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How to explain the Leaky Pipeline?

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Abstract

In most European universities, today the overall share of female bachelor's degrees is more than 50 percent but drops at the level of full professors to about 25 percent. This phenomenon is called Leaky Pipeline. Most explanations refer to gender norms, motherhood, implicit or explicit sexism, and "tokenism". We take a novel approach, comparing the Leaky Pipeline across various study fields in the two biggest Swiss Universities. We start with the popular Token hypothesis of Rosabeth Moss Kanter, that women suffer from their minority position. According to this hypothesis, it is expected that the higher the women´s share in a study field the less pronounced the Leaky Pipeline. In contrast, the Self-Selection hypothesis and the Status Group hypothesis lead to different expectations: The higher the women´s share in a study field the more pronounced the Leaky Pipeline. Our data clearly reject the Token hypothesis. To test the second and the third hypotheses, we conduct a representative survey at the two Swiss Universities. We find strong evidence for Self-Selection effects, but no discrimination according to a Status Group effect. We show that men and women in different fields of study have different career motivations, family aspirations, and resources, which shape their career and family dynamics and thus the observed Leaky Pipeline differently across disciplines. These dynamics are reinforced by partner choice as women in female-dominated fields tend to match with men in male-dominated fields, and vice versa. Our findings may explain why many of the current measures to mitigate the Leaky Pipeline – in particular quota - are not effective.

Keywords: Leaky Pipeline, gender equality, career, quotas, equal-but-different, gender equality paradox.

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How to Explain the Leaky Pipeline?

1 Introduction

The term Leaky Pipeline characterizes the continuous decline in the women share when climbing up the career ladder (Lundberg 2018). The phenomenon exists in the private and public sectors. In our paper, we consider the Leaky Pipeline at universities. A recent study of more than 1000 universities in 80 (mostly European) countries shows that such a Leaky Pipeline can be found in all countries. On average, the share of female bachelor students is 54 percent. Among PhD students, there are 52 percent of women. However, the women share drops at the level of professors as low as 29 percent (Federkeil and Friedhoff 2022).

There exists extensive literature about potential reasons for the Leaky Pipeline. The most often mentioned reasons are, e.g., motherhood, gender stereotypes, and implicit or explicit sexism. *Motherhood* may lead to an early withdrawal of women from academia. Women typically take over more childcare and homework than men (Holmes and O'Connell 2007; Anders 2004). At the same time, higher-level positions need longer working hours (Haffner, Könekamp, and Krais 2007). As a result, many women find it difficult to reconcile family and an academic career (Ferriman, Lubinski, and Benbow 2009; Martinez et al. 2007; Anders 2004).

Gender stereotypes associate communal behavior to be "typically feminine"(Heilman 2012), whereas brilliance, genius, and assertiveness are more associated with men (Napp and Breda 2022; Thébaud and Charles 2018). As a result, leadership positions and scholarly excellence are considered more “male” than “female” (Eagly and Karau 2002). According to these gender stereotypes, many women prioritize their husband's careers. Even within “dual-career-couples” women reduce their working hours in favor of their husbands as soon as childcare becomes relevant (Funken 2011). They switch from a "dual-career-couple" to a "single-career-model" (Bathmann, Müller, and Cornelißen 2011). If it is difficult to find a job in academia for both spouses (Mavriplis et al. 2010), women often leave academia. These stereotypes are extremely persistent (Alesina, Giuliano, and Nunn 2013; Eagly et al. 2020; Tinsley, Howell, and Amanatullah 2015; Bertrand 2020; Ebner, Kühhirt, and Lersch 2020; Zoch 2021). If they are internalized as norms, their violation causes identity costs (Akerlof and Kranton 2000, 2005; Mullainathan 2018; Bertrand, Kamenica, and Pan 2015). Therefore, many women conform to gender norms resulting in an early withdrawal from academia.

Implicit or explicit sexism consists, e.g., in the so-called Matilda effect: female professors are more likely judged by their appearance, whereas male professors are usually evaluated by the content of their work (Wu 2020). Recently, in economics, a „Me-too firestorm“ (Lindisfare and Neale 2022; Weichselbaumer 2022) was launched.

Other reasons for the Leaky Pipeline mentioned in the literature are academic networks (Friebel, Fuchs-Schündeln, and Weinberger 2021; Schoen, Rost, and Seidl 2018), mobility requirements (Albanese, Nieto Castro, and Tatsiramos 2022), more burden with non-promotable tasks for female than male scholars (Babcock et al. 2017) and temporary employment relationships in academia (Bataille, Le Feuvre, and Kradolfer Morales 2017). Of great importance is the gender gap in publications and funding which until today is explained inconsistently (Ceci et al. 2014; Hilber, Sturm, and Ursprung 2021; Huang et al. 2020; Bol, de Vaan, and van de Rijt 2022; Joecks, Pull, and Backes-Gellner 2014; Lutter and Schröder 2020). Most of the mentioned reasons are to a high degree interrelated.

