

- Labour force (and other) household surveys
- PES statistics on vacancies and job seekers
- Enterprise statistics
- Education statistics
- Census
- Other administrative data (tax, social security etc.)

## B. Skill-specific data sources

- Establishment skills surveys
- Tracer studies
  
- Qualitative data on skills

## C. Secondary data sources

- Projections of labour supply and demand
- International databases

# Data audit

- Is the data source regular? Is its sustainability in future assured?
- How long are the time series? Are there significant breaks in series?
- Is the frequency sufficient?
- Are the data national/regional/local? Do they allow such breakdowns?
- Are they economy-wide or sector-specific?
- Are the data available in an appropriate form to all relevant stakeholders? (e.g. are they published in the breakdowns necessary, are the microdata sets shared etc.)

# Data source example

## Labour Force Survey

### Strengths

- Provide structural information on individuals (age, gender, education, occupation)
- Have potential to cover the informal employment

### Weaknesses

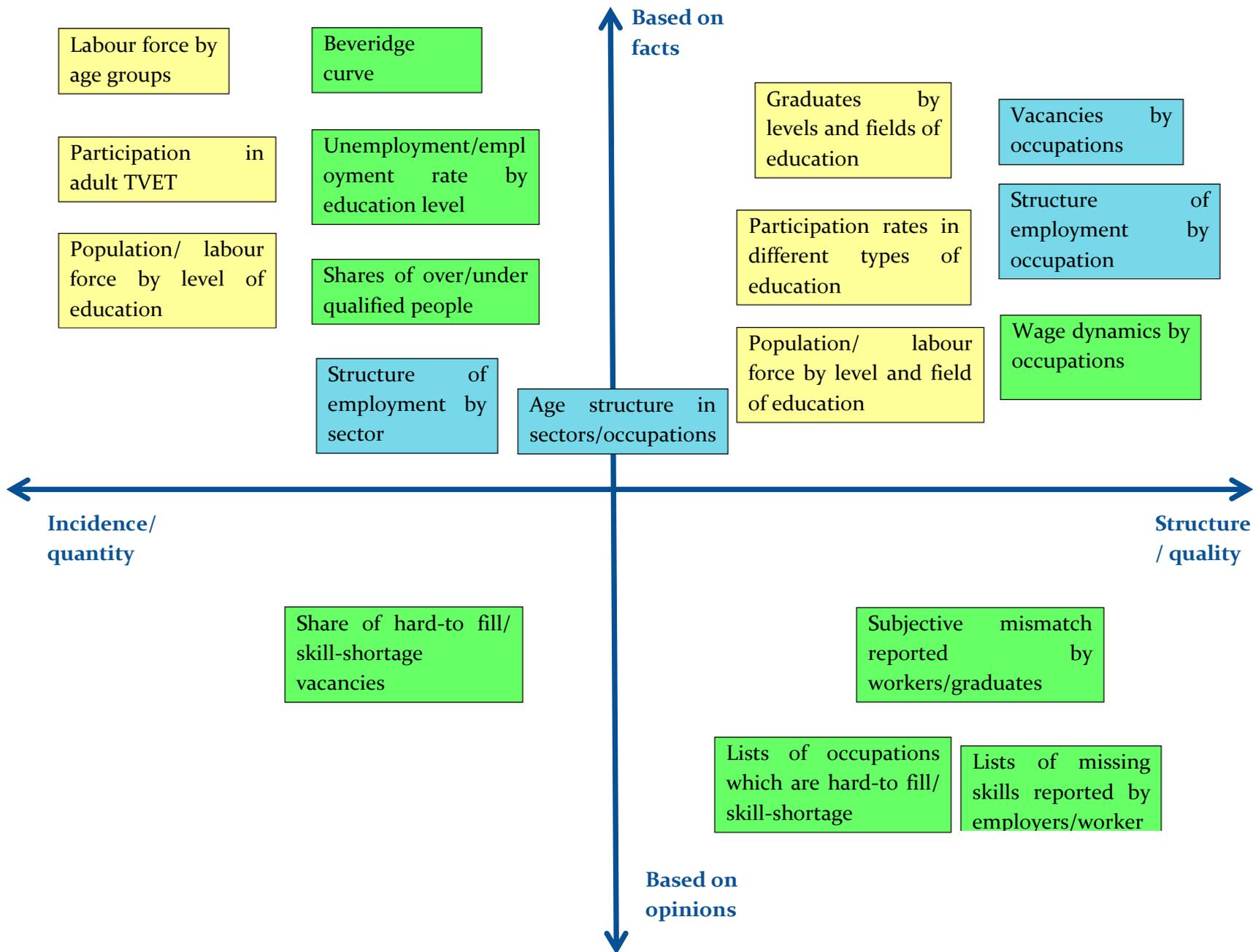
- Costly
- Usually do not cover population living outside households
- Covering remote areas may be difficult, in some countries only the urban population covered
- Need large samples to get robust data and enable detailed breakdowns

