Qualification and Skill Mismatch: Concepts and Measurement

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Overview

- Background

- Raisons for measuring qualification and skill mismatches

- Concepts

- Measurement

- Results

Background

➡ SDG4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

➡ Mismatched mismatch measures

➡ Need for an agreement on:

- conceptual framework for comparable statistics on various forms of mismatches

- distinction between qualifications and skills

- suitability of different measurement approaches

- guidelines on data collection, questionnaire design and tabulations.

Reasons for measuring qualification and skill mismatch?

- Signifies poor utilization of human capital

- Potential cost:

    - For workers - lower wages (for overqualified), lower job satisfaction, higher on-the-job search, higher the risk of being out of employment

    - For employers – lost productivity, lower growth, higher training cost, reduced capacity to innovate and adapt to changing market conditions

    - For society - sunk education costs, higher unemployment benefits, lost income tax revenues

- Total cost depends on the number of mismatched individuals

How much qualification mismatch is there?

Qualification mismatch, selected developed countries, *Percentage of workers mismatched, Relative approach (modal level educ.)*
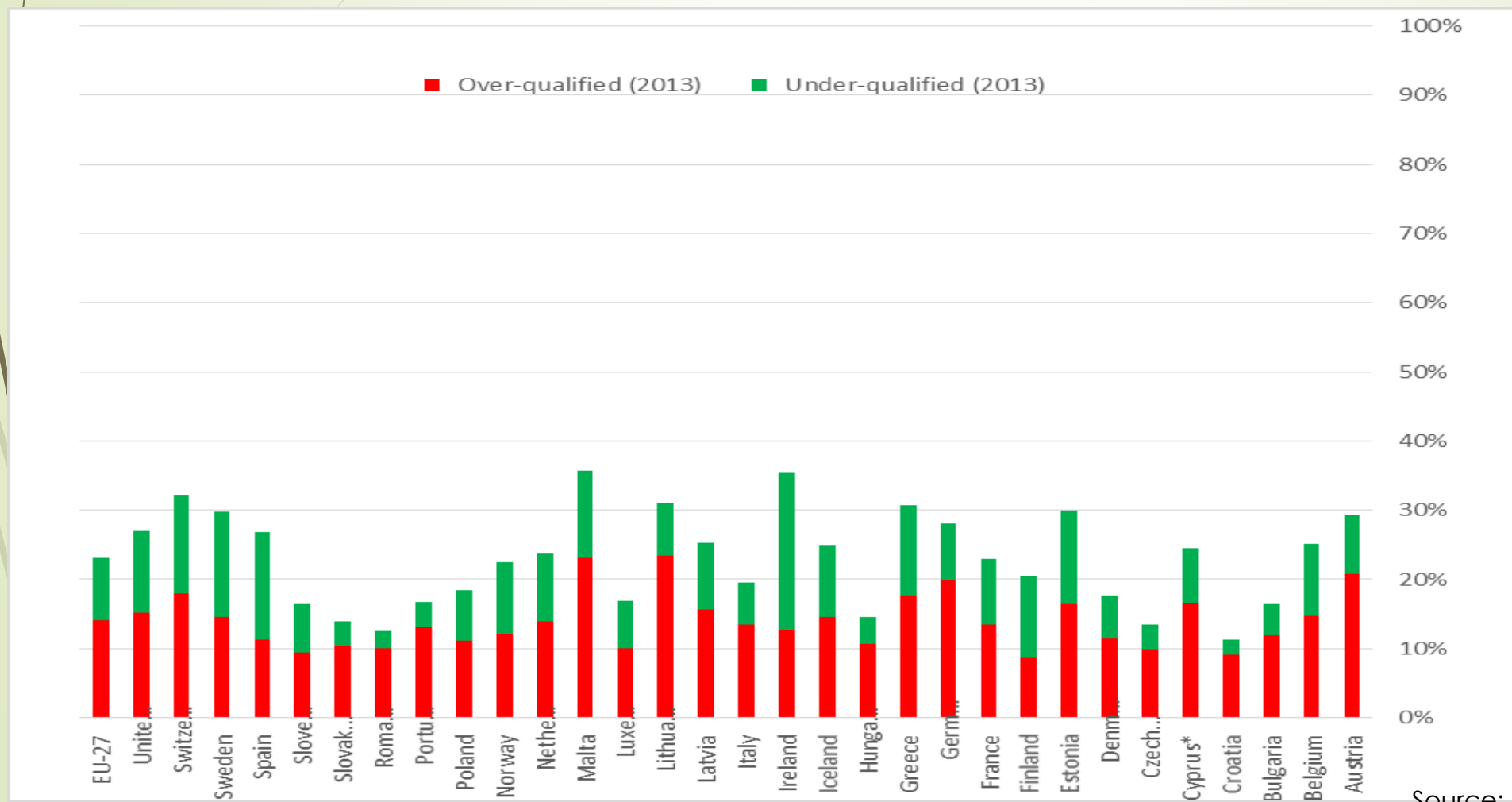
Source: OECD Survey of Adult Skills (PiAAC)

How much qualification mismatch is there?

Qualification mismatch, selected developing countries, *Percentage of workers mismatched, Normative approach (ISCO+)*
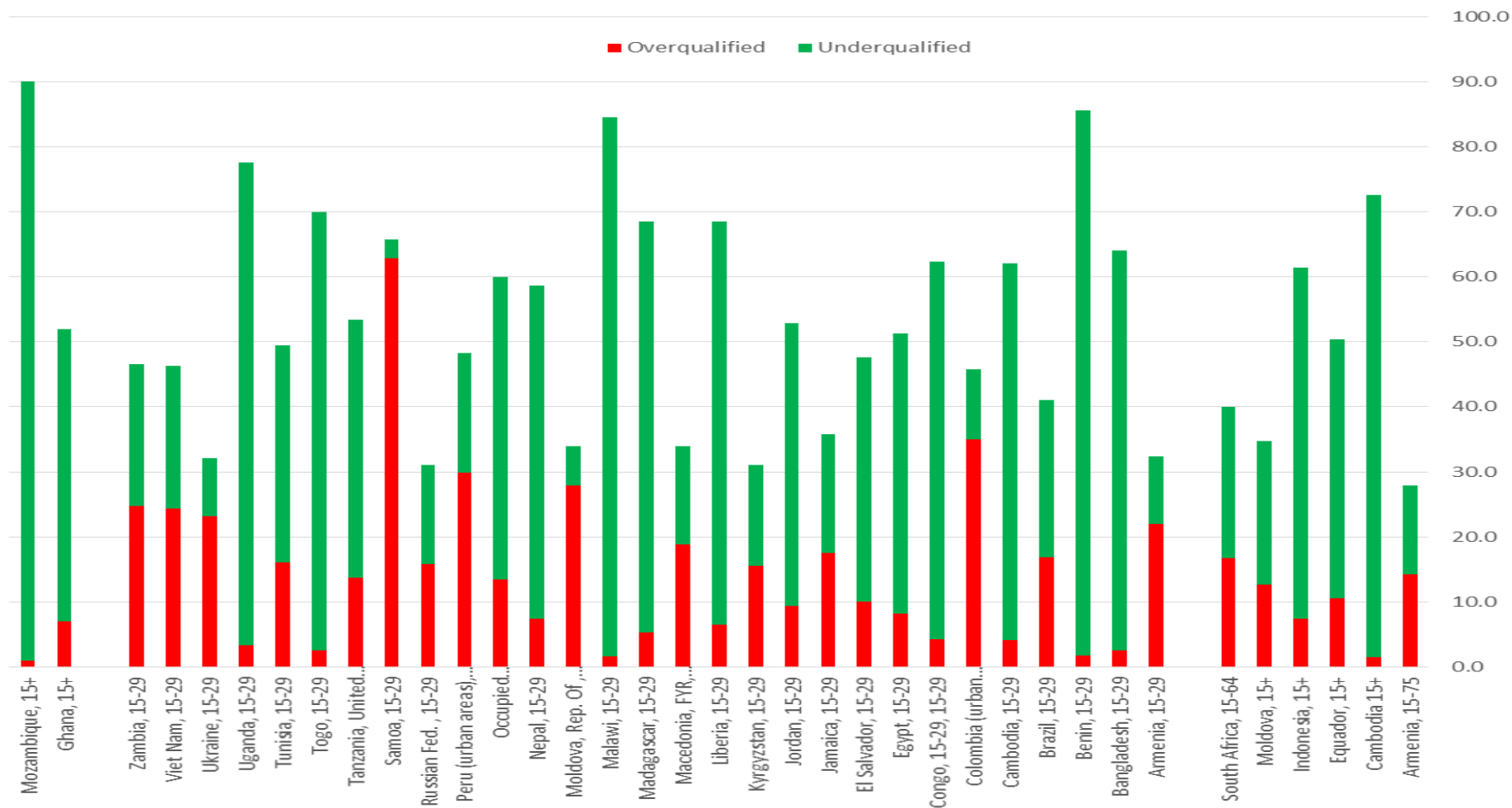
What is the effect of qualification and field-of-study mismatch on wages?