In our paper, we take a new path to find an explanation for the Leaky Pipeline. We try to make use of the differences between the Leaky Pipelines in different fields– e.g., in MINT-related study fields such as informatics, engineering, or physics compared to social sciences or humanities We ask which factors may explain the differences.[1]

We start with a hypothesis developed outside of academia explaining why minorities – particularly women – may suffer from their minority position. Rosabeth Moss Kanter in her book *Men and Women of the Corporation* (Kanter 1977) states with her influential “Token-hypothesis” [2]: being a token or a symbol of the entire group often leads to discrimination, being constantly watched, and being less involved in networks. To increase the career prospects of minorities – particularly of women – it is necessary to escape from the minority position, e.g., by quotas.

Outside of academia, there is plenty of empirical evidence in favor of the Token-hypothesis (Elstad and Ladegard 2012; Spangler, Gordon, and Pipkin 1978). Applying the Token-hypothesis to universities means that the Leaky Pipeline is less pronounced, the bigger the women share at the beginning of an academic degree. For instance, in psychology or veterinary

[1] This does not mean that the other reasons mentioned – like motherhood, sexism or gender stereotypes - do not play a role. The influence they exert may differ in different study fields.

[2] Based on the “contact theory” of Allport, Clark, and Pettigrew (1954).

medicine, we expect a low developed Leaky Pipeline. In study fields like computer science or electrical engineering, there is a low women´s share with a bachelor's degree. According to the Token-hypothesis, we expect a pronounced Leaky Pipeline in these study fields.

In contrast to the Token-hypothesis the Self-Selection hypothesis leads to a quite different expectation: Many women are attracted by study fields that fit into a stereotyped female role model which results in a more developed Leaky Pipeline. These women have different preferences than women in male-dominated study fields. According to this hypothesis, women with a female role model place greater value on the freedom to choose between a career and a traditional female role. They want to be equal concerning formal rights, but different concerning their professional aspirations, their desire for children and their workload after having children. This new gender role model "equal but different" is most prevalent among affluent and well-educated couples.[3] Research from the US and UK shows that especially well-educated mothers spend more time on childcare since the 2000s (Borra and Sevilla 2019; Ramey and Ramey 2009). A new "cult of motherhood" is arising due to the growing salience of traditional gender norms among wealthy families (Eagly et al. 2020; Falk and Hermle 2018; Hizli, Mösching, and Osterloh 2022) as well as due to the increasing economic inequality and competition for top educational institutions (Doepke and Zilibotti 2017). A new form of division of labour has become widespread (Goldin 2021): men take over "greedy jobs" with fifty to seventy hours of work per week and high earnings, and women work in family- and child-friendly jobs, preferably part-time with correspondingly low earnings and limited career opportunities. Women with such a role model choose study fields close to typical female fields of interest, often humanities and social sciences (Combet 2023). These fields are characterized by a lower decay of knowledge compared to technical and scientific fields. They allow women to re-enter the workforce more easily after maternity leave (Ferriman, Lubinski, and Benbow 2009; McDowell 1982).

In addition, according to numerous empirical findings, high-performing women tend to have a higher aversion to tournaments than men (Niederle and Vesterlund 2007; Gërxhani, Brandts, and Schram 2021; Berger, Osterloh, and Rost 2020). In tournaments, only one person ever wins and everyone else loses. This contradicts traditional female role stereotypes, which we expect

[3] This role model is different from the so-called Complementarian movement "equal but differerent" which intends of conveying equal value in both sexes while upholding a hierarchy between men and women, see https://www.ashleyeaster.com/blog/equal-but-different-hoax

to be more salient among women in female-dominated study fields. The wealthier women are, the higher their aversion to tournaments (Markowsky and Beblo 2022).

Self-selection could also be based on better resources of women in male- compared to female-dominated fields of study. This also has been demonstrated for men in male-atypical occupations. (Schwiter et al. 2014). These resources may include cognitive resources as well as cultural resources. They also may consist of high "self-efficacy". A person with high self-efficacy believes that threats must not be avoided but are challenges that can be mastered. Such persons are able to recover fast from failure and attribute failure not to bad luck but to a lack of effort (Bandura 1978; Watkins, Simmons, and Umphress 2019). In this light - and contrary to the Token-effect – a minority status need not be detrimental (Watkins, Simmons, and Umphress 2019; White 2008): the minority of women in male-dominated study fields know at the beginning of their studies that they have to struggle hard (Ihsen, Höhle, and Baldin 2013; Stemmer 2020). As a result, the Leaky Pipeline is less developed in subjects with low women´s share.

