



International
Labour
Organization

**Add-on module on occupational
qualifications and skills mismatches**
Variable derivation guide (v1)
for PAPI and CAPI

September 2020

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INTRODUCTION

This guide describes how to use the ILO add-on module on Occupational qualifications and skills mismatches (v1) to compute the main derived variables on the topic, in line with the guidelines adopted by the 20th International Conference of Labour Statisticians (ICLS).

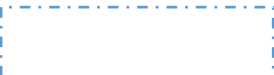
Detailed information for each derived variable is provided following a step-by-step approach covering:

- A. **Basic international definition** as per the latest ICLS standards
- B. **Measurement strategy and question mapping** of all relevant survey questions and modules
- C. **Flow charts** showing the relevant question sequences and reference syntax

Following the modular approach of the ILO LFS model questionnaire, the guide makes reference to variables captured in the add-on module as well as in the core modules of the parent labour force survey. No specific guidance is provided on the treatment of missing values or DON'T KNOW answers in the relevant variables. Users will need to adapt the reference syntax to take account of national differences in the survey content and to handle missing values or DON'T KNOW answers.

FLOW CHARTS KEY

The diagram below shows the different symbols used in the flow charts and their intended meaning. Users should refer to this key when interpreting the flow charts used in this guide.

	Initial condition(s)
	Variable / model question
	Optional variable / model question
	Value of the variable
	Decision point for optional modules or previous status / classification
	Target derived variable
	Previously derived variable
	Other ending status / classification

QUALIFICATION MISMATCH (FQN)

A. International definition

Employed persons with a **qualification mismatch** are defined as those who, during the reference period, occupied jobs whose qualification requirements did not correspond to the level and/or type of qualifications they possessed.

They comprise:

- (a) **Persons in employment mismatched by level of education only:** it occurs when the level of education of the person in employment does not correspond to the level of education required to perform their job.
 - Over-education occurs when the level of education and training of the person in employment is higher than that required to perform their job;
 - Under-education occurs when the level of education and training of the person in employment is lower than that required to perform their job.
- (b) **Persons in employment mismatched by field of study only:** it occurs when the field of study of the person in employment does not correspond to the field of study required to perform their job.
- (c) **Persons in employment mismatched by both level of education and field of study:** it occurs when the level of education and the field of study of the person in employment does not correspond to those required to perform their job.

The measurement is based on the requirements for the main job of those employed

Source: Guidelines concerning measurement of qualifications and skills mismatches of persons in employment, paragraphs 5 and 8, 20th ICLS (2018).
https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/meetingdocument/wcms_648557.pdf

Additional resources: International Standard Classification of Education (ISCED 2011, <http://uis.unesco.org/en/topic/international-standard-classification-education-isced>, International Standard Classification of Education: Fields of Education and Training 2013 (ISCED-F 2013) <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>

B. Measurement strategy and question mapping

Measurement strategy Questions FQN_1 and FQN_2 allow for identification of all employed persons that were mismatched by level of education and by field of study with reference to their main job. By combining the two derived variables, matched/mismatched by level of education and matched/mismatched by field of study, it is possible separately identify those (a) mismatched by level of education only, (b) mismatched by field of study only, (c) mismatched by both level of education and field of study.

Persons in employment matched/mismatched by level of education

The first step is to establish the level of education needed to carry out the tasks and duties of respondent's main job/business (FQN_1).

Once the level of education, needed to carry out the tasks and duties of respondent's main job/business is captured, this is compared with the actual level of education the respondent completed (reported in DEM_8).

