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Breaking the Mold or Reproducing Class?
A Comparative Analysis of Gender-Atypical Field-of-Study Choices

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Background and research questions

Despite the reversal of the gender gap in educational attainment, gender segregation in fields of study persists. Women predominantly enrol in the humanities, health, and education, while men remain overrepresented in STEM fields (Barone et al., 2019; Charles & Bradley, 2002; OECD, 2024). This pattern has significant implications for labour market outcomes, as fields typically chosen by women tend to offer lower career and economic returns compared to typically male ones (Bobbitt-Zeher, 2007; Bol & Heisig, 2021; Sloane et al., 2021). Existing research has highlighted adherence to gender roles and expectations, alongside social mobility considerations, as particularly meaningful mechanisms shaping field-of-study choices.

To uncover these mechanisms, this study investigates *the roles of gender and social origin in shaping field-of-study choices*. To provide a broader perspective that captures both institutional influences and temporal change, we examine a wide range of countries worldwide and further ask: *Do the effects of gender and social origin differ across institutional contexts and cohorts?*

While previous research on this topic has largely focused on single-country studies, this study offers an original contribution by (1) conducting a broad comparative analysis across 34 countries, (2) examining heterogeneity across birth cohorts, and (3) employing alternative classifications of fields of study that reflect both their gender composition and economic returns.

Theoretical framework

The choice of gender (a)typical fields of study has been understood, in previous research, through the lenses of gender socialisation and social mobility. These two perspectives emphasise different aspects. Whereas the first focuses on the gender composition of each field, the latter highlights the expected economic returns of different fields. This produces distinct categorization of fields of study, an issue which has been so far overlooked and which we aim to address.

According to *gendered socialisation theory*, individuals internalise gender roles early in life, primarily within the family (Bussey & Bandura, 1999; Farré & Vella, 2013). This process traditionally leads boys to pursue masculine fields and girls to gravitate towards feminine ones, although with variation across social classes. In lower-class families, gender norms and the division of labour are more likely to be traditional (Davis & Greenstein, 2004; Polavieja & Platt, 2014), ultimately increasing the gender typicality of educational choices. Conversely, in upper-class families, where gender norms tend to be less traditional, children are expected to pursue gender atypical fields of study more often than those from lower-class families.

Given the vertical labour market segregation associated with horizontal segregation in fields of study, it is likely that mechanisms of *social mobility* and the fear of social demotion (Breen & Goldthorpe, 1997; Goldthorpe, 1996) also contribute to shape individual educational choices (Hallsten & Thaning, 2018; Seehuus, 2019; Triventi et al., 2017; van de Werfhorst & Hofstede, 2007). As a result, sons and daughters from upper-class families, motivated to preserve their social status and supported by greater resources to navigate the educational system, might be more likely to select typically male-dominated fields with stronger labour market returns. For upper-class men in particular, gender atypical educational choices would be most often associated with the risk of downward mobility.

Research on gender and class influences in gender-atypical study choices has mostly focused on single countries like Finland, Norway, and the Netherlands (Prix & Kilpi-Jakonen, 2022; Seehuus, 2019; van de Werfhorst, 2017), often with limited cohorts. While insightful, this narrow focus hinders cross-national comparison, leaving many regions—especially Southern Europe and areas outside the EU—understudied.

Indeed, while overall patterns may appear broadly similar across countries (Barone, 2011), evidence reveals substantial differences between educational systems and their influence on the stratification of educational choices. Contexts with strong IVET and highly stratified systems tend to display higher levels of gender segregation in both secondary and tertiary education (Kriesi & Imdorf, 2019). Moreover, educational systems can either reinforce or weaken the influence of parental background on students' choices (Triventi et al., 2020). Hence, a comparative and longitudinal approach is warranted to better understand how social mobility and gender norms interact with students' gender and social origin.