A third hypothesis suggests the existence of a highly developed Leaky Pipeline in female-dominated fields due to the so-called Status Group effect. According to this effect, members of the higher status (in our case men) benefit from being a minority, but members of the lower status (in our case women) cannot. This implies a significant barrier to women's advancement (Williams 1992). The nursing profession is a classic example of this phenomenon. The few men in the field enjoy structural advantages that facilitate their career and hinders the career of women. What are these structural advantages? Research informed by the status characteristics theory (Correll and Ridgeway 2006) suggests that in situations in which the environment, as well as individual’s abilities, are unknown, gender plays a significant role in determining status. In these situations, men are often attributed and attribute themselves a higher status compared to women. As a result, men in female-dominated fields can benefit from their minority position as they are attributed a higher status in society (Jackson, Thoits, and Taylor 1995; Wingfield 2009; Williams 1992; Watkins, Simmons, and Umphress 2019). Moreover, men are often perceived and perceive themselves as brilliant and assertive compared to women (Meyer, Cimpian, and Leslie 2015; Musto 2019). These stereotypical attributions discriminate against women and facilitate men's pursuit of careers in female-dominated fields to the detriment of women. Therefore, the Status Group effect suggests an exacerbation of the Leaky Pipeline in female-dominated fields.

We test the three hypotheses by analyzing data from the University of Zurich (UZH) and the Swiss Federal Institute of Technology in Zürich (ETHZ). These are the two biggest Universities in Switzerland, comprising 31 percent of all students at Swiss universities (Bundesamt für Statistik 2021).

Our paper is organized as follows. Section 2 presents our analysis of the Leaky Pipeline at two Swiss Universities. We clearly reject the Token-hypothesis with our data. In section 3, we test the Self-selection hypothesis and the Status Group hypothesis through a representative survey run at these two universities. We demonstrate that the Leaky Pipeline is mainly shaped by different career motivations, family aspirations, and resources across disciplines, reinforced by assortative matching of partners. In section 4 we discuss our findings using a typology that illustrates the complementarity of gender norms in female- and male-dominated fields of study. In section 5 we draw policy implications. We debate why quotas and many other current measures to mitigate the Leaky Pipeline may be detrimental and which alternative measures might be taken into consideration.

2 The Leaky Pipeline at two Swiss Universities: Token effect?

In the first step we test the token-hypothesis by analyzing cross-sectional data from the University of Zurich (UZH) and the Swiss Federal Institute of Technology in Zurich (ETHZ) over several years. According to this hypothesis, we expect a *negative*, linear relationship between the share of female bachelor graduates and a highly developed Leaky Pipeline.

We investigate the different Leaky Pipelines for different study fields. Our data comprises more than 750 observations for 67 grouped study fields (41 at UZH and 26 at ETHZ). The UZH data covers the years 2013-2020; the ETHZ data the years 2006-2020. We find huge differences between the study fields. The share of female bachelor graduates ranges from 87.5 percent in sociology, 82 percent in veterinary medicine, and 32.5 percent in economics to 12 percent in electrical engineering and 7 percent in computer science.

To quantify the extent of the Leaky Pipeline, we introduce a new measure, the so-called Leak. It is calculated as the difference between the women´s share in full professorships (FP) minus the share of female bachelor graduates (BA). To simplify the interpretation, we multiply this difference by -1. Thus, the Leak is the loss of women's share in percentage points. The bigger the Leak, the more pronounced the Leaky Pipeline.

(1) $$\text{Leak} = (\text{Share}_{\text{f FP}} - \text{Share}_{\text{f BA}}) \text{ x } (-1)$$

(2) $$\text{Leak} = \left(\frac{\text{Absolute Number Women FP}}{\text{Absolute Number Women FP+ Absolute Number Men FP}} - \frac{\text{Absolute Number Women BA}}{\text{Absolute Number Women BA + Absolute Number Men BA}}\right) \text{ x } (-1)$$

According to the Token hypothesis, we expect a *negative*, linear relationship between the share of female bachelor graduates and the Leak. However, the result of our empirical analysis is a clear rejection of the Token-hypothesis[4]. There is a strong *positive*, linear relationship between the share of female bachelor graduates and the Leak. The higher the share of female bachelor graduates, the larger the Leak and therefore the more pronounced the Leaky Pipeline. For example, the Leak in veterinary medicine (high women share with bachelor's degrees) is very strong. In this study field, women account for 82 percent of bachelor's degrees, but only 27 percent of full professorships. The Leak thus amounts to 55 percentage points (see figure 1a). The situation is similar in psychology: women account for 80 percent of bachelor's degrees and 40 percent of full professorships. This corresponds to a Leak of 40 percentage points.

In contrast, in electrical engineering, women account for 12 percent of bachelor's degrees and 11 percent of full professorships. The Leak is 1 percentage point (see figure 1b). Overall, in the UZH and ETHZ data sets across the years considered, the correlation between the women´s share with bachelor's degrees and the Leak is 0.82.

Figure 1a-b about here

We also calculated the percentage of under- and over-representation of women and men in full professorships across fields of study with high and low proportions of female bachelor's degrees.