# Comparison of skills supply and demand

Mismatch = imbalance between demand and supply

BUT direct and precisely measured comparison is hardly possible because of a number of conceptual, methodological and data issues

- Comparison of trends rather than stocks
- Use of proxy indicators
- Incidence x structure of mismatch



# Demand

## Structure of employment by sector

Table 1. Employment of Jordanians by Economic Activity 1995 and 2006 (excluding the Armed Forces)

<i>Economic activity</i>	<i>Employment (000)</i>		<i>Change in employment 1995-2006 (%)</i>	<i>Employment share (%) in</i>	
	<i>1995</i>	<i>2006</i>		<i>1995</i>	<i>2006</i>
Agriculture	49.5	27.6	-44.2	7.2	2.9
Mining & Quarrying	7.8	6.1	-21.8	1.1	0.6
Manufacturing	96.0	114.2	19.0	13.9	12.0
Electric, Gas and Water Supply	13.4	14.2	6.0	1.9	1.5
Construction	55.0	60.9	10.7	8.0	6.4
Wholesale and Retail Trade	116.4	179.1	53.9	16.9	18.8
Hotels and Restaurants	12.4	23.8	91.9	1.8	2.5
Transportation	79.8	98.6	23.6	11.6	10.3
Financial Intermediation	16.2	21.5	32.7	2.4	2.3
Real Estate, Renting and Business Activities	18.4	52.2	183.7	2.7	5.5
Public Administration and Compulsory Social Security	67.8	83.8	23.6	9.8	8.8
Education	93.6	154.8	65.4	13.6	16.2
Health and Social Work	27.2	54.8	101.5	3.9	5.7
Other Community, Social & Personal Services	35.6	62.5	75.6	5.2	6.6
<b>TOTAL EMPLOYMENT</b>	<b>689.1</b>	<b>954.1</b>	<b>38.5</b>	<b>100.0</b>	<b>100.0</b>

Source: Al Manar, 2010b.

# Demand

## Vacancies by occupation

2013 Job vacancy rate, average weekly hours worked, and average hourly wage by occupation:  
Alberta and economic regions

