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Why do parental education effects on wages differ by study fields? An analysis of bachelor- and master graduates in Austria

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ABSTRACT

From an equity perspective, it is important that higher education graduates have the same labour market opportunities after graduation regardless of their social background. However, empirical evidence on the direct effect of parental education on labour market outcomes is mixed, with heterogeneous effects across fields of study. A common finding is that social origin is more relevant for labour market success for graduates in business, law, and the arts than for graduates in engineering, IT, or medicine. Analysis of comprehensive Austrian administrative data show disadvantages for first-generation graduates compared to graduates with tertiary educated parents in some fields (e.g. law), but advantages in others (e.g. engineering). Multilevel models show that the composition of study fields in terms of first-generation graduates plays a crucial role in explaining these differences. Other factors such as the distinction between 'soft' and 'hard' disciplines or the proportion of graduates working in more bureaucratic institutions play no or a lesser role.

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higher education graduates; fields of study; labour market entrance; intergenerational mobility

Introduction

Individuals' social status, opportunities, and chances are strongly determined by their social background. Education plays a key role in the reproduction of social inequalities from one generation to the next. There is extensive empirical evidence that lower levels of parental education lead to lower levels of offspring education, which in turn leads to lower earnings (e.g. Breen and Müller 2020). This is also the case for higher education: students from lower social backgrounds must overcome many barriers to enter (e.g. Becker 2019) and they are less likely to succeed in higher education than those from more privileged social backgrounds (e.g. Müller and Klein 2023).

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However, the evidence on how social origin affects those leaving higher education and entering the labour market is less clear. While some scholars have shown that labour market opportunities are equal for tertiary graduates of all socio-economic origins (e.g. Hout 1988; Torche 2011 for occupational prestige in the USA; Spexard et al. 2022 for wages in Germany), others found effects of social origin on different measures of labour market success, such as higher education graduates' occupational status (e.g. Bukodi and Goldthorpe 2019 for the UK), earnings (e.g. Witteveen and Attewell 2020 for the USA; Bernardi and Gil-Hernández 2021 for Spain), or both (Hällsten 2013 for Sweden; Bernardi and Ballarino 2016 for 14 countries).

In the light of massification of higher education (Marginson 2016) and increasing numbers of students and graduates (OECD 2023), it is becoming more important to focus on the 'qualitative' differences within higher education (Lucas 2001). The prestige of the higher education institution partially explains social origin differences in labour market outcomes in the United States (Oh and Kim 2020; Witteveen and Attwell 2020). The strength of these effects tends to be smaller in countries with less stratified higher education system, such as Germany (Lee and Müller 2019) and Austria. Regarding fields of study, social origin proves to be more relevant for labour market success after graduating in business, law, the social sciences, humanities, and the arts than after graduating in engineering, IT, or medicine (e.g. Hansen 2001; Hällsten 2013; Jacob and Klein 2019). The reasons for these differences have so far only been speculated about, but (to the best of my knowledge) not systematically evaluated. Most researchers who have found differences between disciplines explain them in terms of the distinction between 'hard' and 'soft' educational fields (e.g. Hansen 2001; Manzoni and Streib 2018). This paper further develops and systematically tests this hypothesis and two alternative explanations: the proportion of first-generation graduates and the proportion of graduates working in more bureaucratic institutions in the respective fields of study.

Research on social origin effects on the labour market outcomes of tertiary graduates raises important questions relating to social justice. If privileged backgrounds pay off even among the highly selective group of those who have reached higher education, notions of meritocracy are challenged (Friedman and Laurison 2020). Conversely, if there are no effects of parental education for the higher educated, education could be interpreted as a key to intergenerational social advancement – a 'great equalizer of opportunities' (Bernardi and Ballarino 2016). This study contributes to the literature by picking up on a loose end of research on the direct effects of social origin to help us better understand where and how social inequalities are reproduced among the higher educated. From a policy perspective, equity and the situation of first-generation students are important concerns for higher education policymakers and universities. Such stakeholders can use the results to identify groups that could profit from measures to support their transition to the labour market.

After discussing previous findings and theoretical arguments, I will give a brief introduction on the Austrian (higher) education system and labour market characteristics. I then discuss data, variables, and the analytical strategy. Multilevel models will be estimated using high-quality administrative data of graduates from public research and applied universities from the academic years 2008/09 to 2014/15 in Austria. After presenting the results, the paper concludes with a discussion of the findings.

Theoretical arguments, previous findings and hypotheses

Fields of study and the social origin wage gap

Following human capital theory (Becker 1993), labour market success is the result of qualifications, skills, productivity, and motivation. However, social inequality research has shown, that the well-documented social-origin gap in the labour market performance is also the result of discrimination and favouritism in recruitment and promotion processes, and from unequal social networks (Bernardi 2016), mechanisms linked to the resources available in the parental household (Bourdieu and Passeron 1990).

It is plausible that the strength of these theoretical arguments varies from one academic discipline to another. The idea of different 'academic tribes' (Becher and Trowler 2001) postulates, that the 'knowledge structures of disciplines (the academic territories) strongly condition or even determine the behaviour and values of academics' (Trowler 2014, 18). This aligns with the finding that the importance of economic and cultural capital differs by academic discipline (Bourdieu 1988c). Hence, different academic disciplines can be interpreted as social subfields, each with its own rules, relatively high autonomy, its own history, and strong internal differentiation (Bourdieu 2018). Attempts to transfer this way of thinking to occupational fields are less sophisticated (Iellatchitch, Mayrhofer, and Meyer 2003). However, graduates from the same fields of study face field-specific labour markets, each with their own history, culture, market situation, entry requirements, and recruitment strategies. Each labour market has its own valued symbolic capital and rules to be played by to have a successful school-to-work transition (Schepper, Clycq, and Kyndt 2023). Individuals need to have the 'tacit knowledge' of what resources are needed to succeed in the specific fields (Bourdieu 2018) and they need to have a habitus and capitals that are congruent and valued where they want to work (Burke 2015).

Empirical research shows that students from privileged backgrounds tend to choose majors with higher income expectations (Iannelli, Gamoran, and Paterson 2018; Triventi, Vergolini, and Zanini 2017). Within fields of study, the effects of social class origin on wages (Hansen 2001; Hällsten 2013; Mastekaasa 2011; Crawford et al. 2016; Manzoni and Streib 2018), obtaining a top job (Macmillan, Tyler, and Vignoles 2015) and overeducation (Capsada-Munsech 2015, 794) are more pronounced in business, law, social sciences, humanities, and the arts and less important in engineering and natural sciences. The same disparities by academic discipline can be seen when analysing occupations: Bernardi and Gil-Hernández (2021) analysed the magnitude of social origin effects across academic occupations, finding stronger effects for high-level managers and for professionals in law and science. The matching of parents' and children's occupations (e.g. pharmacy student and pharmacist father) is particularly beneficial. In the UK, the social origin-gap is larger in traditional occupations such as law, medicine, and finance than in technical occupations, in which recruitment is more inclusive (Laurison and Friedman 2016). Rivera and Tilcsik (2016) highlighted how applications from fictitious students to US law schools that contain high-class signals receive significantly more callbacks, because perceived higher-class candidates are seen as better suited to notions of elite culture.