(3) $$\text{Share Leak f} = (\text{Share}_{\text{f FP}} / \text{Share}_{\text{f BA}}) - 1$$

(4) $$\text{Share Leak m} = ((1 - \text{Share}_{\text{f FP}}) / (1 - \text{Share}_{\text{f BA}})) - 1$$

[4] Our result also contradicts the "minority trap" (Shan 2022) which suggests that in general male-dominated fields are losing the potentially talented women due to an unbalanced gender ratio.

Figure 2 illustrates the results for the UZH and ETHZ data sets across all years considered. The results confirm that the higher the share of female bachelor degrees the higher the underrepresentation of women in professorships (see Figure 2-A; the correlation between $\text{Share}_{\text{f BA}}$ and Share Leak f amounts -0.19), and the higher the overrepresentation of men in professorships (see Figure 2-B; the correlation between $\text{Share}_{\text{f BA}}$ and Share Leak m amounts 0.67).

Figure 2 about here

It is important to note that we cannot provide longitudinal cohort analysis, even though the Leaky Pipeline becomes relevant at increasingly later stages of the academic career. That is the career stage at which the proportion of men exceeds the proportion of women. From cross-sectional data, we know that the Leaky Pipeline opened about 20 years ago before bachelor's degrees, whereas today this is the case after doctoral degrees. This is consistent with the trend of later childbearing in highly developed countries (Ní Bhrolcháin and Beaujouan 2012). However, the proportion of female professors with tenure at both universities stagnated between 2013 and 2020.

To generalize our findings we differentiate between two types of careers. Type 1 comprises study fields with high women´s share in bachelor's degrees and a large loss in women's share after the doctorate (e.g., veterinary medicine, psychology, biology, human medicine). Type 2 comprises study fields with low women´s share in the bachelor's degrees and all other stages and a small loss in the women's share up to full professorships (e.g., computer science, physics, electrical and mechanical engineering).

We show that there is an asymmetry between the two types. The loss of women in a typical female study field (type 1) on the path to professorship is much higher than the loss of men in a typical male study field (type 2). We statistically validated this result using the UZH and ETHZ data sets, respectively. We use fixed-effects models and predict the women's share in the next career stage depending on the women's share in the former career stage by controlling for year dummies in all models. Figures 3a and 3b illustrate the results for the UZH by using extreme cases. On the one hand, we used the estimates to predict the Leaky Pipeline for a study field with 90 percent of women among bachelor graduates (e.g., educational science at UZH)

and on the other hand, a study field with 90 percent of men among bachelor graduates (e.g., computer science at ETHZ).

Figure 3a-b about here

Figure 3a shows a typical women's major with 90 percent of women with bachelor's degrees. In such a program, women are three times less likely to be full professors compared to their career chances as measured by their share of bachelor's degrees (decrease from 90 percent to 23 percent). In contrast, the chances of a professorship in such study fields increase sevenfold (!) for the 10 percent of men, also measured by their promotable share in bachelor's degrees (increase from 10 percent to 77 percent).

Figure 3b shows a typical male study field with 90 percent of men with bachelor's degrees. In such a discipline, the chance for men to become full professors decreases by 1.2 times, as measured by their share of bachelor's degrees (decrease from 90 percent to 73 percent). For the 10 percent of women in this discipline, the chance of professorship increases by three times, measured by their promotable share in bachelor's degrees (an increase from 10 percent to 27 percent). This means a higher chance of an academic career for the few women in these study fields, yet it is much smaller than for men in typically female study fields.

Interestingly, the largest loss in the women's share in female-dominated study fields occurs during the transition between doctoral degrees and assistant professorships. In contrast, the women's share in male-dominated study fields remains relatively constant across all career stages. Therefore, the usual explanation that academic careers mostly are interrupted with the birth of the first child – today often the age at which the doctorate is completed – does not apply to all study fields. In study fields with low women´s shares at the bachelor's level, there is no significant reduction in women´s shares in the post-doc phase – unlike in study fields with high women's shares at the beginning of an academic degree.

3 Self-Selection effects or Status Group effects?

In our second step, we ask which hypothesis might explain the strong correlation between the women`s share in bachelor's degrees and the Leaky Pipeline. As mentioned, there are two contradicting suggestions, Self-selection and the Status Group effect.

3.1 Method and sample

To answer this question, we conducted an online survey, which took about 15 minutes, among all enrolled bachelor students, master students, PhD students, postdocs, research associates and assistant professors at the University of Zurich (UZH) and the Swiss Federal Institute of Technology in Zurich (ETHZ) during November 2022. We offered financial incentives as part of a lottery to increase participation. The individual rewards made up 50-800 Swiss Francs, in sum 10'000 Swiss Francs. The final sample includes 9,686 persons, leading to a satisfactory response rate of 18.9 percent.