Percentage difference in wages between overqualified or field-of-study mismatched workers and their well-matched counterparts

Legend:
- Overqualified (Ref: same qualifications, well-matched job)
- Field-of-study mismatched (Ref: same field of study, well-matched job)
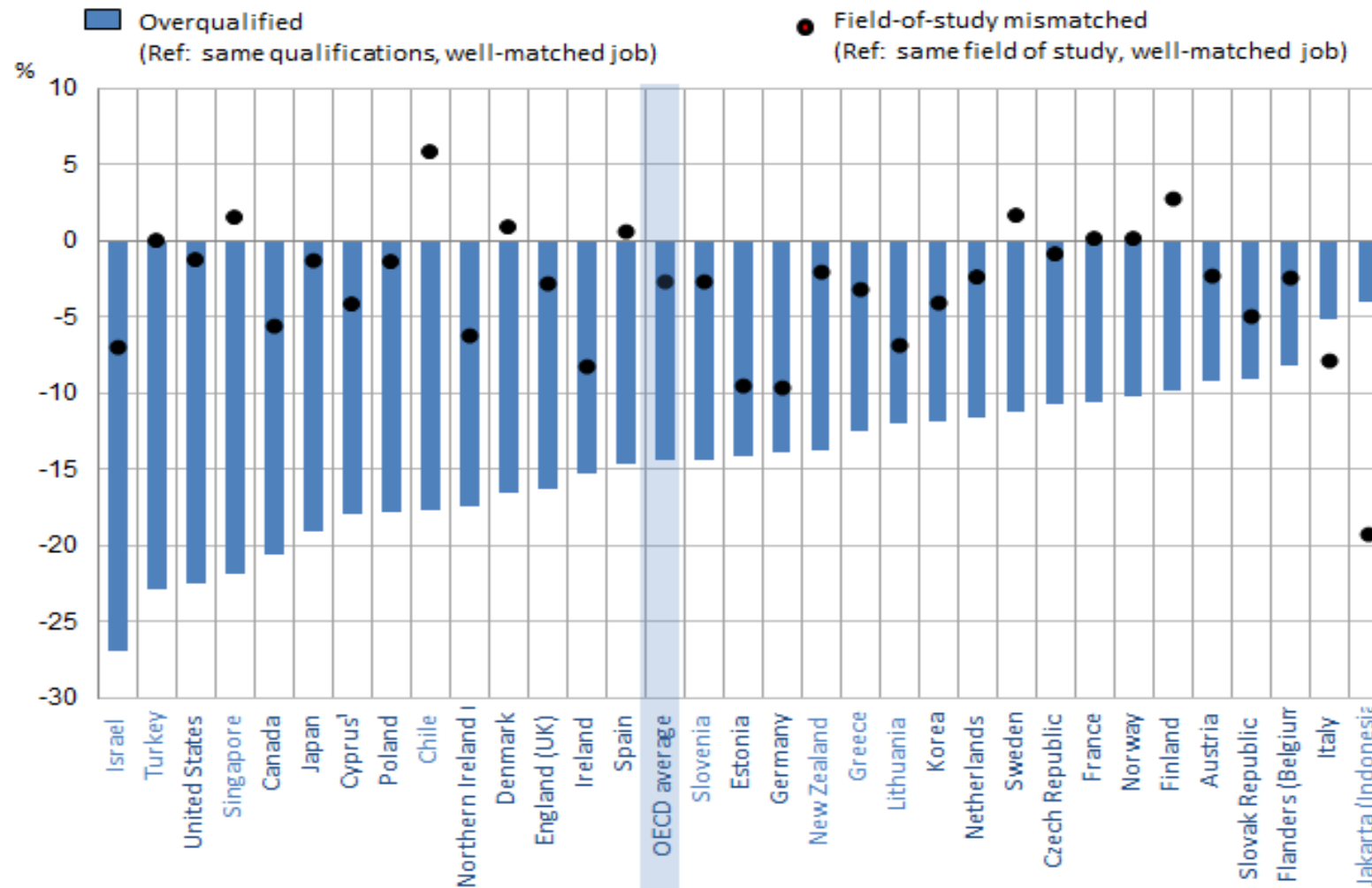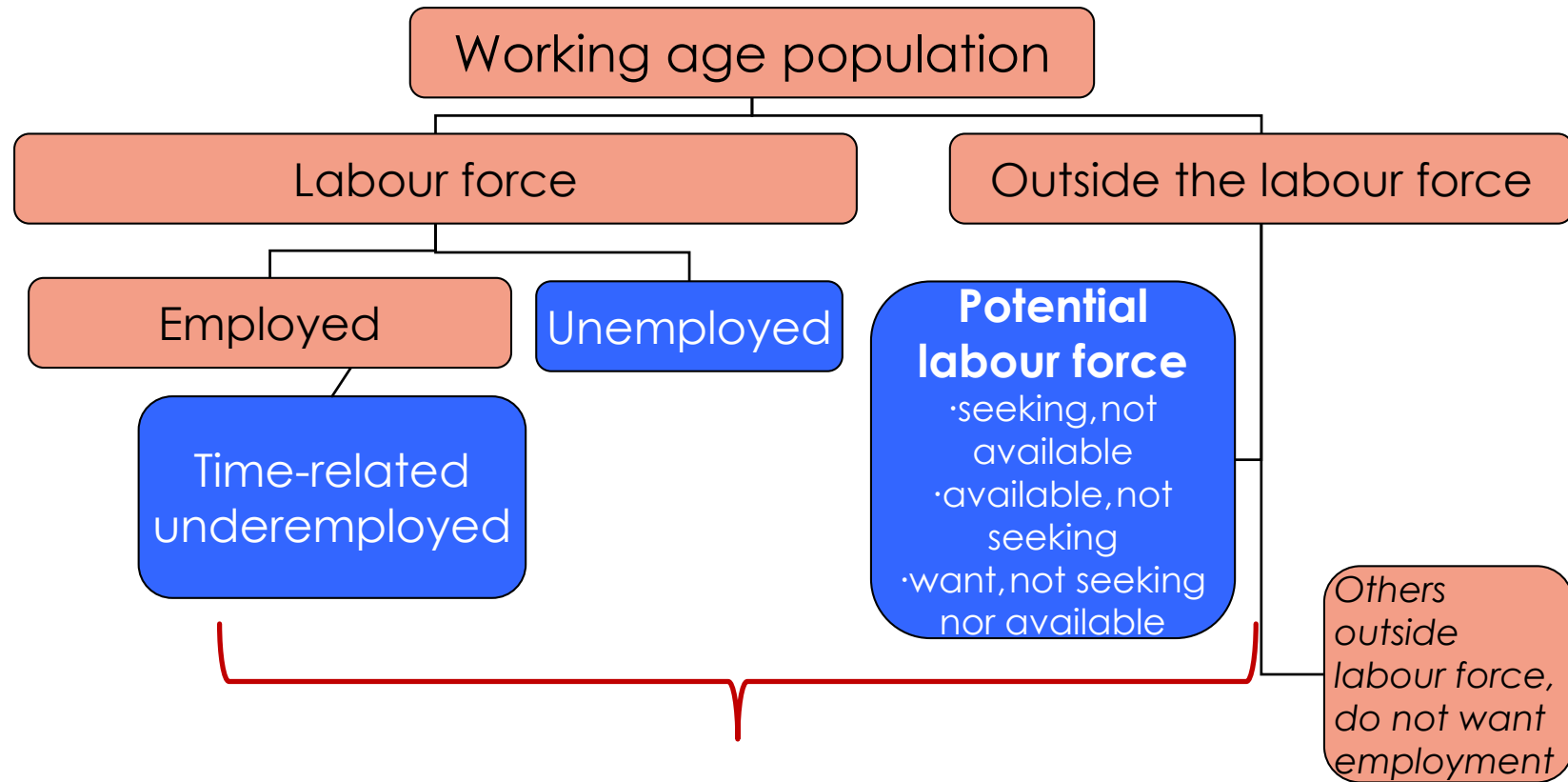
OECD countries

- Overqualification: Average wage penalty of 14 percent.

