

# **The Intersection of Gender and Education: Educational Expansion and Gender Inequality in a Comparative Perspective**

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## **PAA 2019 Abstract**

The expansion of higher education, evident in most industrial countries, has drawn attention to its possible consequences for social and economic inequality. Education affects individuals' life chances and wellbeing (Hout, 2012) and is closely related to labor market achievements. As such, education is often seen as a vehicle for reducing group inequality (Brand & Xie, 2010). The rise in education, which is especially pronounced among women (Diprete & Buchman, 2013; England, 2010), has transformed the composition of the labor force in meaningful ways. First, the skill composition of the labor force has changed, with the influx of highly skilled workers. Second, because education is closely related to women's economic behavior, the gender composition of the labor force has changed as well. Finally, the entry of women to new fields of study (England 2010) has further affected the composition of highly-skilled occupations.

In this study we ask whether gender inequalities in labor market outcomes decline in a context of expanded higher education. Highly educated women, who have invested considerably in human capital, tend to postpone entry to family life, have fewer children, and are more committed to market work. In a context where men's and women's educational attainment converges and work patterns become more similar, gender inequality is expected to decline. The expansion of higher education is therefore expected to contribute to rising gender equality in the labor market. Indeed, there are indications that the gender gaps in wage and position have narrowed over time. However, education in itself cannot account for the entire gender gap, as there are still important gender differences in types of jobs, positions and rewards. Moreover, with the expansion of higher education, the supply of highly skilled workers might surpass the demand. In the competition over prestigious positions, women may still find themselves in a disadvantaged position relative to men.

Theoretically, we test two arguments. The first is derived from the "tournament theory" (Lazear and Rosen, 1981) that claims that while employers prefer workers with high education, as higher investments in human capital and higher abilities ensure higher productivity, their choices are affected also by gender stereotypes that enter the evaluation process. Employers favor men over women as employees because they believe that women are less productive. In such case, women are pushed into positions for which they are overqualified, and the gender gap in position and wages persists or even increases. However, women's disadvantage declines in positions or occupations that

demand specific skills and where there are good criteria for measuring productivity. In positions with a more ambiguous assessment of individual productivity (e.g., clerical jobs), employers usually invoke gender stereotypes and, hence discriminate against women.

From a somewhat different perspective, the “gender queue” theory claims that employers have preferences for certain types of workers – they rank workers according to their abilities and skills, but also according to preferred characteristics. Adding the gender dimension, Reskin & Roos (1990) argue that employers prefer men over women, so men get the good jobs while women are left with the jobs that pay less and offer fewer opportunities for promotion. Here, again, this discriminatory process varies across occupations and positions. Both theories agree that despite their increased education, women are still at a disadvantage as compared to men in their access to professional and managerial jobs. However, the two theories differ in their expectations regarding the gender gap in access to specific types of occupations. The tournament theory would argue that the gender gap is expected to be lower in access to professions that are formally certified (e.g., medicine, law, engineering) than in other professional and non-professional jobs, while the queuing theory would argue the opposite.

Our main purpose is to test these theories in contexts that differ in their educational and labor market characteristics. Therefore, the current study focuses on men and women with academic education and their occupations in different countries. We ask under which conditions gender inequality in matching occupations to qualifications narrows, and whether a high supply of workers with higher education affects these inequalities. The study is therefore conducted in different contexts (i.e., countries) that represent variation in the level of educational change and labor market organization. It will shed light on processes that have contributed to closing the gaps between the genders, but also on those that have increased the disparities within gender groups.

### **Data and Method**

The analysis is based on the 2015 European Labor force surveys and includes men and women with academic education, who graduated during the last 15 years. The analyses include 19 countries (Belgium, Switzerland, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Luxemburg, Netherlands, Norway, Portugal, Sweden, Slovakia and the UK).

On the basis of detailed occupations, we differentiate among several types: (1) the "classical" professions (including law, medicine, engineering, and university professors); (2) other professional occupations (which include occupations such as psychologists, economists, biologists, chemists and also managers); (3) typical female-type occupations, which include high-school teachers and

registered nurses (occupations that would otherwise be categorized as “other professionals”); and (4) nonacademic occupations (including all other occupations that do not necessarily demand academic education, such as technical, clerical, sales and service occupations). We use multinomial logistic regression to analyze the likelihood of entering a specific occupation.<sup>1</sup> Our main independent variable is gender, and our models include also the level of education; fields of study, working hours, and other demographic characteristics including age, family status and migration status.

Our main interest is in the effect of educational expansion on gender inequality in access to academic occupations. We use four country-level variables – the rate of women with academic education in 2015; the rate of change in academic education between 1995 and 2015; the rate of female labor force participation in 2015; and an index of gender inequality (as of 2010). Gender inequality data were obtained from the UN dataset (<http://hdr.undp.org/en/composite/GII>). All other country-level variables were obtained from the OECD database (<https://data.oecd.org/>).

We employ two-stage logistic and multilevel models. First, we estimated a model for each country separately to obtain the country-specific estimates of the gender effect on the likelihood of being employed in an academic occupation. Similarly, we estimated multinomial logistic regressions to obtain country-specific estimates of the likelihood of being employed in a classic profession, other PTM occupation, or nonacademic occupation. In all these models, we included higher level of education (MA+), field of studies (humanities, education, social sciences, science, engineering, agriculture, health and services), hours of work, migration status, marital status and age. Teachers and nurses are excluded from the sample because these occupations tend to be heavily populated by women.

In the second step, we examined whether educational expansion is associated with the gender gap in entering academic (or different types of academic) occupations. We follow Bryan and Jenkins’ (2016) approach because of the small number of countries (N =19) (see also Heisig 2011; Brons, Liefbroer & Ganzeboom 2017)). The two-step approach is preferred over standard multilevel models for data which have a large N of level-1 observations but only a small N of level-2 units (Heisig, 2011), as is the case with our data (about 150,000 observations at the individual level nested in 19 countries). Additionally, the two-step approach allows a more accurate specification of individual-level associations. In the ‘second step regressions,’ the country-specific gender odds ratio from the ‘first step regressions’ (the first odds ratio were obtained from the logistic regression model

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<sup>1</sup> Because we are interested in gender differences in employment in specific occupations, we excluded the typical female-type academic occupations – teachers and nurses (category 3).

and the second from the multinomial regression) are modeled as a function of country-level covariates. To account for heteroscedasticity of known form, that is, taking into account that our estimated dependent variables have different standard errors (since they are estimated based on different regressions based on different country data), we use a FGLS-like estimator, using weights that are derived in part from the standard error of the dependent variable estimated in the first step.

### **Preliminary results**

Preliminary results suggest substantial variation across countries in level of education and in the gender gap in entering academic occupations. We found that in most countries women with high education are less likely than men to enter academic (professional) occupations. However, equality is observed in three countries: Norway, the Netherlands and Luxemburg. The odds of working in the classic professions are similar in France, Greece and Italy, and women's odds of working in non-classic (academic) occupations as opposed to working in nonacademic occupations are similar also in Spain and Ireland. Our results suggest that educational expansion does not harm women's position in the labor market. We found that gender differences in the odds of having an academic job or the odds of holding a classic profession decline (or remain the same) in countries that experienced more rapid expansion of educational attainment. However, gender differences in the odds of being employed in other academic positions are lower in countries that have a higher level of education and in countries that have experienced a rapid growth in higher education. In the next step of our research, we will examine the extent to which fields of study are a possible mechanism as regards the existing gender gaps in entering lucrative occupations in many European countries in light of the narrowing of the gender gap in educational attainment.