'Soft' and 'Hard' academic disciplines

Most researchers (Hansen 2001; Hällsten 2013; Jacob and Klein 2019; Manzoni and Streib 2018) who have found differences between fields of study explain them in terms of the distinction between 'hard' and 'soft' educational fields introduced by Biglan (1973) and famously taken up by Becher and Trowler (2001). Accordingly, natural sciences, engineering and agriculture are mono-paradigmatic or 'hard' fields, while 'soft' fields such as the social sciences, education and humanities are non-paradigmatic. This may have implications for the criteria used to assess the performance and potential of graduates in a labour market context, because of two theoretical arguments. First, in disciplines with more ambiguous assessment criteria, personal preferences may be more important in recruitment and promotion processes. The scope for discrimination and favouritism is greater where it is more difficult to estimate the productivity of candidates (Bills, Stasio, and Gërxhani 2017; Hartmann 2000; Torche 2015). The same applies to social networks. Personal recommendations are more important in occupations where job performance is harder to measure (Hansen 2001). Second, in 'soft' fields of education, the demonstration and use of social (Lin 1999) and cultural (Erickson 1996) capital acquired in the family can lead to higher productivity. For example, as a key account manager in a large law firm, it may be important to know the right people and to know how to dress, move and speak in specific social settings. In such cases, the skills acquired in educational institutions may not compensate for an upbringing in lower social classes.

In summary, (parental) social networks and cultural capital acquired from parents are more important for productivity and there is more scope for discrimination and favouritism in non-paradigmatic fields. Therefore, it is expected that the positive effect of higher parental education on wages will be stronger in 'soft' than in 'hard' fields of study (hypothesis 1).[1]

Proportion of first-generation graduates

Other theoretical considerations offer alternative explanations for differences between study fields. It has been consistently shown that wage discrimination against women is stronger in working contexts where they are under-represented (e.g. Rivera 2020). The same theoretical arguments can be used to explain wage differences by parental education.

Field theory claims that the elites of the respective fields define the cultural practices and the habitus, which determine career trajectories (Bourdieu 1988). First-generation students often do not know the adequate codes and have more problems in fitting in higher education, whose rules are defined by academically trained elites, mostly with high social backgrounds (Bourdieu and Passeron 1990). The same is true for different labour market cultures, which can be more or less dominated by codes that are linked to being born and raised in an academic environment, as well as depending on the social background of the elites in that field. Enrolling in higher education institutions (Nairz-Wirth, Feldmann, and Spiegl 2017) and pushing to enter middle – and upper-class careers (Lehmann 2021) often comes with alienation from the class of origin. Those first-generation graduates' problems of fitting in are expected to be higher in

fields with many descendants from academic families, in which their more academic culture is hegemonic. Furthermore, the likelihood of gatekeeping positions being filled by graduates from privileged backgrounds is higher in fields where they make up a larger proportion of all graduates. Decision-makers tend to 'define merit in their own image' (Rivera 2020) and favour applicants from the same (high) social background. Cultural skills are likely to be most important in occupations that 'require representation of social skills typical among the upper class' (Hansen 2001, 214).

Thus, the positive effect of having an academically educated parent on wages is expected to be larger in fields of study with a small proportion of first-generation graduates (hypothesis 2).

Bureaucratic labour markets

Torche (2011) argues that social networks and discrimination are less important in more meritocratic academic labour markets. This is also the case for organisations with more formalised and transparent hiring and promotion processes, as disadvantaged groups benefit from bureaucratic regulations (e.g. Siebers and Dennissen 2015). Bureaucracy can be seen as a 'great leveller' (Baron et al. 2007). Thus, the field-specific structure of the labour markets could also explain wage-gap differences by fields of study. Recruitment procedures and promotion rules are more standardised in public administration and in larger organisations (Amis, Mair, and Munir 2020). Particularly in the public sector, pay differentials are mainly the result of salary classifications based on formal educational qualifications and promotions are based on seniority. Mastekaasa (2011) and Hällsten (2013) have shown that the positive effects of higher social origin are smaller in more bureaucratic institutions (public sector and large companies) than in less bureaucratic smaller companies. The effect of higher parental education is expected to be smaller in fields of study with a higher proportion of graduates working in more bureaucratic institutions (large organisations and the public sector; hypothesis 3).

The Austrian context

Austria combines early tracking with a strong VET system consisting of vocational training systems and specialised high schools (mainly technical and business), which are considered short-cycle tertiary programmes (level 5) in the ISCED-2013 classification, but not considered higher education in the national Austrian classification. Higher education is organised in four sectors: public research universities, (public) universities of applied sciences ('Fachhochschulen'), (public) teacher training colleges and private universities. The higher education system is weakly stratified: private higher education plays a subordinate role[2] and heterogeneity in prestige across institutions is low. Universities of applied sciences focus on a subset of disciplines (engineering, computer sciences, business, health) and on training in line with current labour market needs. They offer many extra-occupational programmes; curricula are more structured, and the study duration is significantly shorter than at public research universities. The proportion of working-class-students is high compared to public research universities (Unger et al. 2020). In the public sector, tuition fees are comparatively low (€727 for EU-citizens and €1454 for non-EU-citizens per academic year) or non-existent (OECD 2022,

295ff). Access to Austrias public research universities traditionally has been open (except for the arts and sports courses, where aptitude is required) for all those with a secondary school leaving certificate ('Matura'). Although admission procedures have become more important since 2005, highly competitive admission procedures are limited to a few programmes, such as medicine, psychology (at public research universities, Haag et al. 2020), social work, and physiotherapy (at universities of applied sciences).

Higher-level tertiary education is selective and less popular than in other countries: the enrolment rates for ISCED level 6 or higher in the 20–24 age group are low (Austria 36% compared to the OECD average of 41%; OECD 2023, 140). Given the even lower educational attainment of the parental generation, the proportion of first-generation students (61% in 2019) is among the highest in Europe (Unger et al. 2020, 133). Despite the high percentage of first-generation students, intergenerational reproduction of education is strong in Austria. The probability of enrolling in higher education is 2.5 times higher for individuals whose parents have at least a general qualification for university entrance than for those whose parents have a lower formal education (Unger et al. 2020, 123).