- Field of study mismatch: No significant penalty.

ILO work

- 16th ICLS: discussed inadequate employment situations.

- 18th ICLS: A proposal for measurement of various forms of labour underutilization (labour slack, low earnings and skill mismatch)

- 19th ICLS resolution focusses on issues of **insufficient** labour absorption (a) time-related underemployment, (b) unemployment, and (c) potential labour force.

  - Other dimensions of labour underutilization that refer to **inadequate** labour absorption (e.g. inadequate use and mismatch of qualifications and occupational skills; and inadequate income in current job), are mentioned but not defined.

  - ILO was requested to continue its methodological work *on the measurement of labour underutilization or inadequate employment related to skills, to employment-related income, and to excessive working time*
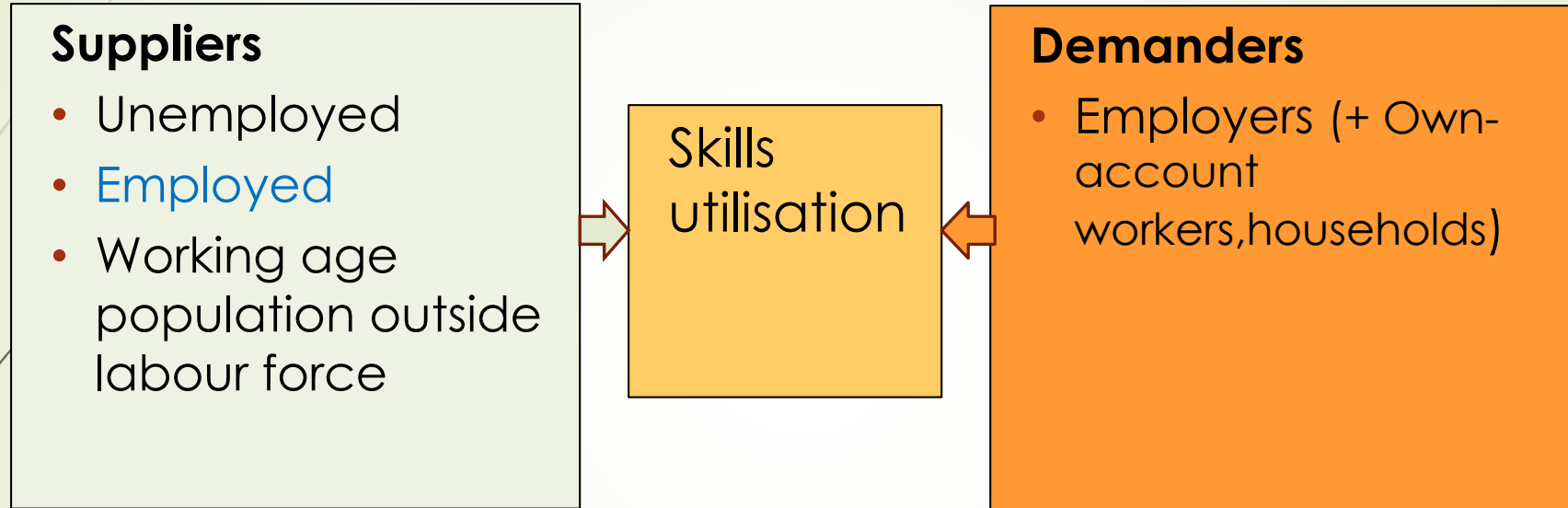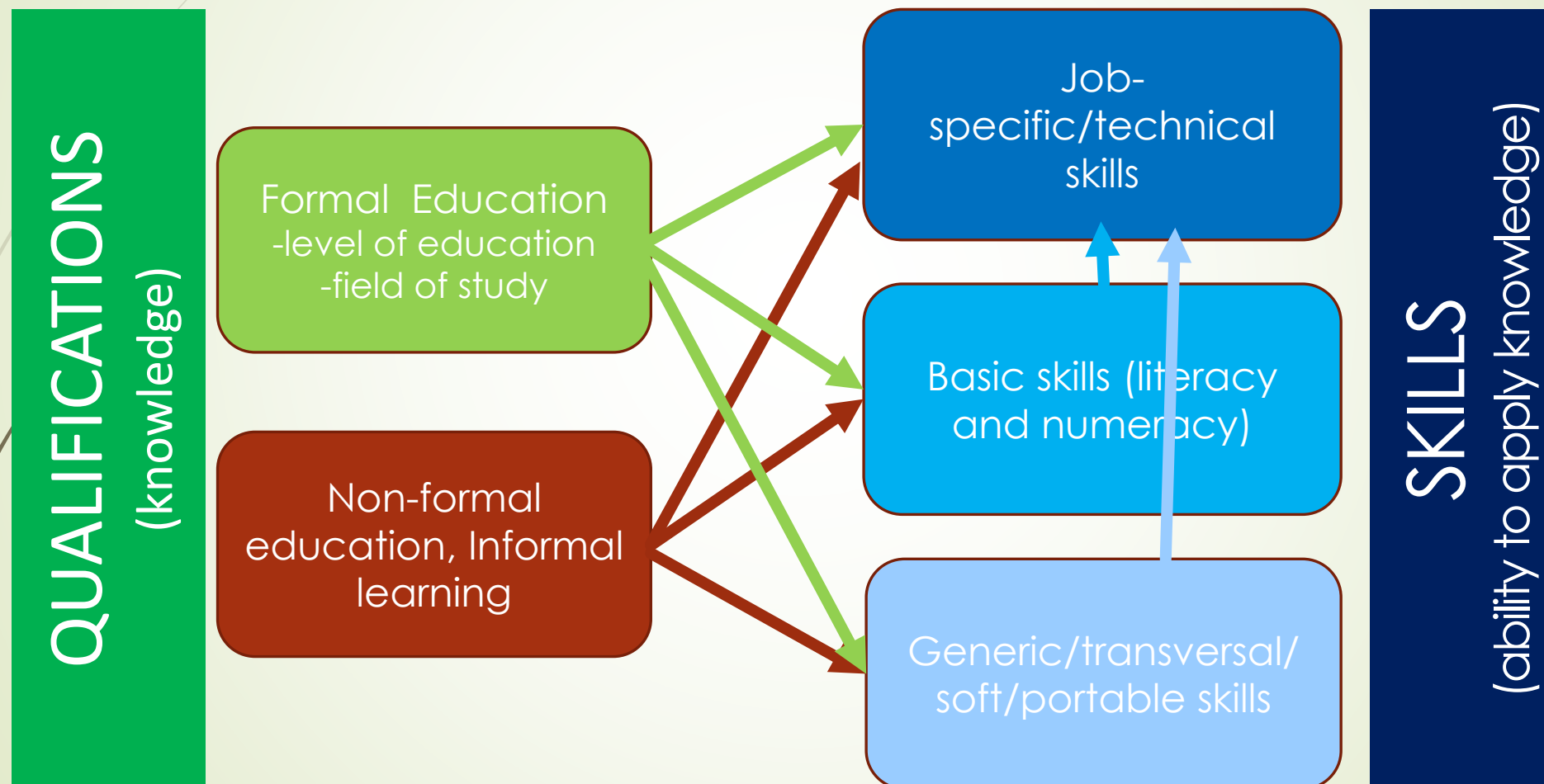
19th ICLS: Labour underutilization