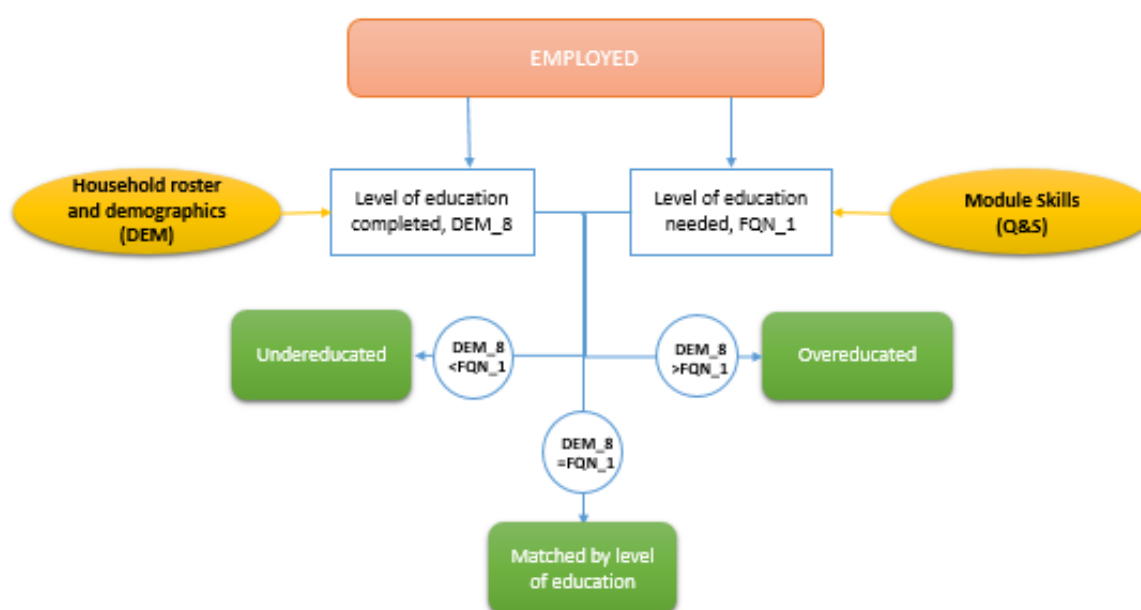
Persons in employment matched/mismatched by field of study

The first step is to establish the field of study needed to carry out the tasks and duties of respondent's main job/business (FQN_2). This is done only for those whose jobs require at least lower secondary education (FWN_1=4,5,6 or 7)

Once the field of study needed to carry out the tasks and duties of respondent's main job/business is captured, this is compared with the actual field of study of respondent (reported in DEM_9).

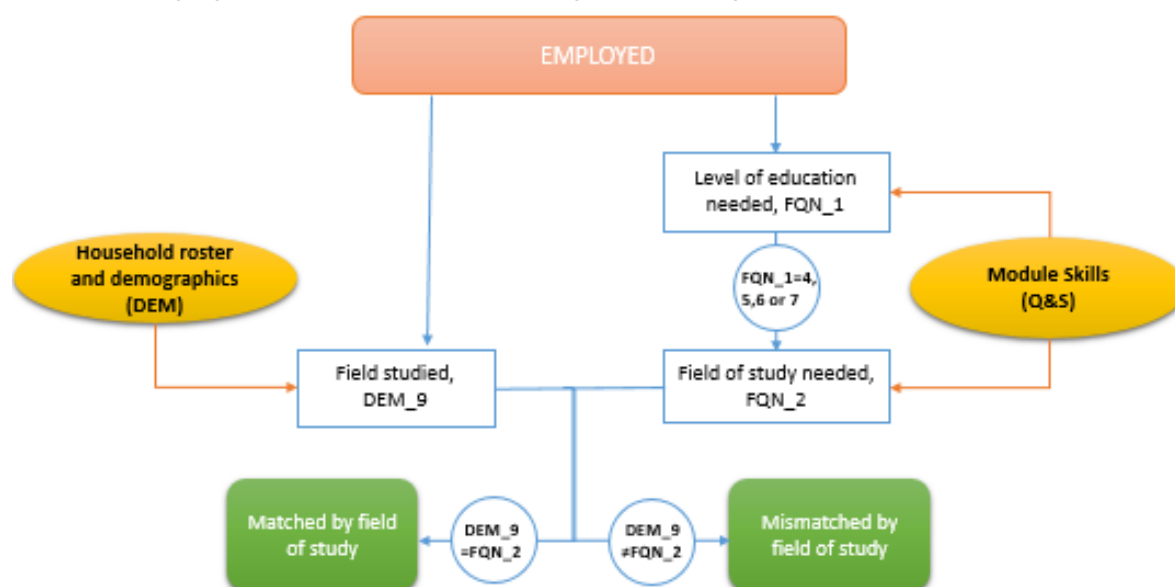
Relevant modules LFS module: Household roster and demographics (DEM), Add-on module on Occupational qualifications and skills