The Austrian labour market is formal and qualification-based. This is similar to other Central European countries, where there is a strong link between occupational placement and educational certificates (DiPrete et al. 2017), and there is a high concentration of collective agreements with guaranteed minimum wages. From 2010 to 2019, unemployment rates have been low in general, and very low for tertiary graduates (between 2.4% and 4% in the 20–64 age group; Eurostat 2022).

Data, variables and analytic strategy

Data

The ATRACK database combines various administrative data (Educational Statistics, Population Register, Public Employment Service Austria, Main Association of Austrian Social Security Institutions, Pay Slips, and data from the Statistical Business Register). The database was created as part of a cooperative project between Statistics Austria and 14 Austrian public research universities. It contains information on higher education and labour market careers of all higher education graduates from Austrian public research universities and universities of applied sciences ('Fachhochschulen') from 2009/10 to 2018/19 (Huber, Zehetgruber, and Einfalt 2022).[3] In addition to socio-demographic characteristics and data on higher education, it contains indicators for labour market outcomes of higher education graduates for several points in time in the period from three years before to five years after graduation. All graduation cohorts that can be monitored for five years after graduation (up to 2014/15) are included. I have decided to not include PhD graduates because they have considerably more work experience and are therefore not comparable with bachelor and master graduates. Some vocational schools are categorised as short-cycle tertiary education (ISCED 2011 Level 5). However, these schools are not considered higher education institutions in the Austrian discourse and are not included in the analysis.

To engage in a meaningful analysis of income, some graduates had to be excluded (Table A2). The analysis is limited to the highest most recent qualification at ISCED 6

(bachelor) and ISCED 7 (master) level. Graduates who are still studying in another ISCED-level 6 or 7 programme at the reference date are excluded from the analysis, as they are considered to not be fully available for the labour market. I have also excluded graduates aged 35 or older at the time of graduation and doctoral students working in the education sector (mainly at universities) and without formal employment (including scholarships), because they are considered to have not yet completed their education, unlike those working in other sectors of the economy. Income data is only available for employees in Austria, and not for self-employed, unemployed or those moving to another country. As the use of part-time-income is not compelling without information on the exact hours worked (which is missing from ATRACK data). The models are restricted to full-time employees and therefore results are only valid for this group. First-generation graduates are over-represented in the analysis (75% compared to 71% for all degrees). This is primarily due to the exclusion of graduates who have relocated abroad (of whom only 55% are first-generation graduates).[4] As the hypotheses are at the aggregate level of the field of study, a possible bias is difficult to estimate. The results for all graduates could be different if the proportion of first-generation graduates who moved abroad and the wage differences between those who moved abroad and those who stayed in Austria varied by field of study.

Using administrative data has the advantage of having information on a high number of study subjects. This allows for in-depth analysis of fields of study and types of institutions and the application of complex statistical models. It also allows me to identify subtle differences between academic disciplines that are usually lumped into one category. Furthermore, non-participation and item non-response are not a concern. The administrative data contain detailed and reliable measures of employment and wages for several points in time. By using pooled data from half a decade of graduates, I can control for economic cycles and thus increase the external validity of the results.

Variables

The main dependent variable is the logarithm of the inflation-adjusted monthly gross salary of full-time (= at least 35 h per week) wage earners.[5] Analysing salaries rather than occupational prestige or skills match has become more common for several reasons, e.g. because it is better suited to capturing the increasing income inequality within occupations (Sakamoto and Wang 2020). The main analysis is conducted for income five years after graduation, which is the longest from graduation available in the data, as graduates are expected to be fully established in the labour market by then. To see if results differ closer to the graduation date, the analysis is repeated for 1.5 years after graduation as a robustness check in the appendix.

Parental education is the only information on social origin in the data. In Austria, students must declare this information when enrolling at public research universities and universities of applied sciences in Austria. The consideration of multiple indicators, such as parental occupational status, wealth, and income, or micro-class approaches (Laurison and Friedman 2016, 676) provides a more comprehensive picture of social mobility. However, Erola, Jalonen, and Lehti (2016) showed that parental education explains more of children's status attainment than parental occupation

or income. I distinguish first-generation graduates from graduates with at least one parent with a tertiary education who could guide their offspring through and after higher education.

Because the labour market for higher education graduates differs strongly not only by broad fields of study (e.g. humanities), but also by subfields (literature, philosophy, etc.; Næss and Wiers-Jenssen 2023), I included the most detailed ISCED fields available. Hence, the same ISCED fields are coded differently by the higher education sector because the content of curricula, teaching styles, and academic cultures differ significantly. For example, at research universities, *health* is mainly human medicine and dentistry, whereas at universities of applied sciences, the focus is on nursing. This approach results in 51 different fields of study (see Table A1).[6]

I include several control variables at the individual level: year of graduation, gender, age at graduation, nationality (Austria, Germany, other EU-country, other), maternity,[7] degree level (ISCED level 6 or 7), additional degrees at the same level, and study duration. The descriptive statistics of the individual-level control variables can be found in the appendix (Table A3).

To explain the differences between fields of study, three variables at the contextual level are calculated. First, following Hansen (2001) and others, fields of study are divided into 'hard' fields with clear assessment criteria (biology, science, ICT, engineering, manufacturing, architecture and construction, agriculture, and health) and 'soft' fields with less clear assessment criteria (all other fields; see Table A4). Second, the proportion of first-generation graduates in each field of study is calculated from the dataset, with the lowest values in medicine and music, and performing arts at research universities (51%) and the highest values in the field of education at research universities (85%; see Table A4). Third, to test the bureaucracy hypothesis, the proportion of graduates working in public administration or education, or in a private institution with more than 250 employees is calculated. The percentage of graduates working in these institutions varies from over 90% (security services at universities of applied sciences and teacher training at research universities) to 21% (architecture and town planning at research universities; see Table A4).