Working age population

Labour force | Outside the labour force

Employed | Unemployed

Potential labour force
·seeking, not available
·available, not seeking
·want, not seeking nor available

Time-related underemployed

Others outside labour force, do not want employment

Labour underutilization
(Or unmet need for employment)

Supply and demand of skills

Suppliers
- Unemployed
- Employed
- Working age population outside labour force

Skills utilisation

Demanders
- Employers (+ Own-account workers,households)

ANALYTICAL FRAMEWORK:
Qualifications and Skills

QUALIFICATIONS (knowledge)

Formal Education
-level of education
-field of study

Non-formal education, Informal learning

Job-specific/technical skills

Basic skills (literacy and numeracy)

Generic/transversal/ soft/portable skills

SKILLS (ability to apply knowledge)

QUALIFICATIONS

QUALIFICATIONS

Formal Education
-level of education
-field of study

Non-formal education, Informal learning
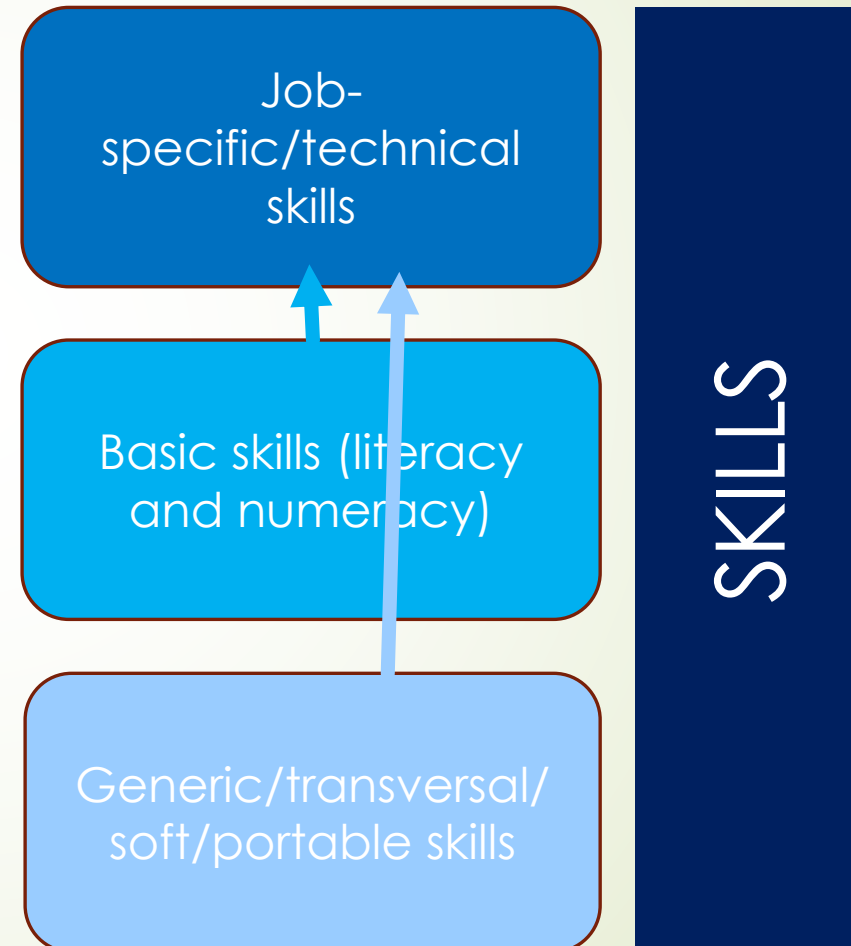
Formal qualifications: official confirmation

i) Successful completion of a full education programme;

ii) Successful completion of a stage of an education programme (intermediate qualifications); or

iii) Validation of knowledge, skills and competencies acquired through non-formal education or informal learning.

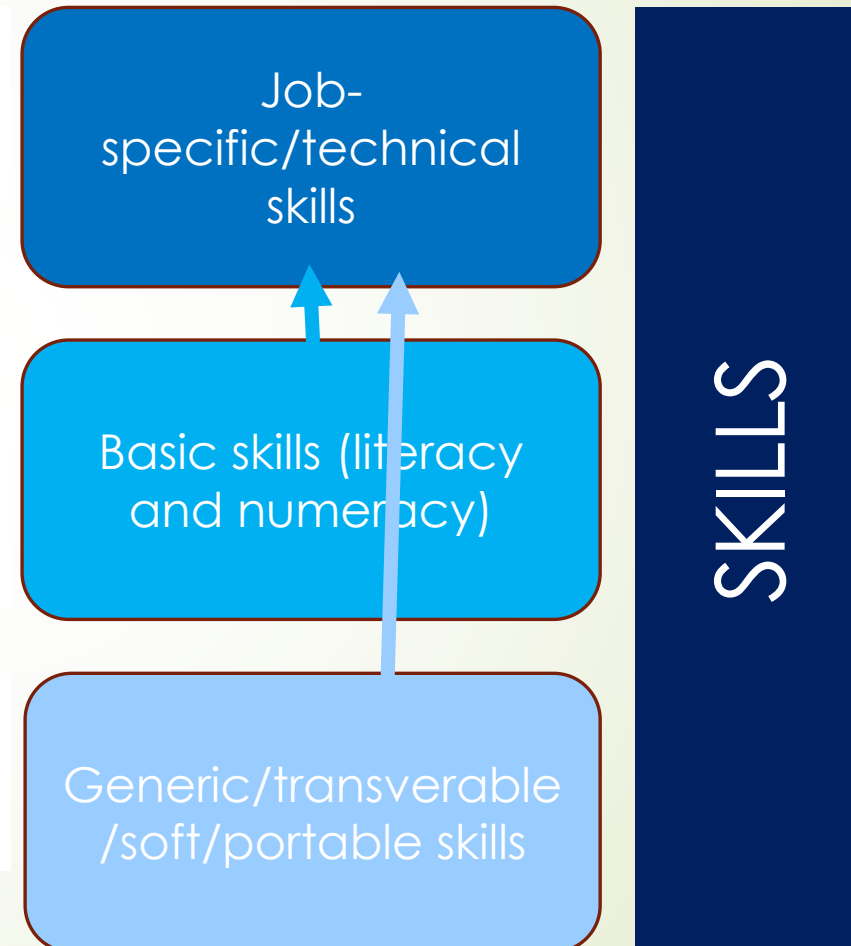**Non-formal qualifications:** not officially recognised as equivalent to formal qualifications

SKILLS

The innate or learned **ability to apply** the knowledge acquired through experience, study, practice or instruction, and **to perform** tasks and duties required by a given job

Job-specific/technical skills

Basic skills (literacy and numeracy)

Generic/transversal/soft/portable skills

SKILLS

SKILLS: Types

- Relate specifically to certain types of jobs or job fields
- Easily recognizable
- Difficult to transfer from job to job

- Prerequisite for further education and training, and for acquiring transferable and technical and vocational skills

- Relevant to a broad range of jobs and occupations
- Can be easily transferred from one environment to another