Relevant questions DEM_8, DEM_9
FQN_1, FQN_2

C. Flow chart and reference syntax**Persons in employment matched/mismatched by level of education**

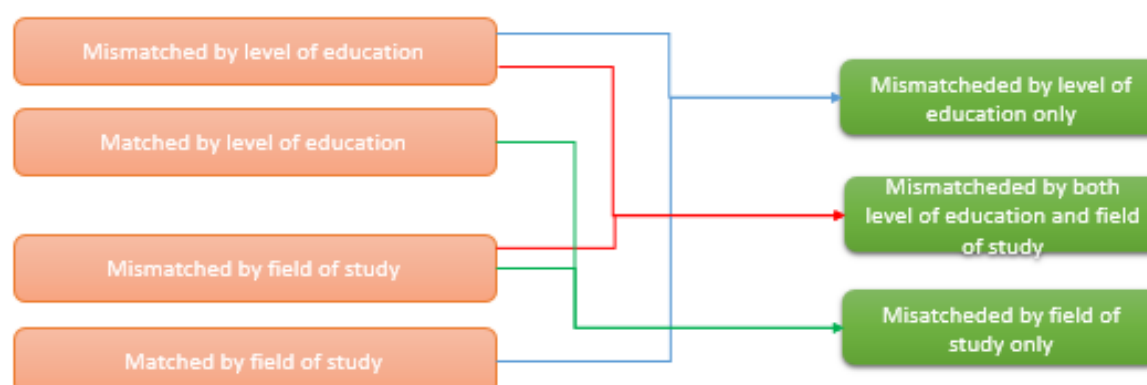
Reference Syntax	Status
IF (CLASSIFIED AS EMPLOYED AND DEM_8<FQN_1)	UNDEREDUCATED
IF (CLASSIFIED AS EMPLOYED AND DEM_8=FQN_1)	MATCHED BY LEVEL OF EDUCATION
IF (CLASSIFIED AS EMPLOYED AND DEM_8>FQN_1)	OVEREDUCATED

Persons in employment matched/mismatched by field of study



Reference Syntax	Status
IF (CLASSIFIED AS EMPLOYED AND (FQN_1= 4, 5, 6, or 7 AND DEM_9=FQN_2))	MATCHED BY FIELD OF STUDY
IF (CLASSIFIED AS EMPLOYED AND (FQN_1= 4, 5, 6, or 7 AND DEM_9≠FQN_2))	MISMATCHED BY FIELD OF STUDY

Persons in employment mismatched by level of education and/or field of study



Reference Syntax	Status
IF (CLASSIFIED AS MISMATCHED BY LEVEL OF EDUCATION AND CLASSIFIED AS MATCHED BY FIELD OF STUDY)	MISMATCHED BY LEVEL OF EDUCATION ONLY

IF (CLASSIFIED AS MISMATCHED BY LEVEL OF EDUCATION AND CLASSIFIED AS MISMATCHED BY FIELD OF STUDY)	MISMATCHED BY BOTH LEVEL OF EDUCATION AND FIELD OF STUDY
IF (CLASSIFIED AS MATCHED BY LEVEL OF EDUCATION AND CLASSIFIED AS MISMATCHED BY FIELD OF STUDY)	MISMATCHED BY FIELD OF STUDY ONLY

SKILLS MISMATCH (SKL)

A. International definition

Employed persons with a **skills mismatch** are defined as those who, during the reference period, occupied jobs whose skills requirements did not correspond to the level and/or type of skills they possessed.