Analytic strategy

To analyse how the field of study characteristics influence the effect of parental education on income, I first conducted separate OLS models for each field of study in order to gain an understanding of the diversity of the effect. Then, I ran multilevel models on log-wages with individuals nested in fields of study. Multilevel analysis correctly estimates the standard errors of the regression coefficients of clustered data (Snijders and Bosker 2011) and allows us to understand whether relationships between lower-level variables […] change as a function of higher-order moderator variables (Heisig and Schaeffer 2019). As I expect different income levels and effects of parental education by field of study and because including a random slope is recommended when estimating cross-level interaction (Heisig and Schaeffer 2019), I estimate a random-intercept-random-slope-model with first-generation status as the main independent variable of interest (1). To control for selection into fields of study, the individual-level control variables enumerated in the variables section are added (2).

$$Salaries_{ij} = \beta_0 + \beta_1\ FirstGen_{ij} + b_{0j} + b_{1j}\ FirstGen_{ij} + \varepsilon_{ij} \quad (1)$$

$$Salaries_{ij} = \beta_0 + \beta_1\ FirstGen_{ij} + \ldots + \ b_{0j} + b_{1j}\ FirstGen_{ij} + \varepsilon_{ij} \quad (2)$$

The model incorporates individuals i nested in fields of study j, the fixed effects β, the random intercept b_{0j}, the random slope b_{1j} for each study field and the normal distributed error term ε_{ij}. ' … ' represents the supplementary individual-level control variables incorporated into the model.

To further analyse whether the three contextual variables explain differences between fields of study in the effect of parental education on salaries, I separately include cross-level-interaction terms of parental education and the contextual variables: 'hard' vs. 'soft' discipline (3), the proportion of first-generation graduates (4), and the proportion of graduates working in more bureaucratic environments (5). These three models with cross-level interactions test whether the 'level-2 variable explains a significant amount of the level-1 slope variation among groups' (Bliese 2016, 60):

$$\begin{aligned} Salaries_{ij} = {} & \beta_0 + \beta_1\ FirstGen_{ij} + \ldots + \ \beta_{n-1}\ HardSuject_j \\ & + \ \beta_n\ FirstGen_{ij}HardSubject_j \ + \ b_{0j} + b_{1j}FirstGen_{ij} + \varepsilon_{ij} \end{aligned} \quad (3)$$

$$\begin{aligned} Salaries_{ij} = {} & \beta_0 + \beta_1\ FirstGen_{ij} + \ldots + \ \beta_{n-1}\ Prop.\ FirstGen_j \\ & + \beta_n\ FirstGen_{ij}Prop.\ FirstGen_j \ + \ b_{0j} + b_{1j}FirstGen_{ij} + \varepsilon_{ij} \end{aligned} \quad (4)$$

$$\begin{aligned} Salaries_{ij} = {} & \beta_0 + \beta_1\ FirstGen_{ij} + \ldots + \ \beta_{n-1}\ Prop.\ Bureau_j \\ & + \beta_n\ FirstGen_{ij}Prop.\ Bureau_j + \ b_{0j} + b_{1j}FirstGen_{ij} + \ \varepsilon_{ij} \end{aligned} \quad (5)$$

I examine whether the cross-level interaction fixed effect β_n is significant. For a qualitative classification of the results, I investigate how much of the slope variance, which can be interpreted as different effects of parental education by study field, is explained by the addition of the cross-level-interaction terms.

Empirical findings

Table A4 shows the differences in median earnings of graduates with and without at least one parent with tertiary education. In contrast to other countries, the average earnings of first-generation graduates are higher in many fields of study, especially in manufacturing and processing (+18%), the applied arts (+13%) and sociology and cultural studies at public research universities (+6%), and electricity and mechanics (+7%) and security services (+6%) at applied universities. On the other hand, first-generation graduates earn less in business (−7%), sports (−7%), and earth sciences (−6%), at public research universities.

The results of separate OLS regressions for each field of study indicate that the observed differences can be explained by individual-level control variables in some fields of study (applied arts, security services; see coefficients of first-generation status in Table A4). However, in most fields, the differences in parental education persisted or were only slightly reduced (manufacturing and processing, sociology and cultural studies, electricity and mechanics, business, and earth sciences).

The scatter plots of these field-specific first-generation status effects on wages by characteristics of fields of study (Figure A1 in the appendix) demonstrate that there is no effect of 'soft' and 'hard' fields of study. However, there is a moderate positive effect of the proportion of first-generation graduates and the proportion of graduates working in bureaucratic institutions on the first-generation effect on wages. The LOESS line indicates that the relationships between the continuous study field characteristics and the first-generation effect on wages are approximately linear. Consequently, these relationships are modelled as linear in the following multilevel models.

The results of the multilevel models on wages are presented in Table 1. At the bottom of Table 1, the slope variances of the different random intercept-random slope models with field of study as a level 2 variable are compared to the base model (1) in which parental education is the only independent variable. Adding the individual level control variables (2) reduces the slope variance of the base model by 21%. Thus, about one fifth of the

Table 1. Fixed effects and summary statistics of multilevel models on log-salaries of full-time employed graduates 5 years after graduation (level 2: field of study).

	(1) Base Model	(2) Individual Level Control Variables	(3a) Discipline Culture	(3b) Proportion FGG	(3c) Bureauctratic
Intercept	8,15***	7,87***	7,96***	7,81***	7,82***
Parental Education: First-Generation Graduate	0,01	0	−0,1**	0	−0,03*
Female		−0,1***	−0,1***	−0,1***	−0,1***
Maternity		−0,17***	−0,17***	−0,17***	−0,17***
Age		0,01***	0,01***	0,01***	0,01***
Nationality (Ref: Austrian)					
Germany		−0,01	−0,01	−0,01	−0,01
Other EU-country		−0,03***	−0,03***	−0,03***	−0,03***
Other		−0,07***	−0,07***	−0,07***	−0,07***
ISCED level 7 (=Master)		0,1***	0,1***	0,1***	0,1***
More than one degree		0,05***	0,05***	0,05***	0,05***
Long study duration		−0,04***	−0,04***	−0,04***	−0,04***
Bureaucratic Institution		0,05***	0,05***	0,05***	0,05***
Year of Graduation (Ref: 2008/09)					
2009/10		0,01***	0,01***	0,01***	0,01***
2010/11		0,01**	0,01**	0,01**	0,01**
2011/12		0,01***	0,01***	0,01***	0,01***
2012/13		0,01*	0,01*	0,01*	0,01*
2013/14		0,03***	0,03***	0,03***	0,03***
2014/15		−0,02***	−0,02***	−0,02***	−0,02***
'Hard' Discipline			0,11**		
'Hard' Discipline * First-Generation			0,01		
Proportion First-Generation				−0,13	
Proportion First-Generation*First-Generation				0,15**	
Proportion Bureaucratic Institution					0,09
Proportion Bureaucratic Institution*First-Generation					0,06*
N	71983	71983	71983	71983	71983
AIC	21226	15038	15043	15038	15042
Within-group-variance	0,00071	0,00057	0,00057	0,0004	0,00053
Within-group variance from base model (1)explained		19%	19%	43%	32%
Within-group variance of individual level control variables-model (2) explained			0%	29%	15%

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Data: ATRACK (STATISTICS AUSTRIA).

field of study differences in the parental education effect are explained by the different individual characteristics, i.e. by selection effects into the different fields of study.