We tested whether our sample reflects the baseline population in a representative way. Table 1a reports the frequencies and response rates according to gender, career stage and university affiliation, comparing them with the baseline population. Males are slightly underrepresented (-6.3 percent) and females are slightly overrepresented (+6.3 percent). These gender differences in response rates may be considered negligible when considering that our study is centred on women´s behaviour. Furthermore, bachelor students (+4.5 percent) are slightly overrepresented, and master students (-1.4 percent) and PhD students (-2.8 percent) are slightly underrepresented. Reasons may consist in increasing time constraints when stepping up the career ladder. We find little difference in the response rate between UZH (+1.3 percent) and ETH (-1.3 percent). Table 1b compares the frequencies and response rates of our respondents with the percentages of enrolled students. For eight out of ten study fields our sample conforms precisely with the population. Only in the fields of architecture and construction science (+7 percent) and natural sciences and mathematics (-9 percent) there are small differences.

Table 1a-b about here

Figure 4a illustrates the gender segregation of bachelor students in the study fields offered by the Swiss Federal Institute of Technology ETHZ for the years 2006-2021. The figure shows a

high overlap between the base population and the study sample. Further, it illustrates that ETHZ is a typically male-dominated environment: 70 percent of all male bachelor's students, but only 28 percent of all female bachelor students study a field with a women's share of less than 30 percent. In contrast, 2 percent of male bachelor's students and 11 percent of all female bachelor students study a field with a women's share of more than 70 percent. Thus, men concentrate to a high degree in male-dominated study fields while women are more open to different fields of study.[5]

Figure 4b illustrates the gender segregation of bachelor students in the study fields offered by the University of Zurich UZH for the years 2013-2020. Again, there is a good overlap between the base population and the study sample, though to a lower degree than in the case of ETHZ. The University of Zurich UZH offers a wide range of social sciences, humanities, and natural sciences. In contrast to ETHZ, female-dominated fields of study play a big role. 44 percent of female bachelor students and 17 percent of male bachelor students study a field with a women's share of more than 70 percent. In contrast, only 2 percent of female bachelor students and 12 percent of male bachelor students study a field with a women's share of less than 30 percent.

If we take both universities together, in the year 2021 50,3 percent of women were studying in a female-dominated study field and 60,9 percent of men studying in a male-dominated study field. 14,9 percent of women studied in a male-dominated field and 7,6 percent of men in a female dominated field.

Figure 4a/b about here

Overall, the results show that our sample is representative and suitable to study the reasons behind the different Leaky Pipelines in different study fields.

[5] This finding fits into studies which find that, on average, men today adhere to gender norms more strongly than women (Palffy, Lehnert, and Backes-Gellner 2022).

3.2 Measurements

This section lists our survey measurements briefly. For a more comprehensive description, see the appendix.

We examine women's representation in the chosen study field, obtained from the respondent's bachelor's degree program. We match this information with the women's share in the bachelor programs offered by UZH and ETHZ, using university statistics from 2021. Gender is measured by asking respondents to indicate their sex as male or female.[6] Respondents were asked to rate their reason for choosing their bachelor's degree program, assessing interest in the subject, earning potential, and career and promotion opportunities. We measure male and female gender norms, that is, how strongly people identify themselves with stereotypes, using a short version of the Bem Sex-Role Inventory (BSRI) (Bem 1974; Troche and Rammsayer 2011). It asks respondents to rate the social desirability of 15 male and 15 female characteristics on a five-point Likert scale. The commitment to the equality model is assessed using 10 items measured on a five-point Likert scale, measuring the extent to which respondents disagree with traditional gender roles concerning family duties. We also assess gender norms passed from parents to their children, including the career orientation of the respondent's father and mother, whether the father or mother reduced working hours due to children, and the number and gender of siblings. For respondents with children, we measure single parenthood, number of children, age of parenthood, plans for more children, respondents, and partner's degree of part-time work. For respondents without children, we ask about the strength of their desire for children, the plan for the number and timing of children, and the desire to pursue a career while having children. Respondents living in a partnership are asked about their partner's career options, income, and wealth, as well as whether they met their partner within or outside of their field of study. We also asked for the desired age gap between partners and the partner's job mobility. For singles, we asked about the desirability of a partner with higher career opportunities, income, and wealth, as well as the desired age gap and partner's job mobility. Cognitive resources are measured by asking about grades in different school subjects, including STEM and ART. Self-efficacy is measured using the Jerusalem and Schwarzer (2003) instrument. Our survey uses several measurements to determine an index for upper-class upbringing. We also measure the highest education levels of parents and an index for parents' income and wealth. We assess the Status Group effect through perceived track records during the study period. We also asked

[6] 63 individuals were excluded because they did not identify themselves as female or male.

explicitly whether respondents feel advantaged or disadvantaged because of their gender. In all regression models, control variables include university affiliation, own income/wealth, presence of children, living in partnership, and student/employment group. Age and semester were excluded due to their high correlation with student/employment group.