Data and methods

We rely on the first and second cycles of the Survey of Adult Skills (PIAAC) collected between 2011 and 2018, drawing on representative data for 34 countries. The sample is constituted by individuals aged 16-65 reporting at least secondary education (N = 154,927).

For our independent variable, we use information about parental education and employ the dominance criterion to construct individual social origin. The resulting measure distinguishes between 1 "Low class", 2 "Middle class" and 3 "Upper class". Concerning our outcome, we employ the 9-categories classification of fields of study available in PIAAC.

Our methodological approach relies on multinomial logistic regression models. We here present predicted probabilities pooled by country. In the next steps, we plan to examine cross-country and cross-cohort differences to assess how educational systems shape the link between social origin and field-of-study choice over time.

Main findings

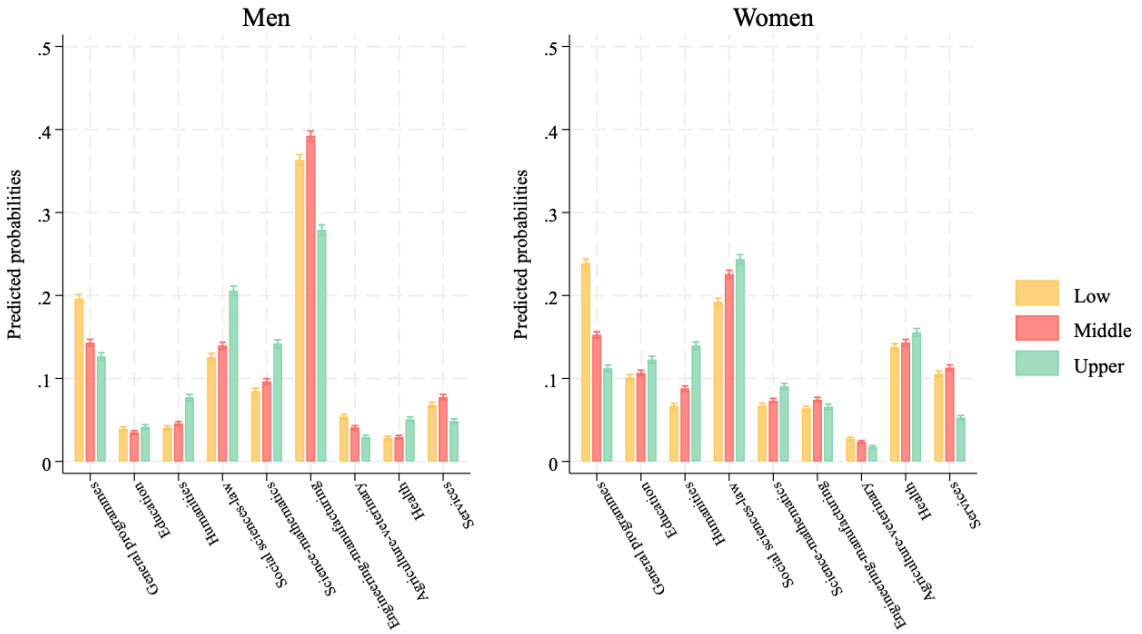

Figure 1: Predicted probabilities of field of study by social origin and gender. All countries pooled. (N = 154,927). Data source: PIAAC.

Regardless of social origin, we observe a high overrepresentation of men in "Engineering and Manufacturing" and a concentration of women in "Social sciences and Law". This aligns with the common understanding of these two fields as, respectively, male and female typical educational choices. Yet, notwithstanding gender differences in the modal field, there are strong similarities in the ranking of social origin within fields across gender, even though the levels differ. This also suggests that social origin exerts a strong influence on individual educational choices. Moreover, Figure 1 shows that upper-class individuals are often more likely than low and middle-class ones to enroll in gender atypical fields of study—for instance, vis a vis their counterparts from less privileged classes, upper-class men more often enter "Humanities", and upper-class women more often pursue "Science and Mathematics".