Adding the interaction term of 'hard' vs. 'soft' fields and parental education (3) does not explain more variance; the coefficient of the interaction term is 0.00 and not significant. Thus, the effect of parental education on graduates' wages does not differ between 'soft' and 'hard' fields of study, and hypothesis 1 must be rejected. However, the interaction between the proportion of first-generation graduates and parental education (4) explains 29% of the remaining slope variance of model (2), the coefficient is significant.

Hypothesis 2, that first-generation graduates have advantages in fields with a high proportion of first-generation graduates and disadvantages where their proportion is low, can be confirmed. The interaction effect of the proportion of graduates working in more bureaucratic environments and parental education (5) is significant at the 0.05-level and explains 15% of the slope variance of model (2). However, given the substantial number of observations in the model, significance at a 0.05-level should not be over-interpreted. Furthermore, the Akaike Information Criterion (AIC) of model (5) is higher than that of model (2), indicating that the model is worse and probably overfitted. In summary, the results for hypothesis 3 of a smaller effect of parental education in fields of study with a higher proportion of graduates working in more bureaucratic institutions are inconclusive.

To gain a deeper understanding of the cross-level interaction effects, the moderating effects of the field of study characteristics are illustrated in Figure 1. On the left, it can be observed that graduates from 'soft' fields of study earn approximately €300 less per month than those who graduate from a 'hard' field. There is a small positive effect of first-generation status on wages in both 'hard' and 'soft' fields of study, but there is no moderating effect of hard/soft field of study. In the middle of the figure, it can be observed that graduates with one or two tertiary educated parents earn €54 less in fields of study with a high proportion of first-generation graduates than in fields of study with a low proportion of first-generation graduates. Conversely, first-generation

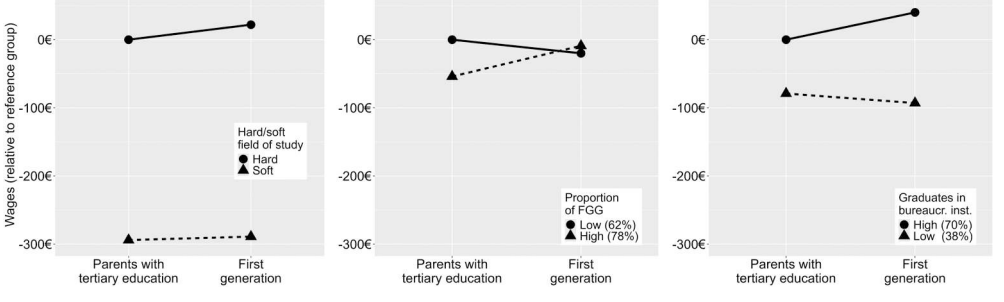

Figure 1. Interaction effects of characteristics of field of study and the parental education on wages. Notes. Naive prediction of the wages in € (difference of exponent of predicted log-wages) by first-generation status and study field characteristics relative to reference groups as follows: academic education of one or both parents and (1) 'hard' field of study; (2) low proportion of first-generation graduates; (3) high proportion of graduates working in bureaucratic environments. High and low proportions are calculated as the mean +/ – the standard deviation of the field of study characteristic (as proposed by Aguinis, Gottfredson, and Culpepper 2013). Data: ATRACK (STATISTICS-AUSTRIA).

graduates earn slightly more in fields of study with a high proportion of first-generation graduates. This suggests that the influence of parental education on wages may be moderated by the characteristics of the study field. The figure on the right illustrates that wages are higher in fields of study with a high proportion of graduates employed by bureaucratic institutions. Graduates with at least one parent with tertiary education earn €79 more in fields of study with a high proportion of graduates working in bureaucratic institutions, while first-generation graduates earn €133 more.

As a robustness check, the calculations were repeated for salaries 1.5 years after graduation. Jacob and Klein (2019) and Kratz, Pettinger, and Grätz (2022) showed that working-class graduates catch up with their peers after labour market entry. Thus, effects of study-field characteristics may differ by career progression of graduates. However, the main results are similar to those 5 years after graduation, again confirming hypothesis 2 and rejecting hypothesis 1 (see Table A5). Contrary to the findings 5 years after graduation, the cross-level interaction effect of the proportion of graduates employed in bureaucratic institutions and being a first-generation graduate is not significant 1.5 years after graduation.

Discussion

The aim of this study is to investigate why the effects of parental education on the salaries of higher education graduates vary by field of study. It contributes to the extant literature by deriving three hypotheses from the literature and testing them with Austrian administrative data. In line with findings from other countries (Hansen 2001; Hällsten 2013; Mastekaasa 2011; Crawford et al. 2016; Manzoni and Streib 2018), the advantage for graduates with one or both parents with a tertiary education is stronger in business, law, and medicine at public research universities.

However, contrary to previous findings first-generation graduates are not only shown to have smaller disadvantages in Austria compared to other countries; in some fields of study, they earn higher average salaries than their counterparts with tertiary educated parents (e.g. in electricity and mechanics, or business at applied universities, and applied arts at public research universities). On average, no wage disadvantage for first-generation graduates was found among full-time employed graduates in Austria. This result is somewhat unexpected, given that numerous researchers have identified effects of social origin on earnings (e.g. Bernardi and Ballarino 2016; Witteveen & Attewell 2020; Hällsten 2013). However, this is consistent with a recent study from Germany, which found that parental education did not explain wage differences between university graduates (Spexard et al. 2022).

The relatively modest impact of parental education on earnings for university graduates does not negate the continued relevance of social reproduction in Austria. As has been demonstrated on numerous occasions, parental education exerts a major influence on the accessibility of higher education (Unger et al. 2020). In fact, the small parental education effect on wages may be attributed to the highly selective Austrian education system, which only permits the most motivated and talented offspring of non-tertiary educated parents to complete higher education. More research is needed on why the effects of social origin on graduates' earnings vary across countries. In order to facilitate social mobility, it is more crucial to concentrate on the accessibility of higher education.

The primary objective should be to enhance the educational prospects of children from disadvantaged backgrounds.

Using multilevel models, I systematically tested three hypotheses for the study-field-differences and found evidence for one of them. In fields where their proportion is lower, first-generation graduates' have lower wages on average, while in fields where their proportion is higher, they actually outperform their peers with academic parents. The fact that the differences between fields of study are partly the result of the proportion of first-generation graduates in each field suggests that who defines the culture of each field is important in terms of fitting in.