Job-specific/technical skills

Basic skills (literacy and numeracy)
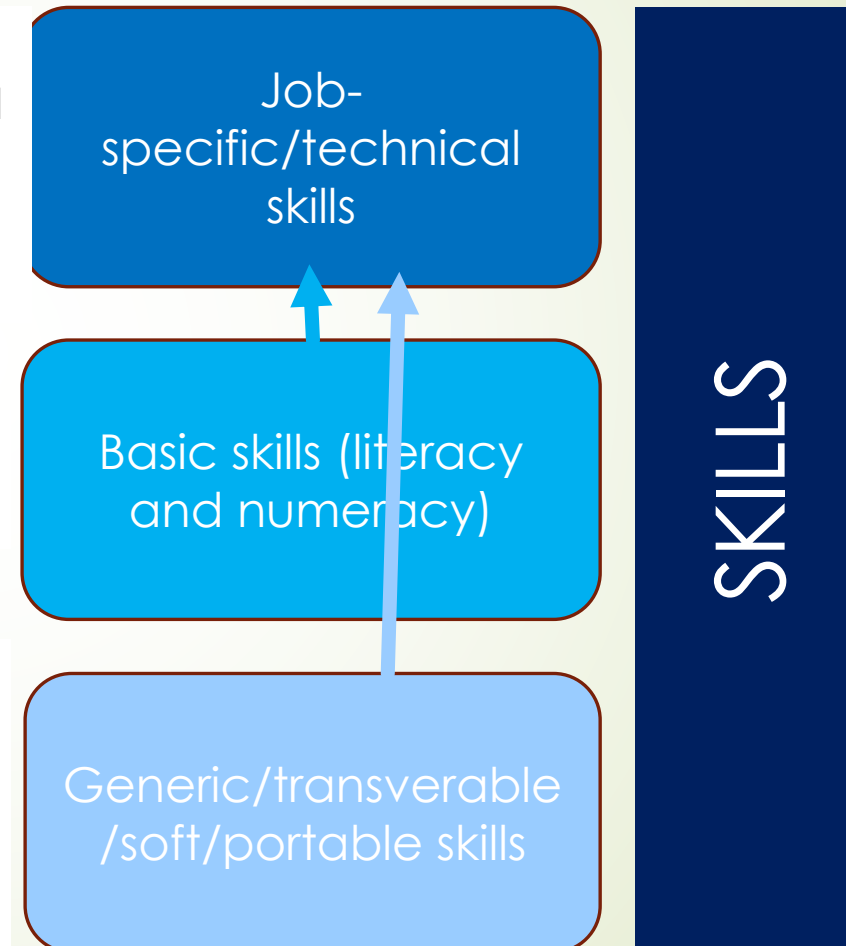
Generic/transverable /soft/portable skills

SKILLS

SKILLS: Types (examples)

- Specialist knowledge needed to perform job duties
- Knowledge of particular products or services produced
- Ability of operating specialized technical tools and machinery
- Knowledge of materials worked on or with

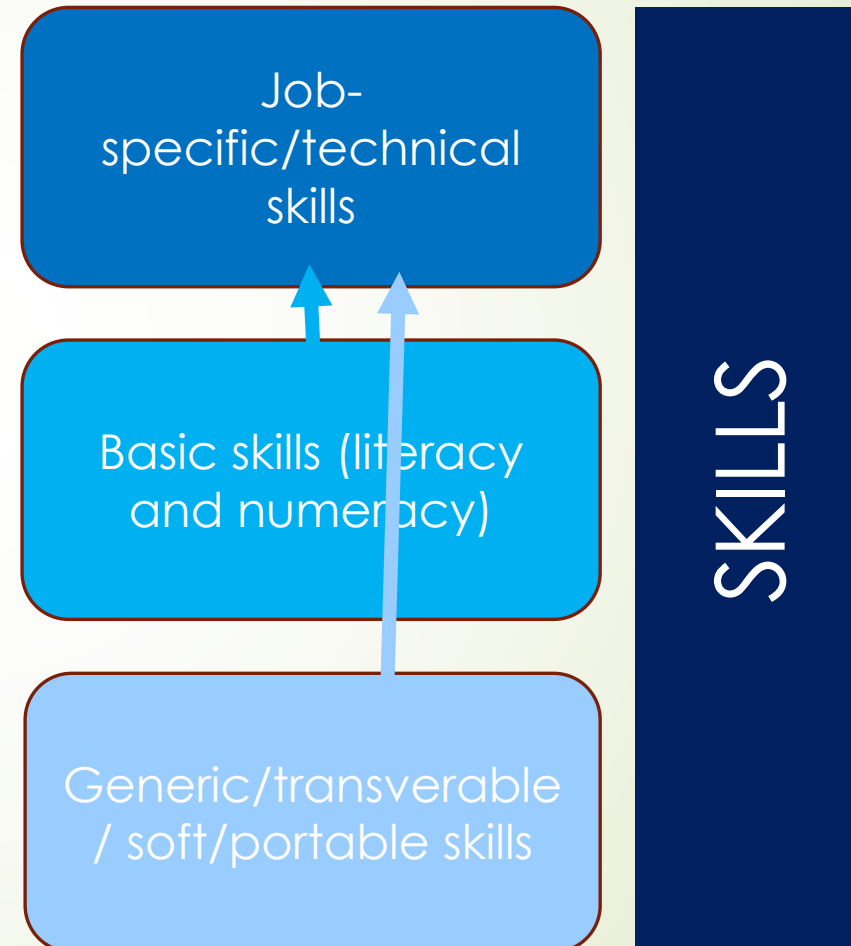- Writing and reading skills
- Numeracy skills

- ICT skills
- Problem-solving skills
- Communication skills
- Decision making skills
- Professional/personal skills (e.g. punctuality, honesty, reliability and dependability, self-organisation, presentation, team-work) , Etc.

Job-specific/technical skills

Basic skills (literacy and numeracy)

Generic/transverable /soft/portable skills

SKILLS

SKILLS: Levels

Level of skills required depends on the complexity and range of tasks and duties to be performed on the job

I. Low level
II. Moderate level
III. Advanced level

Job-specific/technical skills

Basic skills (literacy and numeracy)

Generic/transverable / soft/portable skills

SKILLS

Qualification mismatch of persons in employment – Concept

Persons in qualification mismatch comprise all persons in employment who occupied jobs whose qualification requirements do not correspond to their **formal qualifications** and/or **years of on-the-job training**

(i) Mismatch by **level** of education

Level of education higher/lower than required
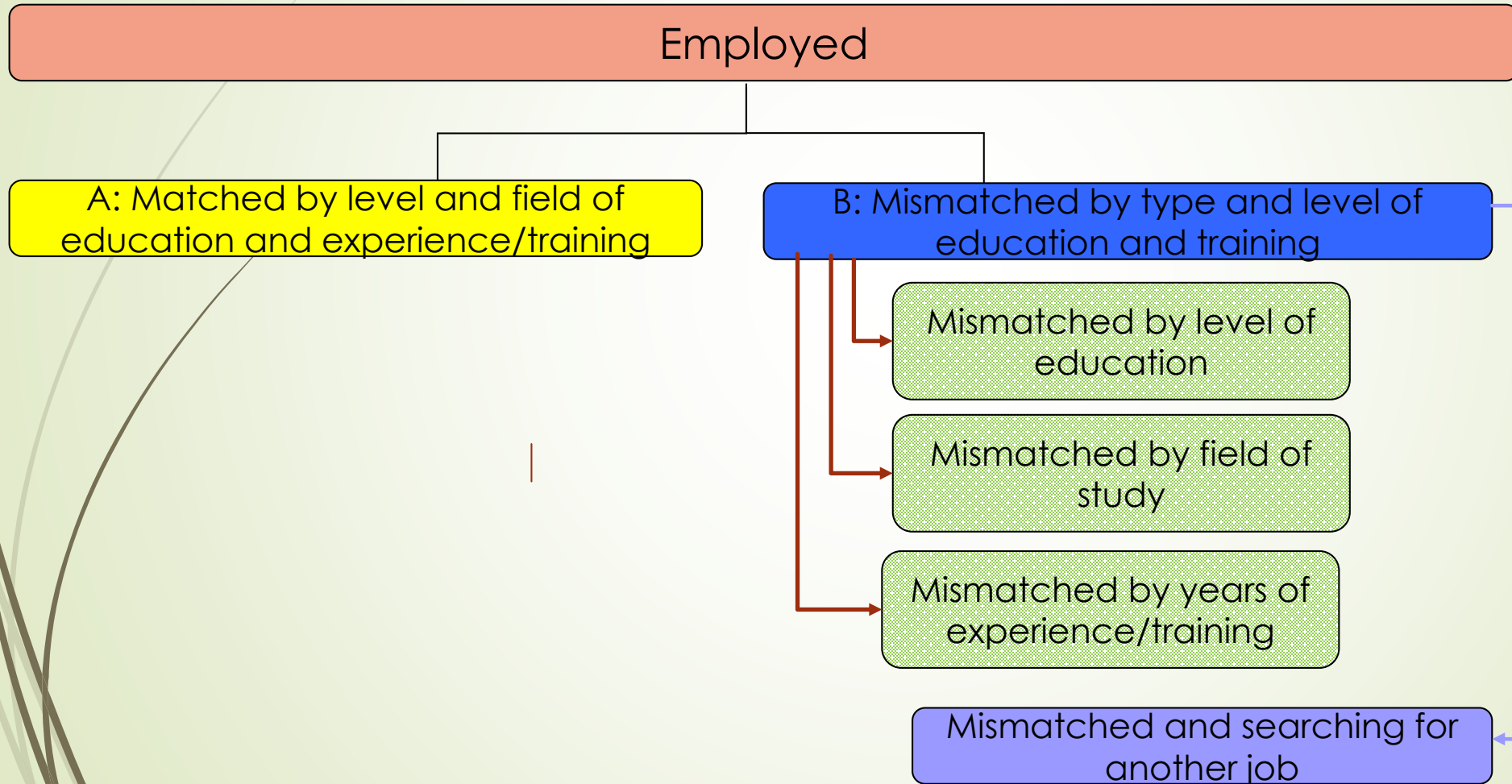
(ii) Mismatch by field of study