Skill mismatch refer to mismatch of (i) overall skills or (ii) by type of skills.

Persons in employment mismatched by overall skills comprise those who reported having the skills to perform more complex tasks and those who reported that some of their skills need to be further developed.

Persons in employment mismatched by type of skills includes :

- (a) Mismatched by job-specific/technical skills
- (b) Mismatched by basic skills
- (c) Mismatched by transferable skills

A person in employment may experience:

- Over-skilling, which occurs when the level and/or types of skills of the person in employment exceeds those required to perform their job.
- Under-skilling, where occurs the level and/or types of skills of the person in employment is lower than those required to perform their job

Source: Guidelines concerning measurement of qualifications and skills mismatches of persons in employment, paragraphs 6 and 9, 20th ICLS (2018).

Additional resources:

B. Measurement strategy and question mapping

<i>Measurement strategy</i>	Questions SKL_1- SKL_6 allow for identification of all employed persons that were matched/mismatched by overall and by type of skills, with reference to their main job.
<i>Relevant modules</i>	• LFS modules on Identification of employed persons • Add-on module on Occupational qualifications and skills
<i>Relevant questions</i>	SKL_1 – SKL_6

Persons in employment matched/mismatched by overall skills

The objective of question SKL_1 is to collect respondent's assessment about the level of her/his skills in relation to skills needed to carry out the tasks and responsibilities that are typical of the respondent's job/business.

Persons in employment matched/mismatched by type and level of skills

The objective of questions SKL_2-SKL_6 is to identify extent to which various skills possessed by respondent correspond to the type and level of skills needed to carry out the tasks and duties that are typical of the respondent's job.

Questions SKL_2-SKL_6 allow identification of those matched/mismatched with respect of the following skills:

- a. Technical skills
- b. Literacy skills
- c. Numeracy skills
- d. Computer skills
- e. Foreign Language skills
- f. [Problem solving skills]
- g. [Communication and presentation skills]
- h. [Team-working skills]
- i. [Customer handling skills]
- j. Physical skills (strength and/or dexterity)
- k. Other skills_____

Skills types f-i might be subject to revisions as evidence on the relevance of various transferable skills is accumulated at the international level, based on country practice.

Different strategies are used to identify persons matched/mismatched by skills types a-e and f-k.

For skills types a-e:

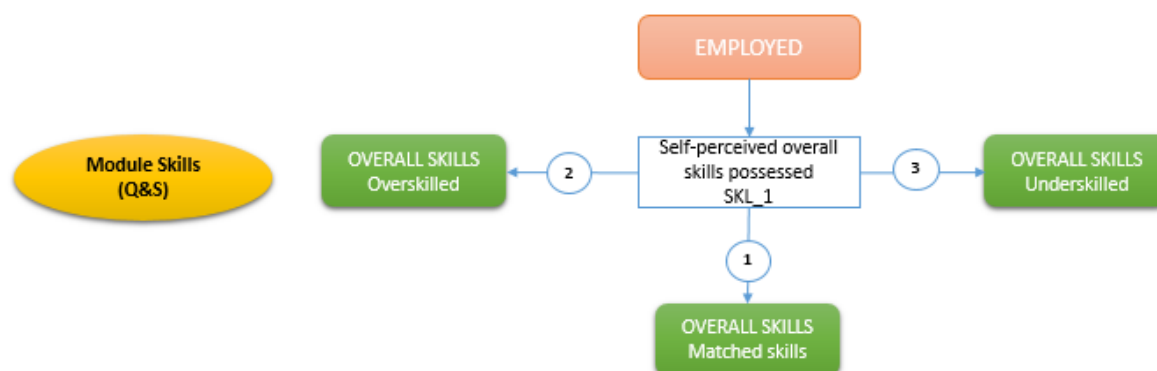
- First, the module captures the skills needed in the respondent's main job.
- For those needed, the importance, the level needed and the level possessed are captured.
- All cases where the level needed is higher than the level possessed are classified as under-skilled, and those where the level needed is lower than the level possessed are classified as over-skilled.
- All cases of skills that are not needed but possessed, regardless of the level, are also classified as over-skilled.