From a broader theoretical perspective, these results may suggest that parental education effects on labour market inequalities result from discrimination and favouritism in hiring and promotion processes. For the enhancement of social equality in higher education, it may be helpful to have students from different social backgrounds not only in institutions at all levels of prestige, but also in different fields of study. It is, therefore, important to focus on the choices that individuals make about what to study. It may be difficult to change the current patterns because students may choose the degree, they benefit the most from (Brand and Xie 2010). Study choice drives social inequality not only because the offspring of higher social backgrounds are more likely to choose higher income courses (Triventi, Vergolini, and Zanini 2017), but also, as this paper shows, inequalities within disciplines. The significant effect of the proportion of first-generation graduates is particularly interesting because, in Austria, graduates with parents without a tertiary education outnumber graduates with at least one academic parent in all fields of study due to the low rate of tertiary educated in the parental generation. Thus, in some fields of study where first-generation graduates are in the majority, their 'non-academic culture' appears to be an advantage, while in other fields of study where there is a more balanced proportion of graduates with and without parents with a tertiary education, and thus, a more 'academic culture', they have disadvantages in terms of wages.

The hypothesis that the differences in outcome by field of study result from the hard/paradigmatic vs. soft/non-paradigmatic classification (as most researchers had suspected) could not be confirmed. The effect of the proportion of graduates working in more bureaucratic labour markets is rather small and not robust. Further research is needed to investigate this context effect. Thus, the greater scope for discrimination and favouritism, the main arguments behind both hypotheses, seem to be less important for the emergence of the graduate pay gap. Thus, the results suggest that formalising recruitment procedures may not help to reduce inequalities due to parental education for higher education graduates. This is at least in countries with a formalised labour market such as Austria. However, such effects may play out in countries where collective bargaining is less important.

The paper has several limitations. I was only able to analyse the income of full-time employees, which could lead to limited generalisability of the results (see data section). Nevertheless, the results of the first two hypotheses appear to be robust. I cannot exclude the possibility that other field of study characteristics are the reason for the effects found. The proportion of first-generation graduates in Austria correlates with the type of institution where they have studied. Their proportion is, on average, higher in universities of applied sciences. Therefore, characteristics of the institutions other

than the proportion of first-generation graduates could be important in explaining the differences by field of study. It would also be possible to derive hypotheses based on other categorisations of academic disciplines (e.g. those of Becher and Trowler 2001). With enhanced access to data linking education and occupation, it would be intriguing to examine the question that a more pronounced positive effect of higher parental education on wages is observed in fields of study that are not directly linked to specific occupations (DiPrete et al. 2017). This paper is only a first step in systematically answering the question of why the effect of parental education on wages differs by field of study.

Although there are many advantages to using administrative data, there are also limitations. Regarding the restriction to full-time employees, it can be noted that the main results are similar for a measure 1.5 years after graduation and five years after graduation, although the characteristics of those working full-time, part-time, self-employed, or abroad differ considerably. The results, therefore, appear to be robust. It cannot be ruled out that the emergence of social inequality later in the career follows different rules.

The use of administrative data does not capture the full complexity of graduate employability, including aspects of human capital, social capital, individual attributes, individual behaviours, perceived employability, and labour market factors (Clarke 2018). The confounding variables in the model, such as gender, and age explain around 20% of study differences in parental education. Direct measures of skills, cognitive ability, health, and personality could potentially further explain wage differences (e.g. Hällsten 2013; Jacob, Klein, and Iannelli 2015; Gugushvili, Bukodi, and Goldthorpe 2017; Ford 2018). School grades are not considered for access to higher education in Austria and therefore are supposed to have little significance for the allocation to different fields of study. However, by using administrative data I do not have to deal with non-response bias. This is an important advantage in times of declining survey response rates which usually do not exceed 70%, leaving researchers with high risks of uncontrollable non-response errors.

This paper contributes to the literature by analysing how field of study characteristics affect income differences by parental educational status in Austria. However, further research is needed to investigate whether these results are applicable to other countries where the advantages of having academic parents are more pronounced, where the proportion of first-generation graduates is smaller, where the higher education system is more hierarchical, and where the labour market is more externally organised and less based on credentials than in Austria. It would also be interesting to see whether the proportion of first-generation graduates could not only be a reason for study-field differences in one country, but also the differences between different countries and education systems.

Notes

1. A related hypothesis can be derived from the concept of linkage strength (DiPrete et al. 2017). The strength of the linkage between education and occupation differs across fields of study. For instance, the linkage could be stronger in medicine (whose graduates often work as doctors) than in sociology (whose graduates work in a wide variety of occupations). Given the greater scope for discrimination and favouritism, one might expect a stronger positive effect of higher parental education for fields of study that are only loosely linked to specific occupations. Klein (2010) and Capsada-Munsech (2015) distinguish

occupationally specific fields from fields of education with less clear labour market application. However, it was not possible to test such a hypothesis in this paper without appropriate data linking occupations to detailed fields of study.

2. 4% of all bachelor's degrees and 2% of all master's degrees in 2018/19 were obtained at private universities, which are not as important for elite education as in other countries. Some of these universities concentrate on international students, while some private art universities are mainly funded by federal states.
3. These two sectors sum up for around 89% of all bachelor's and 98% of all master's degrees (and equivalents) in Austrian higher education institutions in 2018/19. I do not have access to data of the graduates of private universities. Furthermore, no information of parental education of the graduates of teacher training colleges is available. Around 3% of the graduates cannot be tracked because they are not insured or do not live in Austria at the time of graduation.
4. I did not run additional models on labour market status because the desirability of these other labour market statuses is unclear. We neither know whether self-employment (around 7% of the employed graduates) means being the owner of a lucrative business or being in precarious self-employment moving from job to job, nor if part-time work (around 28% of the employed graduates) is voluntarily or not.
5. The terms wages and salaries are used interchangeable in this paper to represent the income that is subject to social insurance contributions from the main occupation (including bonuses, without tips). Few (around 600) unreasonably low values (<800€) and some outliers (40 values >20.000€) were not considered for further analysis.
6. The data was only accessible on the condition that no individual institution could be identified. If only one institution offered programmes in a detailed field of study, the programmes had to be combined from different detailed fields to broader categories. This was the case for many fields of study at universities of applied sciences.
7. Maternity is measured as having been out on (obligatory) maternity leave before the reference date. I have no information on fatherhood. However, unlike for women, having children has no negative effect on labour market outcomes for Austrian men (Bock-Schappelwein et al. 2020, p. 63).

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Appendix A

Table A1. Categorisation of ISCED-Fields (ISCED-F2013).

Public Research Universities	Universities of Applied Sciences
Education science (111)	
Teacher training with subject specialisation (114)	
Applied arts (210, 211, 212, 214, 288) (210)	Arts and humanities (200-288)
Fine arts (213)	
Music and performing arts (215)	
History and religion (221, 222)	

(*Continued*)

Table A1. Continued.