Principle field of study different from the field of work

(iii) Mismatch by years of on-the-job training and/or work experience

Years of experience/ training lower than required

Qualification mismatch of persons in employment

Employed

A: Matched by level and field of education and experience/training

B: Mismatched by type and level of education and training

Mismatched by level of education

Mismatched by field of study

Mismatched by years of experience/training

Mismatched and searching for another job

Persons in skill mismatch - Concept

Persons in skill mismatch comprise all persons in employment who occupied jobs whose skills requirements do not correspond to the type and level of occupational skills they possess.

➡ **Mismatch of job-specific/technical skills**

level of skills possessed higher/lower than required

➡ **Mismatch of basic skills**

level of skills possessed higher/lower than required

➡ **Mismatch of transversal/core/soft/portable skills**

level of skills possessed higher/lower than required

Skill mismatch of persons in employment
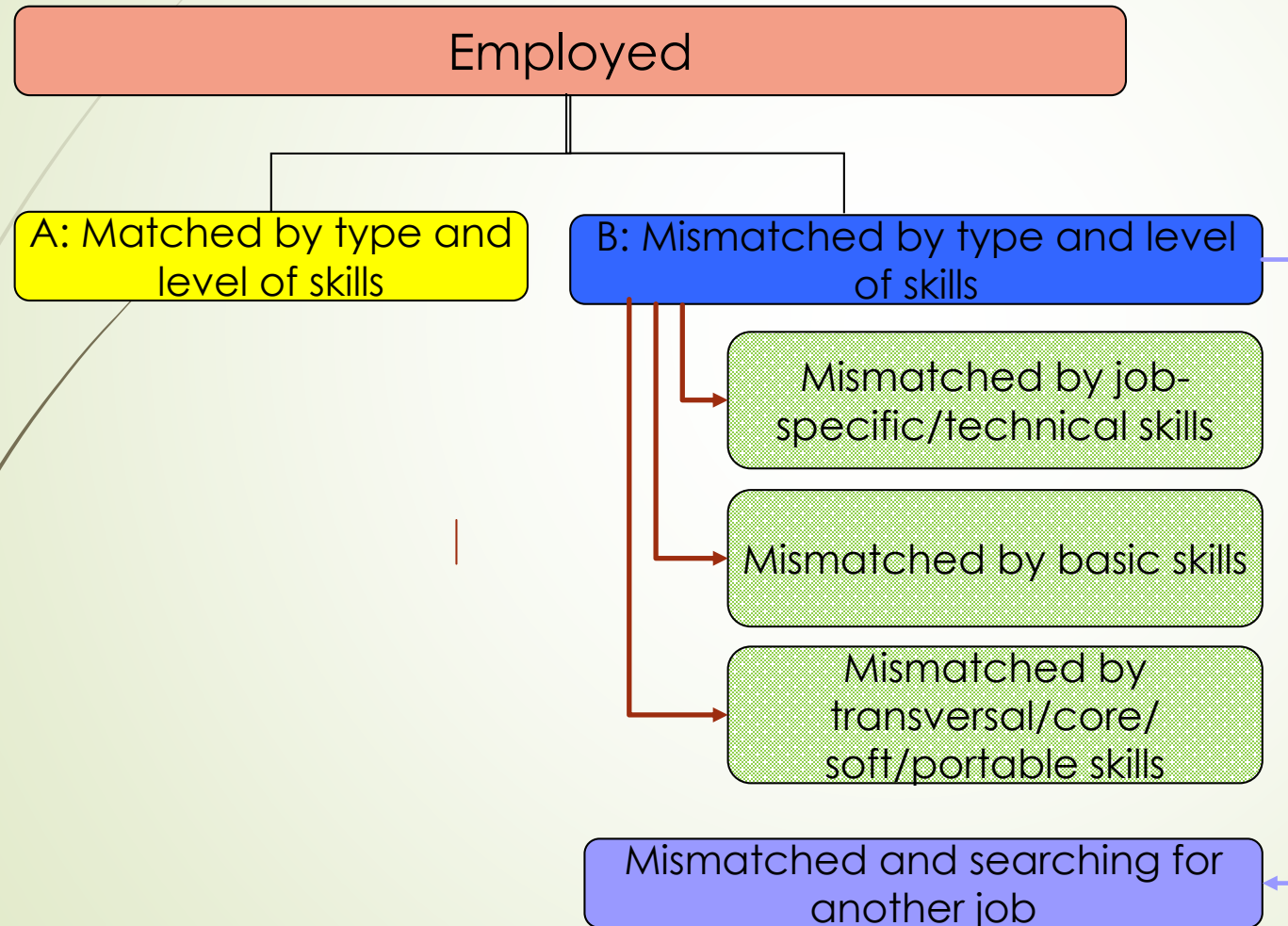
Measurement of qualification and skill mismatches

Qualification mismatch - Measurement

(i) Mismatch by level of education (based on level of education or No. of years of schooling and occupation)

- o **Normative measure**
- o **Subjective measure**
- o **Relative/statistical measure**

(ii) Mismatch by field of study (based on field of study and occupation)

(iii) Mismatch by years of experience/training (based on No. of years of relevant experience/training)

Qualification mismatch of persons in employment - Measurement

Additional criteria (variables of interest):

- **willing to change** their job

- **carried out activities to seek** "better matched employment"

- **not satisfied** with their match/job

- **earning less** than the wage corresponding to their level of education

- Etc.

Qualification mismatch

- Based on existing sources and readily implementable (LFS, level of education, field of study, occupation)

- Easy to understand

but

- Qualification is only an approximation of the skills, knowledge and competencies mastered at the time of completion.

- Ignores the skill gains and skill loses over time, on-the-job training, past work experience, informal learning, etc.

- Skill mismatch is a more comprehensive measure as it requires the workers to compare all their skills and abilities, irrespective of whether they were learned in the classroom or work environment, with the actual skill requirements of their current job.

Skill mismatch – Measurement

➡ Overall skills level (skill as **uni-dimensional** concept)

A person in employment is considered as overskilled if she/he or employer report having the skills to perform more complex tasks or underskilled if she/he or employer report requiring more training for competent performance at the job.

➡ Specific types of skills (skill as **multi-dimensional** concept)

A person in employment is considered as overskilled/undeskilled if *types and level of skills* she/he posses are above/under those required to do the job.

25

Skill mismatch – Measurement
**- overall skills level
- specific types of skills**

(i) **Worker measures:** person's self-perceived match between his/her level and type of skills and the skills required by the job.

(ii) **Employer (HR specialist) measures:** employer's assessment of skills possessed, and used on the job.

