

# Patterns of Overeducation in Europe: The Role of Field of Study

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## **Extended Abstract**

### *Background and research question of the paper*

Overeducation, if properly measured, reflects an educational mismatch between what is demanded by labour markets and what is supplied by the educational system's graduates. As such, it is a crucial aspect of labour market integration, the more so in times of increasing student numbers. From the macroeconomic point of view, it might reflect a waste of scarce human capital, from the individuals' perspective it might result in e.g. less job satisfaction and earnings. A rather seldomly investigated topic is the role of field-of-study for the incidence of overeducation in a cross-country comparison based on the same data set. Our paper aims to fill this gap.

### *Data, methodology and hypotheses*

This study investigates the incidence of overeducation among young (20-35 years) highly-educated workers in 21 EU countries and its underlying factors based on the European Labor Force Survey 2016 (EU-LFS). We focus on vertical inadequacy, following the realized matches approach proposed by Kiker et al. (1997). We apply the 80th percentile of the levels of education within each occupation group as proposed by Ortiz & Kucel (2008). It considers a worker to be overeducated in her given job match if her educational level exceeds the 80th percentile of the distribution of observed levels of education in the given occupation. As a sensitivity check, we additionally report results calculated based on the mode as the educational standard. Although controlling for a wide range of covariates, the particular interest lies in the role of fields of study for vertical educational mismatch. We suggest that field differences regarding occupational closure and productivity signals are related to risk differences across fields with respect to overeducation. Moreover, we expect that gender stereotypes set different risks for men and women within the same field. Finally, we assume that using the mode instead of the 80th percentile as the standard education within the occupational group relates to a higher (conditional) magnitude of overeducation. We estimate the incidence of overeducation as a Probit model, for each of the 21 countries separately and for a cross-country sample. The latter one includes country dummies which control for nation-specific risks originating in e.g. the educational system, or the labour market. All regressions include interactions of fields-of-study with gender in order to test the expected gender-specific risks. Furthermore, it cannot be excluded that employment selection correlates with the overeducation risk. Therefore, we introduce a two-step-Heckman procedure to control for selection bias.

### *Added value of this paper*

Our study makes several contributions to the existing empirical literature on the determinants of overeducation. First, we include a range of new candidates for explanatory factors into our framework. Beyond a person's field of study, we control for a range of household characteristics such as the presence of inactive and unemployed household members. Second, our results allow for a comprehensive country comparison of the associations between overeducation and distinct micro level characteristics within the EU area. This helps to identify differences in the seriousness of the phenomenon between countries and to develop tailor-made policy recipes.

### *Findings*

It turned out that both in the cross-country estimation and at country level differences in overeducation risk between graduates from different fields are significant. Furthermore, gender discrepancies in the impact of certain fields are noticeable. At the European level, graduates from Services, Natural Sciences and Agriculture are found to exhibit the highest risk among men. At the same time, male graduates from fields like ICT, Health/Welfare, Education, Engineering but interestingly also Arts/Humanities, are exposed to a rather low risk. The field-specific risks apply for the majority of countries and are robust against a measure change in the educational standard. Gender differences in field-specific overeducation risks mostly lack statistical significance, with Engineering and Arts and Humanities, where female graduates are assessed to be at significantly higher risk than male graduates, marking the exceptions. By and large, the above named sensitivity analysis deploying an alternative method of measuring overeducation confirms this pattern. Moreover, country fixed effects point to relevant structural differences between national labour markets and between educational systems. As we included a selection correction in our estimation approach, country differences concerning employment selection should not be the source of this heterogeneity. Rather, differences in educational systems, in the capacities of labour markets to absorb young tertiary graduates as well as in culture- and tradition-based attitudes seem likely candidates.

### *Limitations*

We have to leave this last mentioned issue for a more detailed analysis in future research. Further arguments add to the limitations of our study. With the underlying econometric approach, causal interferences must not be drawn. Finally, we are aware of the sensitivity of results with respect to the measure of overeducation. Results often change when subjective evaluations of overeducation are used instead of the statistical measure (Bauer 2002, Chiswick and Miller 2010, Nielsen 2011, Boll et al. 2016). Therefore, thirdly, it would be interesting to evaluate our results based on different specifications of the target variable. Unfortunately, with the data at hand, this was not possible.