For skills types f-k:

- First, the module captures the skills needed in the respondent's main job.
- For those needed, the importance and the adequacy of skills possessed are captured.
- All cases where the level of skills possessed is insufficient to carry out tasks and duties of the job are classified as under-skilled, and those where the level is higher than the level needed are classified as over-skilled.

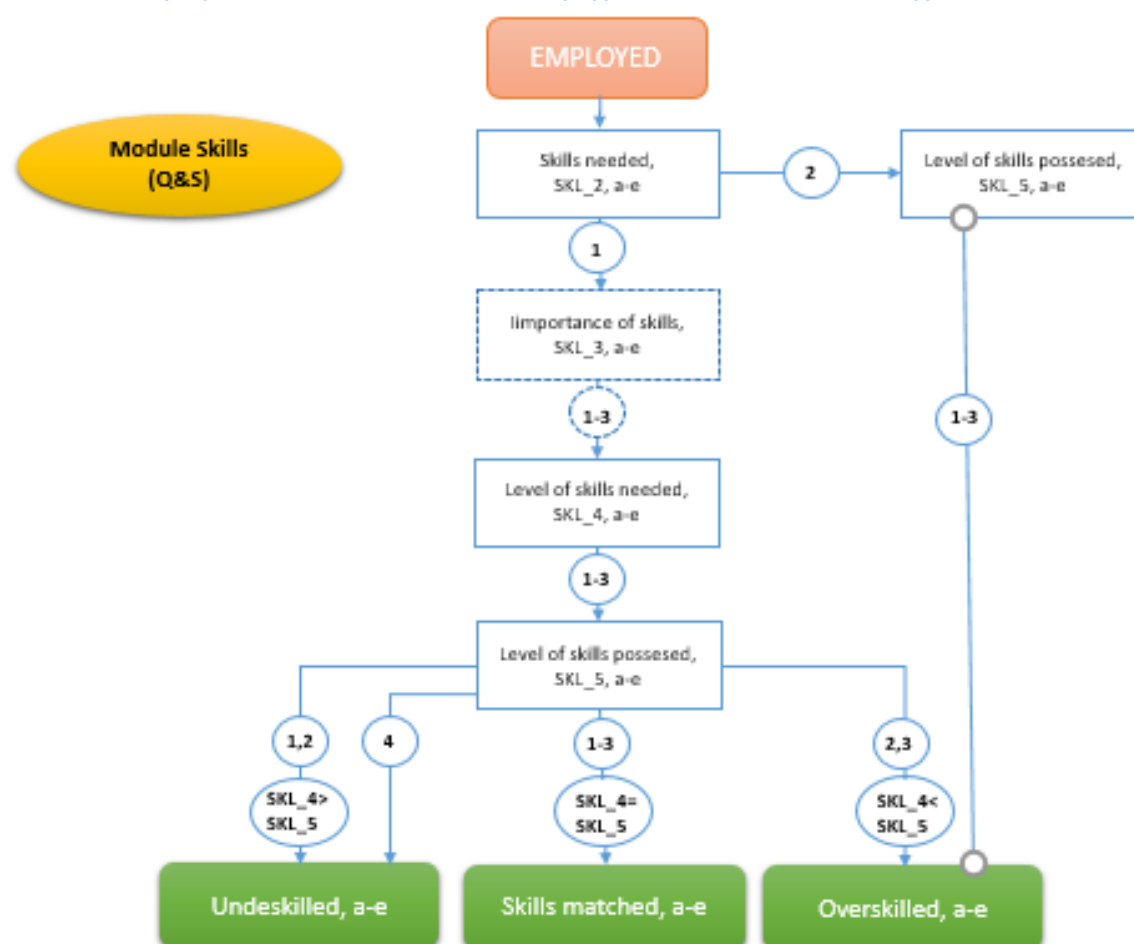
C. Flow chart and reference syntax

Persons in employment, self-perceived as matched/mismatched by overall skills



Reference Syntax	Status
IF (CLASSIFIED AS EMPLOYED AND SKL_1=1)	OVERALL SKILLS-matched
IF (CLASSIFIED AS EMPLOYED AND SKL_1=2)	OVERALL SKILLS-overskilled
IF (CLASSIFIED AS EMPLOYED AND SKL_1=3)	OVERALL SKILLS-underskilled