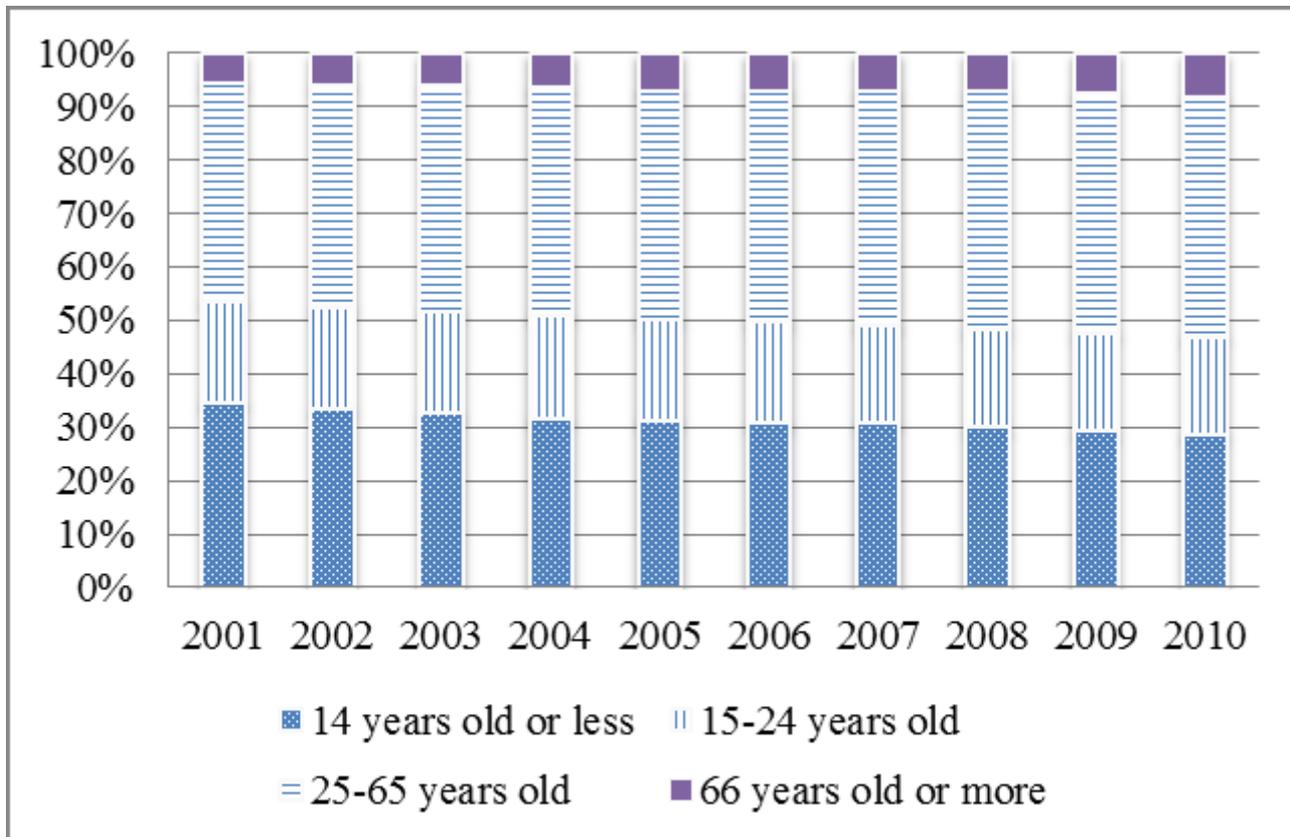
Alberta	Average weekly hours worked	Average hourly wage	Job vacancy rate
<b>Provincial total:</b>	<b>36.9</b>	<b>\$26.58</b>	<b>4.4%</b>
<b>Occupation</b>			
Landscape & horticulture technicians & specialists	41.7	\$22.93	14.3%
Drillers & blasters - surface mining, quarrying & construction	62.3	\$33.04	14.0%
Food service supervisors	38.7	\$14.55	13.3%
Non-destructive testers & inspectors	42.8	\$39.57	12.0%
Automotive mechanical installers & servicers	40.4	\$21.04	11.9%
Food counter attendants, kitchen helpers & related occupations	32.2	\$11.89	11.3%
Hairstylists & barbers	34.8	\$17.61	10.8%
Landscaping & grounds maintenance labourers	40.4	\$17.64	9.7%
Inspectors in public & environmental health & occupational health & safety	42.5	\$36.70	9.7%
Heavy-duty equipment mechanics	41.7	\$35.68	9.0%
Oil and gas drilling, servicing & related labourers	54	\$26.25	8.8%
Cooks	34.8	\$14.54	8.7%
General farm workers	44.4	\$18.23	8.4%
Motor Vehicle body repairers	40.8	\$28.20	8.3%
Contractors & Supervisors, Carpentry trades	46	\$35.69	8.2%
Labourers in metal fabrication	42.7	\$20.96	8.0%

*Source: Government of Alberta, 2012*

# Supply

## Age structure of population

Peru (2001-2010)