3.3 Method

We tested all listed variables in multivariate models. In these models, women´s share in a study field is our main variable of interest. It has been included either as a dependent or as an independent variable, according to whether the factor under consideration comes into effect before or after the choice of a study field.[7] We run linear or logistic regression models depending on how the dependent variable was measured, dichotomously or (quasi-)metrically, and include interaction effects with a person's gender to test for the predicted gender-specific effects. Missing values were deleted listwise per regression model; the number of cases thus varies between the models.[8] In addition, certain regressions can only be run for subgroups, for example for persons with or without children. All regression models including confidence intervals are documented in the tables in the appendix. The figures in the appendix illustrate the marginal plots for all statistically significant effects on a 5 percent significance interval. In what follows we will focus on *selected, significant* findings of the multivariate models. These findings will be illustrated in descriptive plots. They are based on the raw data without control variables and have the advantage that the effective size of the observed effects is transparently presented. In the plots, we consider a study field as female- (male-) dominated when 70 percent of bachelor graduates in this field consist of females (males). According to this narrowing of the data set 75 percent of all women in our study population (50 percent in women-dominated study fields and 15 percent in a male-dominated study fields) and 69 percent of all men in our study population (61 percent in male-dominated fields and 8 percent in women-dominated fields) are considered.

3.4 Results

3.4.1 Self-Selection effects: field of study and career aspirations

[7] In the models for partnership and children, the proportion of women in the field of study is included as an independent variable, although this also acts as a dependent variable. However, for people in a partnership it makes sense to assume that the selection of a field of study also subsequently influences the choice of partner and childbearing.

[8] An alternative would be to work only with cases for which complete answers are available. However, due to the high number of explanatory variables, too many cases would be lost for the analysis, increasing the probability of selective, unrepresentative results.

Women and men with career aspirations opt for more male-dominated fields (see appendix Table A1a, Column 1, Figure A1-A). However, for women career considerations have a considerably smaller impact on their self-selection into male- or female-dominated fields. This outcome is confirmed when students are asked about their career and leadership aspirations *after* their study choice. Both men and women in male-dominated fields have higher career aspirations than men and women in female-dominated fields. Nevertheless, women in male-dominated fields have slightly lower career ambitions than men in these fields (see appendix Table A1b, Column 4, Figure A1-B). Figure 5 illustrates the former multivariate finding descriptively: While 35 percent of men in male-dominated fields aspire to a management position including leadership responsibility, for women in female-dominated fields this is the case only for 23 percent. In contrast, 28 percent of the women in male-dominated fields and 25 percent of the men in female-dominated fields aspire for such a leadership position.

Women who express a high level of interest in their chosen subject are more likely to choose a typical women's study field. For men, interest in a particular subject has no effect on whether they prefer a typical male or female study field (see Appendix Table A1a, Column 3, Figures A1-C).

Figure 5 about here

3.4.2 Self-Selection effects: gender norms

3.4.2.1 Gender norms and Equality model

We find support for self-selection into fields of study based on gender norms. The *identification with male* and *female stereotypes* confirms the assumption that people self-select into typically male and female study fields based on gender norms (see Appendix Table A2, Column 1 and 2). Women who strongly identify with the female stereotype tend to choose study fields with high women´s shares (see appendix Figure A2-A), while males who strongly identify with the male stereotype tend to choose study fields with low women´s shares (see appendix Figure A2-B). Figure 6-A illustrates that the percentages of males and females choosing male-dominated and female-dominated study fields go along with a strong internalization of male and female stereotypes. First, the figures indicate that respondents internalized the male stereotype more strongly than the female one and that women internalized both gender stereotypes more than

men. Second, 25 percent of the women in female-dominated study fields have internalized strong female stereotypes, but only 22 percent of the women in male-dominated study fields. 33 percent of the men in male-dominated study fields stick to strong male stereotypes, but only 28 percent of men in female-dominated study fields. Third, the weakest internalization of the female stereotype is observed for men in male-dominated study fields. These differences at first glance are small but taken together with the following findings they gain importance.

The variable *support for gender equality* shows a different picture. This variable captures the extent to which respondents disagree with the traditional division of family roles between men and women: Men and women advocating for the traditional male breadwinner model tend to self-select in study fields with lower women´s shares (see Table 3, Column 3). Figure 6-B combines the preferences for gender equality in family roles with the internalization of gender stereotypes. People with weaker gender stereotypes tend to advocate for equality in family roles – except women in women's fields of study. The more these women have internalized female gender stereotypes, the stronger they advocate for equal family duties. This counterintuitive finding fits nicely with the subsequent findings on women's preferences for reduced workload for themselves and their partners when having children (see 3.4.2.4).

Figure 6 about here

3.4.2.2 Gender norms transmitted through socialization

Females with a mother who reduced their working time because of children are more likely to choose study fields with high women´s shares (see appendix Table A3, Column 6; see Figure A3-A). Figure 7-A illustrates that only 26 percent of the women from female-dominated study fields had a mother who worked (almost) full-time while the children were small. In contrast, 31 percent of the men from female-dominated study fields and even 35 percent respectively 34 percent of the men and women from male-dominated study fields had a working mum.[9]

[9] Further, women grown up with siblings are more likely to choose a typical male study field (see appendix Table A3, Column 7; see Figure A3-B). This might be explained by parents who are more sensitive to individual differences if they have more children. The results also reveal other sibling effects in line with the literature, which can be found in the tables and figures in the appendix.