(iii) **Direct measures (assessment):** Selected types of skills are measured through tests (e.g. reading, writing and numeracy tests).
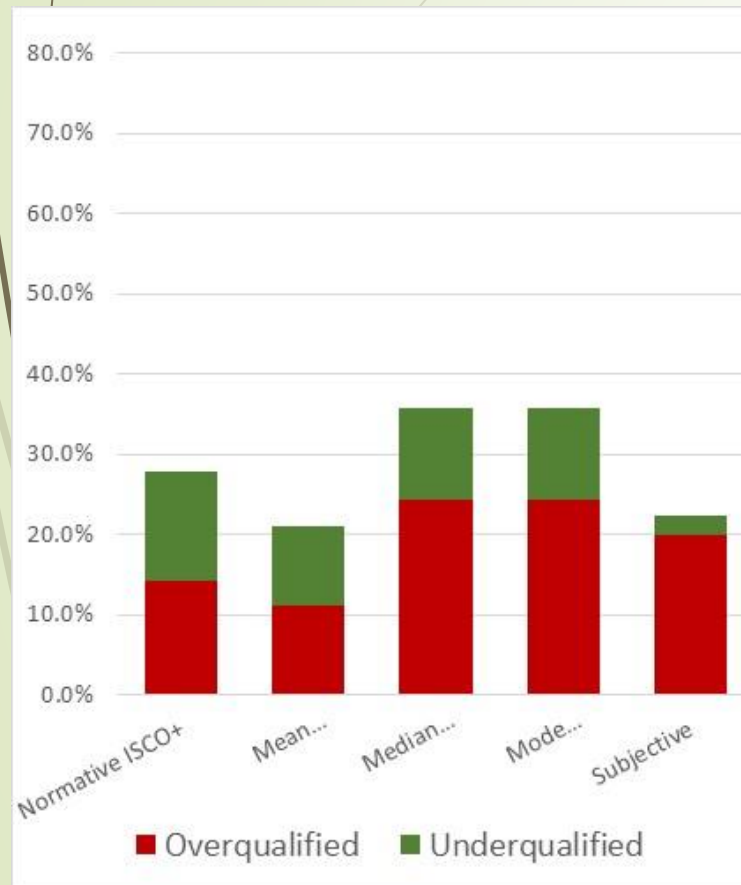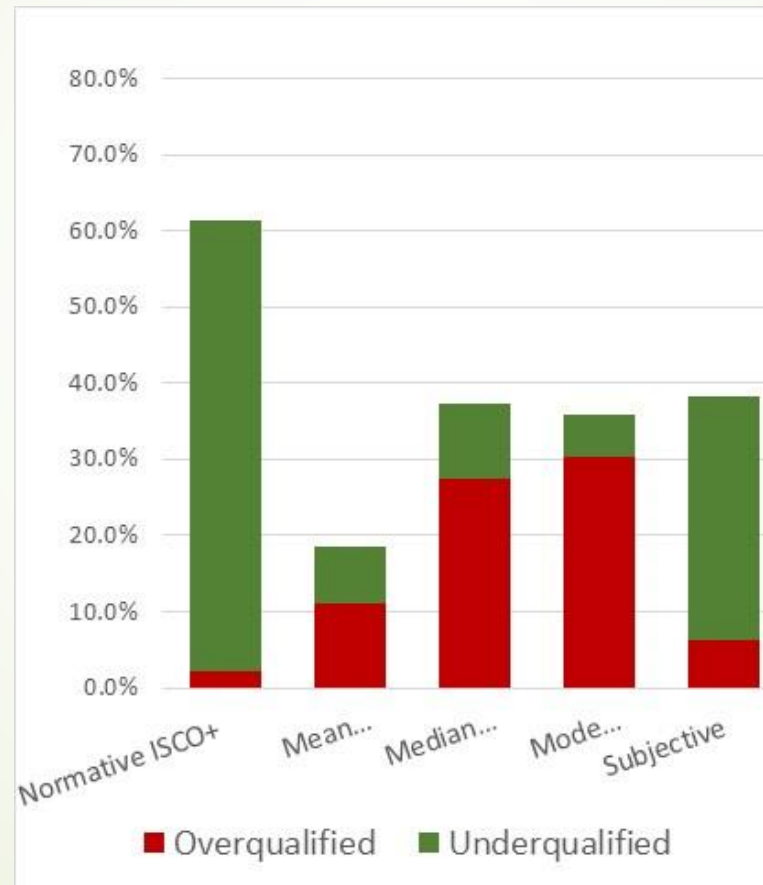
Some results

(a) Mismatch by level of education
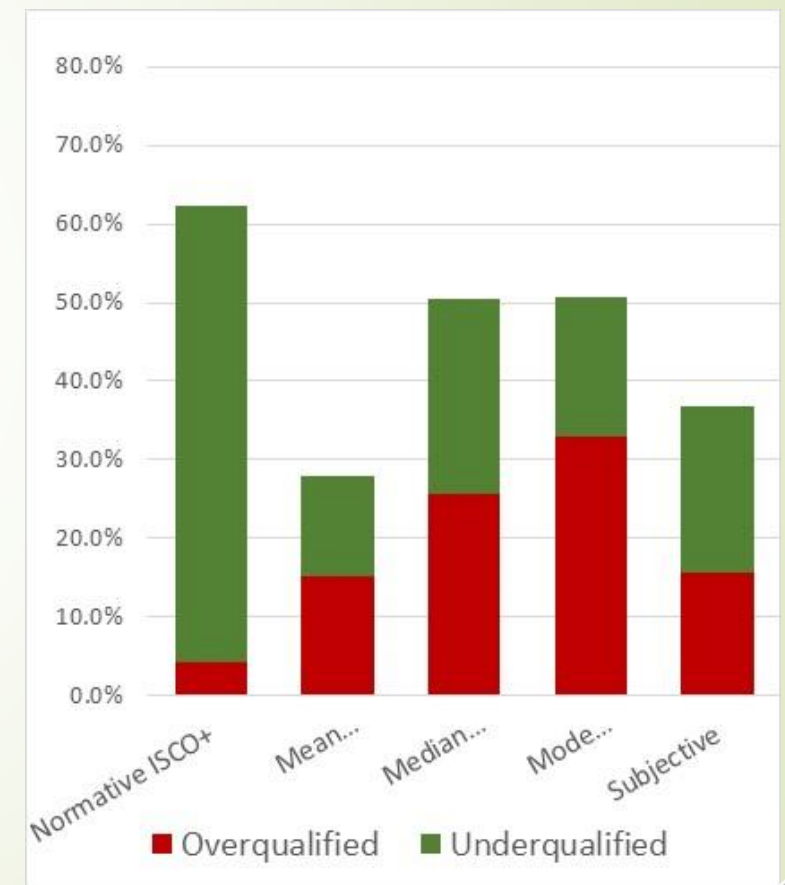## Comparison of **normative, relative and subjective measures**

Armenia, LFS 2014, pop 15-75


Uganda, SWTS, 2015, pop 15-29

Congo, SWTS, 2015, pop 15-29

Armenia, LFS 2014, pop 15-75 (normative ISCO+ based job requirements)
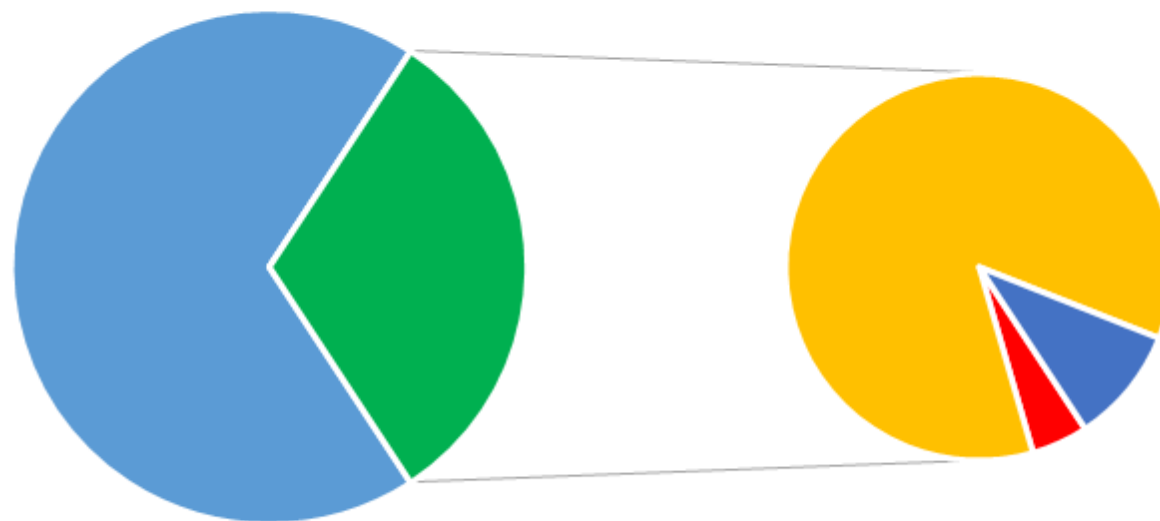**Mismatched persons in employment who want/do not want to change their employment situation, by reasons**