Source: Jaramillo, 2013

# Supply

## Structure of graduates (Croatia)

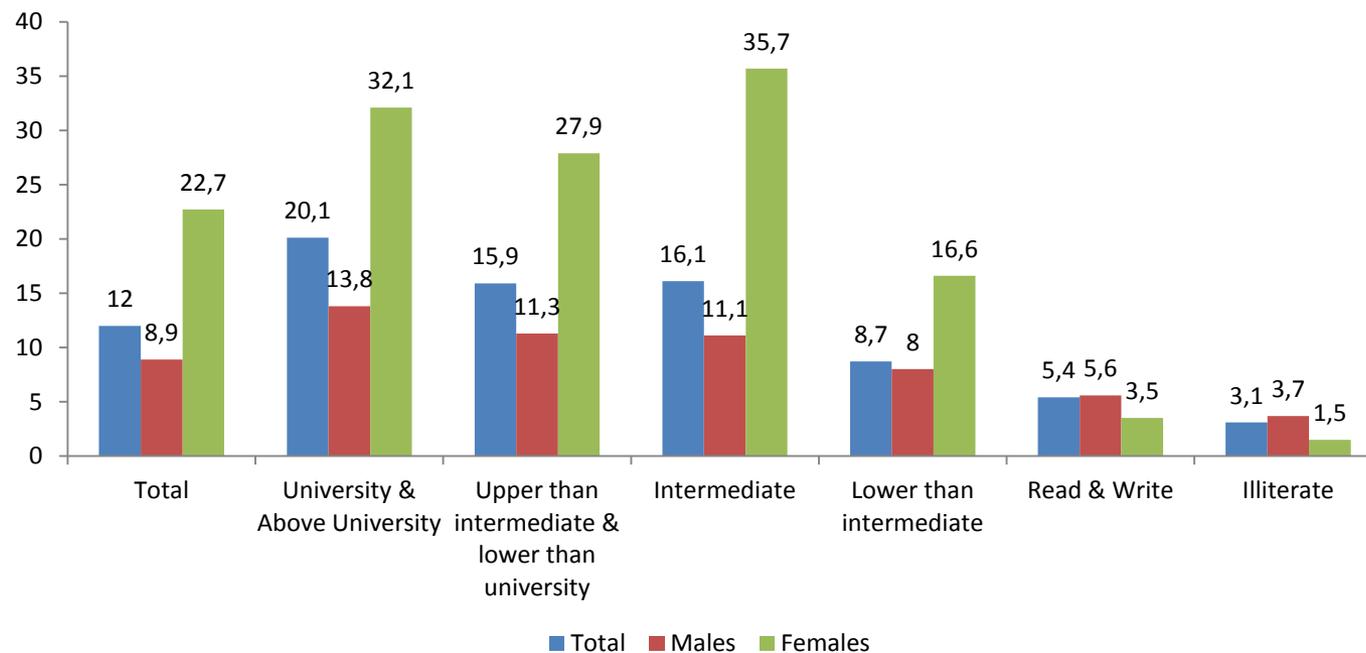
TABLE 2.15 GRADUATES IN TERTIARY BY FIELD OF STUDY AND GENDER (000s & %)

	2005		2006		2007		2008		2009	
	(000s)	%								
<b>Total population</b>										
Education	1.6	8.4	1.5	7.3	1.7	7.5	1.8	6.5	1.4	4.5
Humanities and arts	1.8	9.0	1.9	9.4	1.8	8.1	2.7	10.1	3.5	11.1
Social science, business and law	7.5	38.2	8.2	39.4	8.4	37.7	10.2	38.0	12.7	40.0
Science	1.2	6.0	1.3	6.3	1.5	7.0	2.5	9.2	3.0	9.3
Engineering, manufacturing and construction	2.3	11.9	2.4	11.5	2.6	11.7	3.7	13.7	4.8	15.0
Agriculture	0.6	3.0	0.8	3.6	0.7	3.1	0.9	3.4	0.9	2.8
Health and welfare	2.0	10.3	1.9	8.9	2.1	9.5	2.2	8.0	2.2	6.8
Services	2.6	13.2	2.8	13.5	3.5	15.6	3.0	11.0	3.3	10.4
<b>Total</b>	<b>19.5</b>	<b>100.0</b>	<b>20.7</b>	<b>100.0</b>	<b>22.2</b>	<b>100.0</b>	<b>26.9</b>	<b>100.0</b>	<b>31.7</b>	<b>100.0</b>