Men from affluent homes tend to self-select into male-dominated study fields (see appendix Table A3, Column 12, Figures A3-C). According to Figure 7-B 37 percent of the men in male-dominated study fields are born in affluent homes compared to 23 percent of the (relatively few) men in female-dominated study fields. This finding confirms the so-called resource hypothesis which suggests that in general wealth promotes traditional gender roles (Breda et al. 2020; Stoet and Geary 2018; Hizli, Mösching, and Osterloh 2022; Falk and Hermle 2018). The (relatively few) women that study male-dominated subjects also are born to a higher percentage (33 percent) in affluent homes compared to those in female-dominated subjects (25 percent). We interpret this finding as follows: Women self-selecting into men´s subject are able to deviate from a traditional gender role because of their better economic resources which help to overcompensate identity costs (Akerlof and Kranton 2000).

Figure 7 about here

3.4.2.3 Gender norms and the choice of partners

51.7 percent of respondents live in a steady partnership. Women from women's studies programs are nearly five times more likely than men from men's studies programs to be in relationships with partners who have higher advancement and career opportunities (see Figure 7).[10] 48.3 percent of respondents currently do not live in a steady partnership. Asked about their desired partners, the results resemble those in Figure 8. The preferred age gap between the partners slightly increases with women´s share in a study field. Men in male-dominated fields compared to men in female-dominated fields prefer females with lower promotion prospects than themselves. For women, we observe analogous but weaker effects (see appendix Table A4b, Columns 1-3; see Figures A4b-A-C).

Figure 8 about here

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[10] Men in women's studies programs tend to have younger partners than men in men's studies programs. Usually, these men have higher incomes and more assets than their female partners (see appendix Table 5a, Columns 1-3; see Figure A4a-A-C).

3.4.2.4 Gender norms and childbearing preferences

Only 4.6 percent or 386 respondents have children, which is far from representativeness.[11] For men, the desire to have children is stronger the lower the share of women in a study field. For women, the desire to have children slightly increases with the share of women in a study field (see appendix Table A5a, Column 1, Figure A5a-A).[12]

Of great importance are desires for reduced workload when having children (see appendix Table A5a, Column 4, Figure A5a-D). According to the multivariate findings, in female-dominated fields women aim to reduce their workload more than men (see appendix Table A5a, Column 6, Figure A5a-E). Figure 9-A shows the descriptive plots. Only 19 percent of the women in female-dominated study fields plan to work (almost) full-time when starting a family, but 26 percent of the men in female-dominated fields. Even 38 percent percent of the women in female-dominated fields plan to stay at home or to work less than 60 percent part-time; but only 26 percent of the men. These figures contrast with men and women in male-dominated study fields. 39 percent of the women and 44 percent plan to work (almost) full-time when starting a family. Only 19 percent of the women and 12 percent of the men wish to stay at home or to work less than 60 percent part-time.

Furthermore, considering the desire for the partner´s workload when having children, Figure 8-B illustrates that 27 percent of the men in male-dominated study fields but only 16 percent percent of the men in female-dominated study fields wish that their female partners continue to work (almost) fulltime when starting a family (see appendix Table A5a, Column 7, Figure A5a-F-G). Figure 9-B additionally shows that the male breadwinner model is still strongly

[11] Nevertheless, the findings are interesting because they tell us something about how childbearing preferences are translated into reality. Male partners of women in female-dominated fields have a significantly higher workload than female partners of men in these fields. In contrast, in male-dominated fields, there is no difference in partner workload between men and women (see appendix Table A5b, Column 6-8, Figures A5b-C-E). Men in female-dominated fields often are married to wives in these fields. As shown, these wives have a strong desire to have children and to reduce their workload significantly after having children. Women in female-dominated fields often are married to husbands in male-dominated fields who are less likely to reduce their workload after having children. Their wives are likely to have abandoned the career track, are working part-time, and thus are no longer in the sample.

[12] In addition, women in female-dominated fields tend to plan more children than those in male-dominated fields (see appendix Table A5a, Column 2, Figure A5a-B). Further, men in female-dominated fields plan to become fathers later than men in male-dominated fields. Considering the age at which women wish to have children there is no difference between the fields (see appendix Table A5a, Column 3, Figure A5a-C).

entrenched in people's minds: women are much more likely to want their partners to work full-time than men are. Furthermore, twice as many women from women's studies programs can envision the model of the “stay-at-home dad” as compared to women from men's studies programs. This modern interpretation of the roles of the sexes is contradictory since these women - as previously shown - usually do not aspire a career themselves.

Figure 9-C combines the former findings by showing to which degree the partner is expected to work more or less in partnerships when starting a family. Men with a conservative male bread-winner model self-select to a high degree in male-dominated fields. Women with such a male bread-winner model tend to self-select in female-dominated fields.

