The extent of educational mismatch of different occupational groups, comparison of European countries

Ellu Saar, Eve-Liis Roosmaa, Liisa Martma

Institute of International Social Studies, Tallinn University, Estonia

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Aims of the paper

To analyse the extent of overeducation and undereducation among different occupational groups within European countries

• analyse the factors explaining the country-level variance
Previous research

The majority of exiting work focuses on mismatches in individual countries or country groups, on specific groups (e.g. tertiary graduates) or measuring the mismatch effect on wage, job satisfaction etc.

Previous findings indicate cyclical changes in overeducation rates, i.e. increase somewhat following the onset of the great recession in 2008 and decrease thereafter in 2010 (see McGuiness, Bergin & Whelan, 2017).
Data

We analyse the data of EU-LFS 2009 (during the recession) and 2014 (after the recession).
Measuring over/undereducation

Most commonly used measures:

- Workers’ self-assessment (subjective)
- Realized matches (objective)
- Job analysis (objective)

No subjective questions in the EU-LFS:

- We use the RM approach, which is indicated to adjust to skills upgrading due to technological change or new formal qualification requirements, what might ease comparisons across cohorts, time points or countries (Capsada-Munsech, 2019)

- Critics: the potential impact on the results of the supply side of the market. Potential underestimation of the level of overeducation (Muñoz de Bustillo et al., 2018).
Calculating over/undereducation

We calculate the **modal level** of education (using **four** ISCED categories of <2, 3, 4, 5-8) for each **two-digit occupation group** in each country.

The sample for the study is restricted to individuals who are working **full-time**.

Example:

• if the modal level of schooling in a particular two-digit occupation in a country is **ISCED 3**:
  • individuals having **ISCED levels 4 ≥** are overeducated
  • and having **≤ ISCED level 2** are undereducated
Under- and overeducation rate in 2009 and 2014

Source: Authors’ calculations based on EU-LFS 2009, 2014; RM approach, sample restricted to full-time workers
Under- and overeducation rates by occupational groups in 2009 and 2014

Source: Authors’ calculations based on EU-LFS 2009, 2014; RM approach, sample restricted to full-time workers
High skilled white-collar, undereducated rate by countries in 2009 and 2014

Source: Authors' calculations based on EU-LFS 2009, 2014; sample restricted to full-time workers
Low skilled white-collar, overeducated rate by countries in 2009 and 2014

Source: Authors’ calculations based on EU-LFS 2009, 2014; sample restricted to full-time workers
Note: * small sample size
Explanatory variables: individual and workplace characteristics

Individual level characteristics: gender, age group, job tenure

Workplace characteristics: Industry, size of the firm
Explanatory variables: Macro-level

The chosen variables are reflecting the potential demand and supply-side factors that may have an effect on over/undereducation.

**Business cycle effects** (Verhaest & Van der Velden, 2012; McGuiness et al., 2017)

- **unemployment rate** -> employers inflate recruitment criteria to filter best candidates or hire deliberately individuals with higher educational level (Bulmahn and Krakel, 2002).

**Innovation index**: higher innovation index -> lower probability of being overeducated

Overeducation could arise due to the supply of educated labor outrunning the demand (Davia et al., 2007; McGuiness et al., 2017)

- % of tertiary educated among working-age population
Logistic regression, macro-level variables

<table>
<thead>
<tr>
<th></th>
<th>Undereducation¹</th>
<th>Overeducation²</th>
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<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2014</td>
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<tr>
<td><strong>Unemployment rate</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>-.026***</td>
<td>-.027***</td>
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<tr>
<td><strong>Innovation index</strong></td>
<td>.742***</td>
<td>.022***</td>
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<tr>
<td><strong>Tertiary educated %</strong></td>
<td>.061***</td>
<td>.011***</td>
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<td>among 20-64</td>
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¹Undereducation is measured among high skilled white collar occupational groups (ISCO-08 codes 1-3).
²Overeducation is measured among low skilled white collar occupational groups (ISCO-08 codes 4-5)

*** p ≤ .001; ** p ≤ .01; * p ≤ .05

Notes: Models include gender, age groups, job tenure, industry, firm size. Macro-level variables were added separately to each model. Sample is restricted to full-time workers.
Source: Own calculations based on EU LFS 2009 and 2014.
Next step of the paper

Assess whether the relations between income, educational attainment, undereducation and overeducation differ for lower, middle and upper-middle class occupations.