Public Research Universities	Universities of Applied Sciences
Philosophy and ethics (223)	
Language acquisition (231)	
Literature and linguistics (232)	
Economics (311)	Journalism and social sciences (300-388)
Political science (312, 388)	
Psychology (313)	
Sociology and cultural studies (314)	
Journalism and information (320-329)	
Business and administration (410-419)	Business and administration (410-419)
Law (421)	
Business interdisciplinary (488)	Business interdisciplinary (488, 1015)
Biology (511)	Natural sciences (500-588)
Biochemistry (512)	
Environment (520-522)	
Chemistry (531)	
Earth scienes (532)	
Physics (533)	
Mathematics and statistics (540-542) (540)	
Natural sciences interdisciplinary (588)	
Information and communication technologies (600-688)	Information and communication technologies (600-688)
Chemical engineering and processing (711, 712)	Chemical engineering and processes (711,712)
Electricity and Electronics (713, 714)	Electricity, electronics and mechanics (713 - 716)
Mechanics and metal trades (715)	
Manufacturing and processing (720-729) (720)	Manufacturing and engineering interdisciplinary (720-729, 788)
Architecture and town planning (731)	Architecture and construction (731, 732)
Building and civil engineering (732)	
Architecture and construction interdisciplinary (788)	
Agriculture and Forestry (800-888)	
Medicine and dental studies (911, 912, 913, 914, 915, 917)	Health and sports (910-914, 917, 988, 1014)
Pharmacy (916)	Therapy and rehabiliation (915)
Sports and other services (1014-1088)	Social work and counselling (923)
	Security services (1031, 1032)

Universities of applied sciences do not offer programmes of all detailed fields of study. In instances where a field of study is only offered by one higher education institution, it has been necessary to combine fields of study to comply with data protection regulations.

Table A2. Description of graduates not considered for the analysis.

	N	Percentage of First-Generation Graduates
Total: all ISCED level 6 and ISCED level 7 degrees in 2008/09–2014/15	285707	71%
Not last highest most recent qualification (mainly bachelor graduates who also obtained a master's degree)	84542	74%
Still studying	25083	70%
Age at graduation over 35	22331	86%
PhD-student working in Education (mainly at universities)	7580	65%
PhD-student without employment (mainly scholarships)	1740	62%
Total: sample including those not working full-time	155031	70%
Part-time employment	33478	72%
Self-employment	8398	67%
Not employed (unemployement and other)	10831	68%
No social security in Austria (mainly living abroad)	24777	55%
Total for the analysis	77547	75%

Graduates may be excluded for more than one reason (e.g. still studying and age > 35).
Data: ATRACK (STATISTICS AUSTRIA).

Table A3. Description of the sample.

		Percentage in the Sample	Proportion of First-Generation Graduates
Parental Education	Parents with Academic Education	25%	0%
	First-Generation	75%	100%
Sex	Male	51%	74%
	Female	49%	75%
Maternity	Not a Mother	97%	75%
	Mother	3%	73%
Age at Graduation	22y. and less	7%	76%
	23y.–25y.	38%	73%
	26y.–29y.	40%	74%
	30y.–34y.	15%	80%
Nationality	Austria	92%	76%
	Germany	2%	49%
	Other EU-country	3%	58%
	Other	2%	48%
ISCED level	ISCED level 6 (Bachelor)	23%	79%
	ISCED level 7 (Master, Diploma)	77%	73%
Number of degrees	One degree (at the highest level)	96%	75%
	More than one degree	4%	70%
Study Duration	Graduation in standard study duration +1y.	49%	78%
	Exceeding standard study duration +1y.	51%	70%
Working in Bureaucratic Institutions	Not working in bureaucratic institution	44%	74%
	Working in bureaucratic institution	56%	75%
Year of Graduation	2008/09	13%	74%
	2009/10	13%	76%
	2010/11	14%	75%
	2011/12	14%	74%
	2012/13	15%	74%
	2013/14	15%	74%
	2014/15	15%	74%

N = 77,547.
Data: ATRACK (STATISTICS AUSTRIA).

Table A4. Field of Study-Characteristics and random slope of individual level-control model (2) by Field of Study.

	Number of full-time employed graduates	'Soft' (0) vs, 'hard' (1) field of study	% of first-generation graduates	% of graduates working in bureaucratic institutions	Descriptive median income advantage of FGG (%)	Regression coefficient of FGG status
Education science (public univ.)	1298	0	85%	68%	2%	0,02
Teacher training (public univ.)	4975	0	74%	92%	2%	0,03
Applied arts (public univ.)	202	0	56%	36%	13%	0,00
Fine arts (public univ.)	384	0	60%	41%	1%	−0,01
Music and performing arts (public univ.)	915	0	51%	43%	5%	0,01
History and religion (public univ.)	644	0	68%	57%	−1%	−0,03

(*Continued*)

Table A4. Continued.

	Number of full-time employed graduates	'Soft' (0) vs, 'hard' (1) field of study	% of first-generation graduates	% of graduates working in bureaucratic institutions	Descriptive median income advantage of FGG (%)	Regression coefficient of FGG status
Philosophy and ethics (public univ.)	135	0	68%	56%	−3%	0,01
Language acquisistion (public univ.)	1798	0	66%	49%	−1%	−0,01
Literature and linguistics (public univ.)	625	0	67%	46%	−1%	0,00
Economics (public univ.)	2411	0	80%	55%	0%	0,02
Political Science (public univ.)	2469	0	59%	47%	−3%	−0,03
Psychology (public univ.)	1336	0	67%	61%	−2%	0,00
Sociology and cultural studies (public univ.)	1133	0	71%	55%	6%	0,07
Journalism and information (public univ.)	1706	0	69%	38%	0%	−0,01
Business and administration (public univ.)	1101	0	67%	50%	−7%	−0,05
Law (public univ.)	6084	0	62%	48%	−2%	−0,01
Business interdisciplinary (public univ.)	5662	0	69%	48%	−4%	−0,03
Biology (public univ.)	993	1	69%	55%	−1%	0,02
Biochemistry (public univ.)	518	1	73%	50%	−4%	−0,01
Environment (public univ.)	342	1	62%	46%	1%	0,01
Chemistry (public univ.)	255	1	67%	73%	−1%	0,01
Earth scienes (public univ.)	600	1	75%	44%	−6%	−0,04
Physics (public univ.)	656	1	62%	62%	1%	0,01
Mathematics and statistics (public univ.)	595	1	60%	63%	−1%	−0,02
Natural sciences interdisciplinary (public univ.)	505	1	67%	56%	0%	0,00
Information and Communication Technologies (public univ.)	2806	1	70%	44%	3%	0,02
Chemical engineering and processing (public univ.)	887	1	63%	59%	0%	−0,01
Electricity and Electronics (public univ.)	827	1	70%	70%	2%	0,02

(*Continued*)

Table A4. Continued.