Further steps will include a comparison across countries and between cohorts, along with an in-depth analysis of gender (a)typical field of study choices by evaluating alternative categorizations and distinguishing gender composition from economic returns.

References

Barone, C. (2011). Some things never change: Gender segregation in higher education across eight nations and three decades. *Sociology of education*, *84*(2), 157-176.

Barone, C., Schizzerotto, A., Assirelli, G., & Abbiati, G. (2019). Nudging gender desegregation: A field experiment on the causal effect of information barriers on gender inequalities in higher education. *European Societies*, *21*(3), 356-377.

Bobbitt-Zeher, D. (2007). The gender income gap and the role of education. *Sociology of education*, 80(1), 1-22.

Bol, T., & Heisig, J. P. (2021). Explaining wage differentials by field of study among higher education graduates: Evidence from a large-scale survey of adult skills. *Social Science Research*, *99*, 102594.

Breen, R., & Goldthorpe, J. H. (1997). Explaining educational differentials: Towards a formal rational action theory. *Rationality and society*, 9(3), 275-305.

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological review, 106*(4), 676.

Charles, M., & Bradley, K. (2002). Equal but separate? A cross-national study of sex segregation in higher education. *American sociological review*, 67(4), 573-599.

Davis, S. N., & Greenstein, T. N. (2004). Cross‐national variations in the division of household labor. *Journal of Marriage and Family, 66*(5), 1260-1271.

Farré, L., & Vella, F. (2013). The intergenerational transmission of gender role attitudes and its implications for female labour force participation. *Economica, 80*(318), 219-247.

Goldthorpe, J. H. (1996). Class analysis and the reorientation of class theory: the case of persisting differentials in educational attainment. *British journal of Sociology*, 481-505.

Hällsten, M., & Thaning, M. (2018). Multiple dimensions of social background and horizontal educational attainment in Sweden. *Research in Social Stratification and Mobility*, 56, 40-52.

Kriesi, I., & Imdorf, C. (2019). Gender segregation in education. In *Research handbook on the sociology of education* (pp. 193-212). Edward Elgar Publishing.

OECD. (2024). *Equity in education and on the labour market: Main findings from Education at a Glance 2024* (OECD Education Policy Perspectives, No. 107). OECD Publishing.

Polavieja, J. G., & Platt, L. (2014). Nurse or mechanic? The role of parental socialization and children's personality in the formation of sex-typed occupational aspirations. *Social Forces*, 93(1), 31-61.

Prix, I., & Kilpi-Jakonen, E. (2022). Not in a class of One's own: social origin differentials in applying to gender-(a) typical fields of study across the educational hierarchy. *European Sociological Review*, *38*(6), 920-941.

Seehuus, S. (2019). Social class background and gender‐(a) typical choices of fields of study in higher education. *The British journal of sociology*, *70*(4), 1349-1373.

Sloane, C. M., Hurst, E. G., & Black, D. A. (2021). College majors, occupations, and the gender wage gap. *Journal of Economic Perspectives*, *35*(4), 223-248.

Triventi, M., Vergolini, L., & Zanini, N. (2017). Do individuals with high social background graduate from more rewarding fields of study? Changing patterns before and after the 'Bologna process'. *Research in Social Stratification and Mobility*, 51, 28-40.

Triventi, M., Skopek, J., Kulic, N., Buchholz, S., & Blossfeld, H. P. (2020). Advantage 'finds its way': How privileged families exploit opportunities in different systems of secondary education. *Sociology*, *54*(2), 237-257.

Van de Werfhorst, H. G., & Hofstede, S. (2007). Cultural capital or relative risk aversion? Two mechanisms for educational inequality compared 1. *The British journal of sociology*, *58*(3), 391-415.

Van de Werfhorst, H. G. (2017). Gender segregation across fields of study in post-secondary education: Trends and social differentials. *European Sociological Review*, *33*(3), 449-464.