Overqualified who want/do not want to change their employment situation, by reason

Underqualified, who want/do not want to change their employment situation, by reason
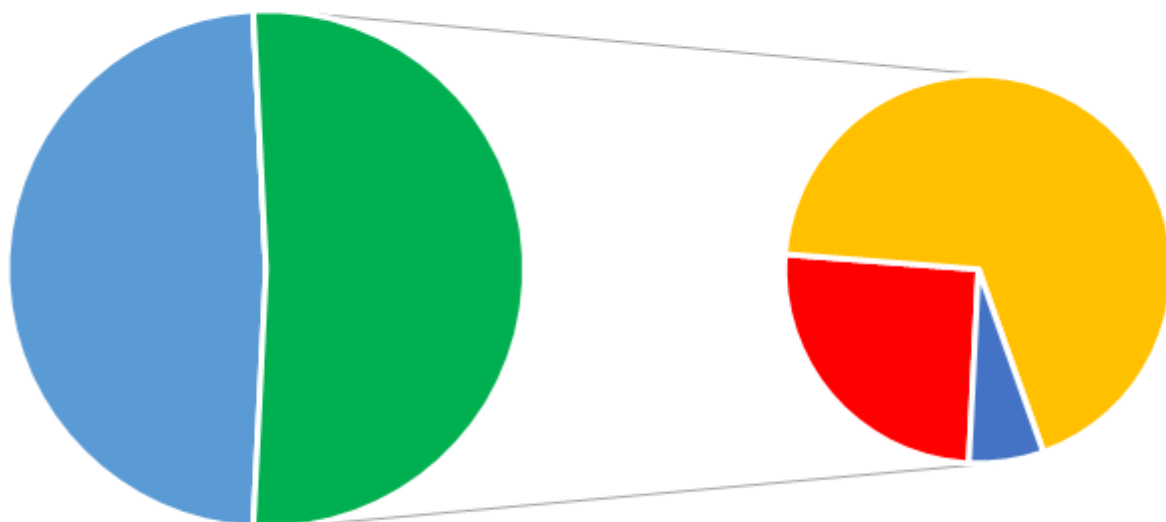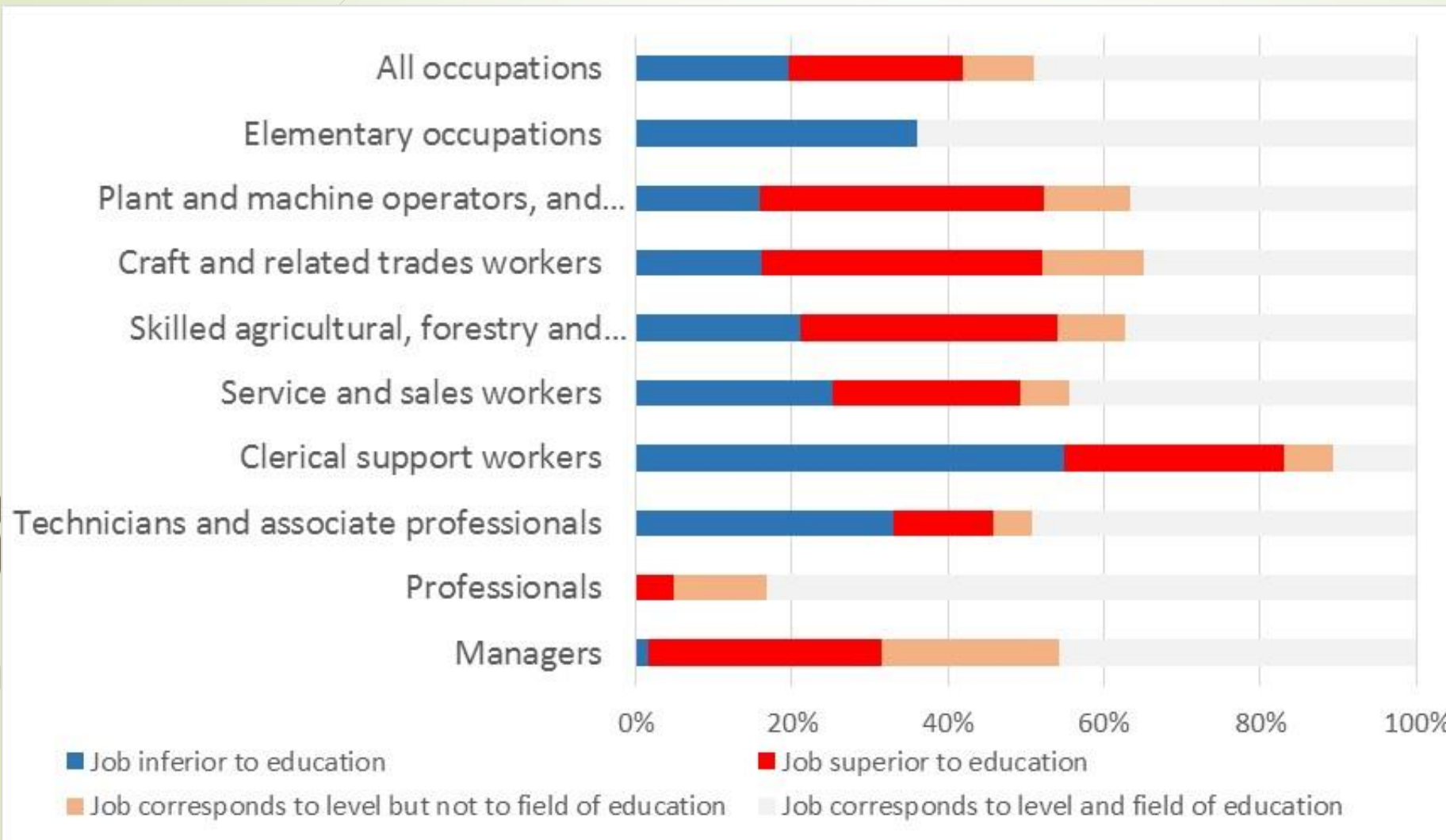
- No, does not want to change
- Yes, want to change
- To better use professional skills
- To have higher wage/income
- Other reasons

Incidence of mismatch by level of education and field of study, by occupation, %

Moldova, LFS 2017 Q1 (subjective + normative approach)

Most heterogeneous group. Lowest matching.

Lowest undereducation

Highest field of study mismatch

Conclusions

- Incidence of qualification mismatch is sensitive to the approach used

- Qualification mismatch measures based on normative and statistical approach are likely to overestimate the level of mismatch.

- **Normative approach** - Mapping between occupational groups and educational requirements should be established at national level.

- **Subjective approach**: Empirical studies – respondents relatively accurate.

- **Statistical approach:** Estimates based on model level of education - more robust than on years of schooling

- Field of study mismatch should be separately measured.

- To be useful the mismatch estimates need to be disaggregated

- Formal qualification mismatch measures ignore the skill gains and skill loses over time, on-the-job training, past work experience, informal learning, etc.

- Skill mismatch measurement requires additional variables on skill related job characteristics in the LFS.

- Job satisfaction- explanatory variable for mismatch.

Thank you.