	Number of full-time employed graduates	'Soft' (0) vs, 'hard' (1) field of study	% of first-generation graduates	% of graduates working in bureaucratic institutions	Descriptive median income advantage of FGG (%)	Regression coefficient of FGG status
Mechanics and metal trades (public univ.)	1432	1	70%	65%	2%	0,01
Manufacturing and processing (public univ.)	294	1	68%	53%	18%	0,09
Architecture and town planning (public univ.)	1591	1	63%	21%	0%	−0,01
Building and civil engineering (public univ.)	928	1	71%	37%	3%	0,01
Architecture and construction interdisciplinary (public univ.)	589	1	67%	58%	4%	0,01
Agriculture and Forestry (public univ.)	538	1	64%	40%	4%	−0,01
Medicine and dental studies (public univ.)	4525	1	51%	96%	−1%	0,01
Pharmacy (public univ.)	463	1	65%	19%	−3%	−0,01
Sports and other services (public univ.)	467	1	78%	43%	−7%	−0,07
Arts and Humanities (FH)	896	0	70%	25%	2%	−0,01
Journalism and Social Sciences (FH)	378	0	72%	48%	2%	−0,02
Business and administration (FH)	7661	0	78%	48%	3%	0,03
Business interdisciplinary (FH)	3141	0	79%	47%	5%	0,03
Natural sciences (FH)	450	1	79%	51%	−3%	0,00
Information and Communication Technologies (FH)	2557	1	80%	45%	1%	0,01
Chemical engineering and processes (FH)	413	1	74%	55%	4%	0,02
Electricity, Electronics, and mechanics (FH)	2345	1	82%	60%	7%	0,06
Architecture and construction (FH)	759	1	84%	38%	4%	0,04
Manufacturing and engineering interdisciplinary (FH)	2282	1	82%	56%	1%	−0,01
Health and sports (FH)	1587	1	81%	79%	4%	0,04

(*Continued*)

Table A4. Continued.

	Number of full-time employed graduates	'Soft' (0) vs, 'hard' (1) field of study	% of first-generation graduates	% of graduates working in bureaucratic institutions	Descriptive median income advantage of FGG (%)	Regression coefficient of FGG status
Therapy and rehabiliation (FH)	911	1	77%	74%	4%	0,04
Social work and counselling (FH)	1009	0	81%	71%	2%	0,01
Security services (FH)	469	0	82%	96%	6%	0,02

Regression coefficients of first-generation status on wages five years after graduation of separate OLS-models for each field of study controlled for sex, maternity, age, nationality, ISCED level, number of degrees, study duration, working in bureaucratic institutions, and year of graduation.
Data: ATRACK (STATISTICS AUSTRIA).

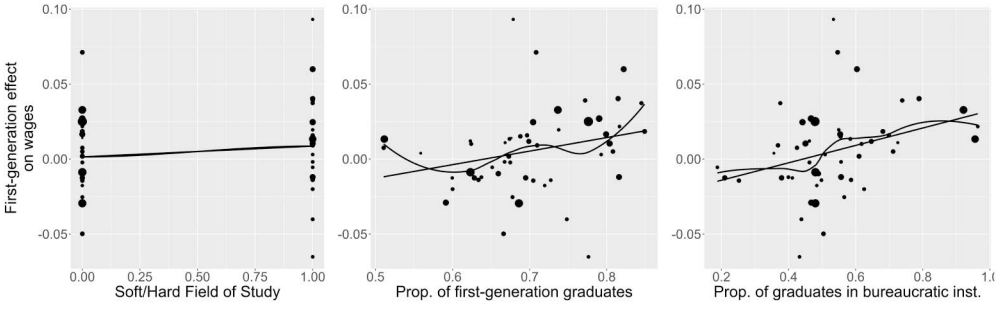

Figure A1. First-generation status effects on wages by characteristics of field of study. Scatter plots with estimated OLS-regression and LOESS-lines. The size of the points represents the number of full-time employed graduates. y-axis: Regression coefficients of first-generation status on wages five years after graduation of separate OLS-models for each field of study controlled for sex, maternity, age, nationality, ISCED level, number of degrees, study duration, working in bureaucratic institutions, and year of graduation. Data: ATRACK (STATISTICS AUSTRIA).

Table A5. Fixed Effects of multilevel model on log-salaries 1.5 years after graduation (level 2: field of study).

	(1) Base Model	(2) Individual Level Control Variables	(3a) Discipline Culture	(3b) Proportion FGG	(3c) Bureauctratic
Intercept	7,97***	7,49***	7,43***	7,45***	7,39***
Parental Education: First-Generation Graduate	0,01**	0,01*	0	−0,11***	0
Female		−0,07***	−0,07***	−0,07***	−0,07***
Maternity		−0,09***	−0,09***	−0,09***	−0,09***
Age		0,02***	0,02***	0,02***	0,02***
Nationality (Ref: Austrian)					
Germany		−0,01	−0,01	−0,01	−0,01
Other EU-country		−0,03***	−0,03***	−0,03***	−0,03***
Other		−0,05***	−0,05***	−0,05***	−0,05***
ISCED level 7 (=Master)		0,07***	0,07***	0,07***	0,07***
More than one degree		0,04***	0,04***	0,04***	0,04***
Long study duration		−0,04***	−0,05***	−0,04***	−0,04***
Bureaucratic Institution		0,08***	0,08***	0,08***	0,08***

(*Continued*)

Table A5. Continued.

	(1) Base Model	(2) Individual Level Control Variables	(3a) Discipline Culture	(3b) Proportion FGG	(3c) Bureauctratic
Year of Graduation (Ref: 2008/09)					
2009/10		−0,01	−0,01	−0,01	−0,01
2010/11		−0,01**	−0,01**	−0,01**	−0,01**
2011/12		0	0	0	0
2012/13		−0,01	−0,01	−0,01*	−0,01
2013/14		0	0	0	0
2014/15		0	0	0	0
'Hard' Discipline			0,12***		
'Hard' Discipline * First-Generation			0,02		
Proportion First-Generation				0,06	
Proportion First-Generation*First-Generation				0,17***	
Proportion Bureaucratic Institution					0,21*
Proportion Bureaucratic Institution*First-Generation					0,02
N	68836	68836	68836	68836	68836
AIC	12029	5253	5254	5250	5260

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Data: ATRACK (STATISTICS AUSTRIA).