# Mismatch

## Unemployment rate by education

*Unemployment rates by education level in Egypt (2011)*

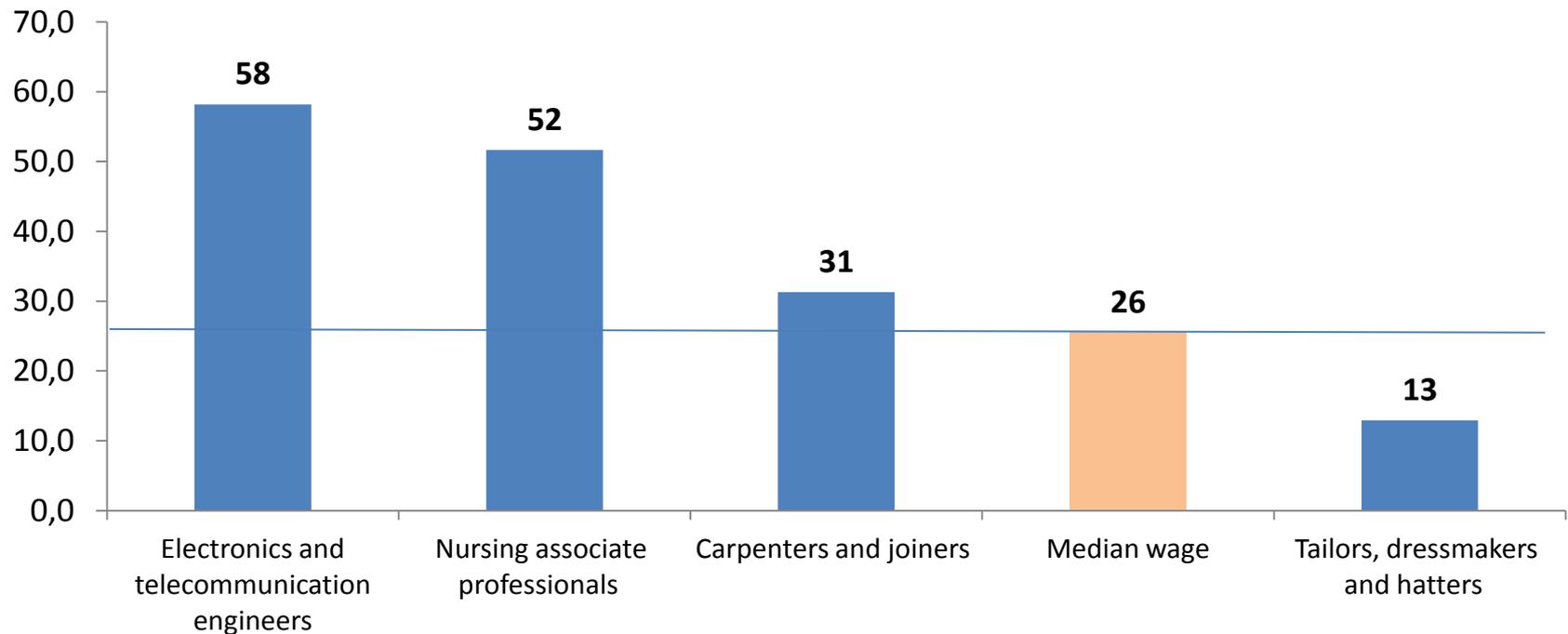


*Source: Central Agency for Public Mobilization and Statistics, 2013*

# Mismatch

## Wage dynamics by occupation

% increase of median wage in enterprises by occupation  
2005-2010, Czech Republic



# Mismatch

## Share of over/underqualified people

Table 18 Skills mismatch by occupational group (2010)

	No mismatch	Overqualified	Under-qualified
Officials of government and special interest organizations, corporate executives, managers, managing proprietors and supervisors	41.0	0.0	59.0
Professionals	99.6	0.0	0.4
Technicians and associate professionals	71.1	0.0	28.9
Clerks	13.7	79.8	6.5
Service workers and shop and market sales workers	38.3	37.2	24.5
Farmers, forestry workers and fishermen	16.9	8.7	74.5
Trades and related workers	36.3	18.2	45.4
Plant and machine operators and assemblers	42.0	24.7	33.2
Laborers and unskilled workers	62.8	37.2	0.0
Special occupations	31.0	69.0	0.0
<b>All Occupations</b>	<b>45.6</b>	<b>25.0</b>	<b>29.4</b>