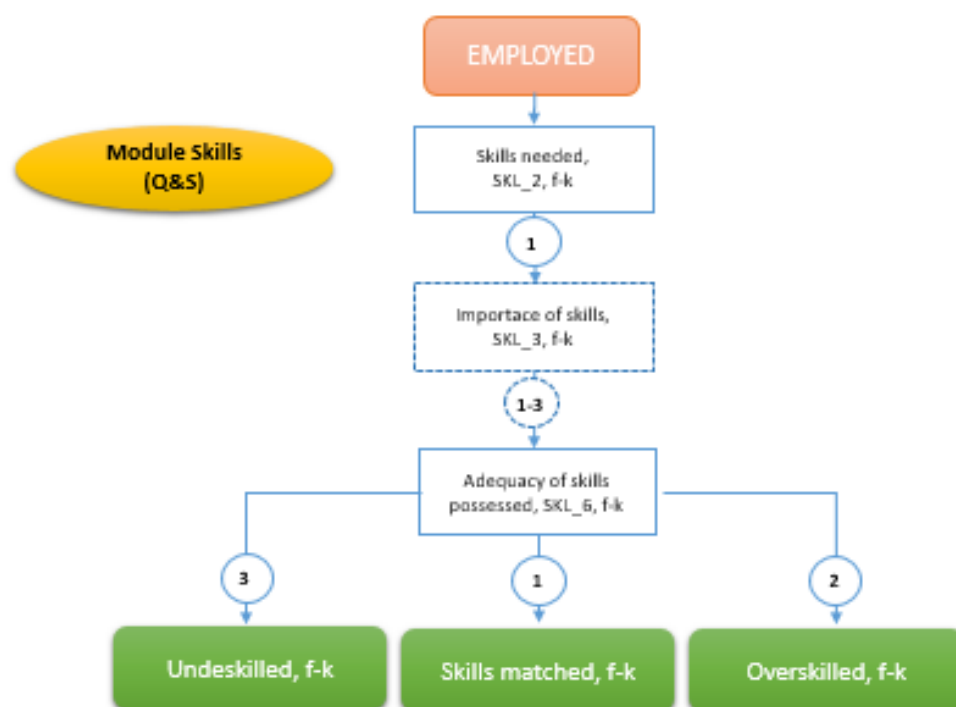
Persons in employment matched/mismatched by type and level of skills, skill types a-e



Reference Syntax	Status
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND SKL_4=1,2,3 AND SKL_5=1,2 AND SKL_4>SKL_5) OR (SKL_2=1 AND SKL_3=1,2,3 AND SKL_4=1,2,3 AND SKL_5=4))	UNDERSKILLED, skills type a-e
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND SKL_4=1,2,3 AND SKL_5=1,2,3 AND SKL_4=SKL_5))	MATCHED, skills type a-e
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND	UNDERSKILLED, skills type a-e

SKL_4=1,2,3 AND SKL_5=2,3 AND SKL_4<SKL_5) OR (SKL_2=2 AND SKL_5=1, 2,3))	
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Persons in employment matched/mismatched by type and level of skills, skill types f-k



Reference Syntax	Status
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND SKL_6=3))	UNDERSKILLED, skills type f-k
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND SKL_6=1))	MATCHED, skills type f-k
IF (CLASSIFIED AS EMPLOYED AND (SKL_2=1 AND SKL_3=1,2,3 AND SKL_6=2))	OVERSKILLED, skills type f-k