Source: PEPM 2012

# Mismatch

## Skill gaps reported by employers

	% of staff reported as having skill gaps	share of employment (column %)	share of all skill gaps (column %)
overall	5	100	100
managers	3	20	11
professionals	4	11	9
associate professionals	5	7	6
administrative/clerical staff	5	13	11
skilled trades occupations	5	7	7
caring, leisure and other services	5	8	8
sales and customer services	8	13	19
machine operatives	6	7	8
elementary staff	8	15	20

Source: UKCES, NESS

# Mismatch

## Skill gaps reported by employers

*Share of employers seeing following skills as a reason for the talent shortage*

<b>Technical skills deficiencies (hard skills)</b>	
industry-specific qualifications/certifications - professional	16
industry-specific qualifications/certifications - skilled trades	11
Operating mechanical/industrial equipment	3
Computer/IT skills	3
Speaking/verbal skills	3
Foreign language	3
<b>Employability skills deficiencies (soft skills)</b>	
Interpersonal skills	6
Enthusiasm/motivation	6
Collaboration/team work	4
Professionalism (e.g. personal appearance, punctuality)	4
Flexibility/adaptability/agility	4
Ability to deal with ambiguity/complexity	3
Attention to detail	3
Problem solving & decision making	3

*(ManpowerGroup, 2012):*

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# Provision and use of information by policy makers

- Main cornerstone in **education and employment policies**
  - Longer-term changes of educational system (increase participation)
  - Development of curricula and National Qualification Framework
  - Training provision/apprenticeship programs for unemployed
  - Improvement of education and career guidance
  - Support of company training
  - Support of participation of adults in vocational education and training
  - Development of systems for recognition and validation of informal training
  - Development of cooperative institutional framework for gathering, processing, analysing and interpretation of current and skill needs and for long-term sustainability of policies oriented on skill mismatch reduction
- Important role of **other policies and strategies**
  - National Development Plans, Migration policies, Industrial policies

# Provision and use of information by policy makers

- Identification of problems should be based on labour market information (empirical evidence) and supported by cooperative analysis and discussion of the main issues by stakeholders
- The policy should focus on priority issues – solve the burning problems but also build on what has already been achieved and what can be a competitive advantage
- There are multiple causes of the mismatch problems and therefore multiple measures can contribute to their solution
- The policy needs to build on a shared vision, specific policies (education, skills, employment) should be interlinked and coherent with more general policies such as national development plans or industrial policies
- The policy formulation and implementation requires strong involvement of various actors

# Provision of information to general public

Ireland: Careerdirections (<http://lmi.fas.ie/>)



Austria

Qualifikationsbarometer

<http://bis.ams.or.at/qualibarometer/berufsbereiche.php>

US O\*NET:

<http://www.onetonline.org/>

Swedish Yrkeskompassen:

<http://www.arbetsformedlingen.se/For-arbetssockande/Yrke-och-framtid/Yrkeskompassen.html>

Czech Future Skills:

<http://www.budoucnostprofe.si.cz/en/index.html>

European Skills Panorama:

<http://euskillspanorama.ec.europa.eu/>

## Role of employment services and career guidance

# Providing information to the business

- Challenge in most countries
- Companies may use LMI for HR management, recruitment, decisions on investments; in reality the level of detail is often insufficient
- Evaluation of attractive location for investments
  - WEF, World Bank, consulting companies
  - Reliable and transparent LMI is in countries' interest

# Key messages of the Guide

- The actors in the labour and training market (individuals, companies, training providers, policy makers, public institutions) need information on actual and potential labour supply and demand to make decisions
- The existing data sources can and should be exploited to provide information for these decisions
- There are many methodological options for mismatch identification – they should be combined depending on country context, data availability and objectives of the analysis
- The responsibility for provision of the information lays with the government but involvement of various stakeholders in the systems for mismatch identification and prevention is a key success factor



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