Figure 9 about here

Concerning childbearing preferences, the findings support that women in female-dominated study fields are likely to have different preferences and internalized gender norms than women in male-dominated study fields and that men in female-dominated study fields are likely to have different preferences than men in male-dominated study fields.

The place of meeting the partner also greatly differs between men and women depending on the women share in the study field. When the share of the opposite sex in the study field is low, respondents are unlikely to meet their partners in their study field (see Appendix Table A6, Column 1; see Figure A6). Figure 10 illustrates this finding. 33 percent of the women in male-dominated study fields met their partner within their study field but only 8.2 percent of the women in female-dominated fields. 83 percent of these women met their partners outside of the university. They also tend to match with older partners. It is therefore likely that a woman in a female-dominated field matches with an older man in a male-dominated field. According to what we know about the prevailing preferences of men and women in the different study fields concerning gender norms, childbearing preferences, and desired workloads these preferences fit together in a complementary way. But they also lead to negative bargaining power, low career chances and low income for these women when becoming mothers.

Figure 10 about here

3.4.3 Self-Selection effects: Resources

Concerning *cognitive resources*, 65 percent of the men have specialized during high school in STEM but only 29 percent in ART (the remaining specializations are not clearly assignable). In high school, women are distributed much more evenly across specializations: 40 percent of the women have specialized in STEM and 55 percent in ART (see Figure 11-A). The findings also show that men with a high relative advantage in STEM choose male-dominated fields more often than women with a relative advantage in STEM. Women and men with a relative advantage in languages do not differ in their choice of a female-dominated field (see appendix Table A7, Column 5, Figure A7-E).

Students in male-dominated fields of study have higher grades in high school than students in female-dominated fields (see Figure 11-B and see appendix Table A7, Column 3-4, Figure A7-C-D). Within female-dominated fields, there are small differences between men and women only. Women in male-dominated fields show the highest grades.

Concerning *self-efficacy* men with high self-efficacy often choose a female study field, while men with low self-efficacy often choose a male study field (see appendix Table A7, Column 6, Figure A7-F). This relationship cannot be observed with women.

Concerning *cultural capital* women and men with an upper-class upbringing are more likely to study male fields (see Figure 11-C and appendix Table A7, Column 7, Figure A7-G).

Men who choose a typical female study field are less influenced by peers than men who choose a typical male study field (see Figure 11-D and appendix Table A7, Column 8-10, Figure A7-H-J). This finding displays relatively higher levels of independence, which may positively impact their academic progress. Further, compared to other groups women choose a typical male study more often according to their parents. Serendipity also plays a role: women in male-dominated study fields report higher than average that they selected their field of study without much consideration.

Figure 11 about here

Overall, the results indicate that women from male study programs are endued with the highest resources. This may explain why they assert themselves during their academic career. In female-dominated study fields, both men and women are endued with lower resources, except for a high self-efficacy of men. Therefore, resource differences are not likely to explain the big Leak between men and women in female-dominated fields.

3.4.4 Status Group effect or Self-Selection effect?

According to our data there are big difference concerning the Leak between female- and male-dominated study fields. In study fields with more than 70 percent females, on average in 2020 the Leak is 45 percentage points, whereas in study fields with less than 30 percent females the Leak on average is only 7 percentage points. Also, in study fields with more than 70 percent females, the ratio of female professors to female bachelor students is 8, while the ratio of male professors to male bachelor students is 71.[13] Are these differences to be explained by Self-selection effects of women in female-dominated fields according to internalized gender norms or lower resources? Or are they to be explained by a Status Group effect which suggests that in female-dominated fields the minority of men has higher career chances than the majority of women due to discrimination against women?

In our data, we find strong support for Self-Selection effects according to an "equal but different" role model. Women in female-oriented study fields have internalized female gender norms, have low career aspirations and plan to a very high percentage to work part-time when having children. Figures 12-A show, that 80 percent of the respondents in female-dominated fields plan to work part-time and not to pursue a professional career when having children. Out of this 80 percent, there are 68 percent women versus 12 percent men. Only 20 percent plan to work full-time when having children, out of them 16 percent are women versus 4 percent men. However, as shown in Figures 12-B when it comes to confronting part-time work with equality models according to which respondents agree or disagree with the traditional division of family workload, no less than 53 percent of the 68 percent of women in female-dominated fields who do not want to work fulltime when having children strongly disagree with a traditional division of labor within the family. Working part-time while simultaneously sharing equally the workload within the family needs a partner who also works part-time to a similar degree. However, there is no complementarity of preferences between men and women. In our sample,

[13] These numbers should be interpreted with care because they are based on figures concerning the year 2020. Thus, they do not include longitudinal cohort effects.

75 percent percent of all women plan to work part-time when having children versus 62 percent percent of men. 30 percent of the women would even like to work less than 3 days a week or stay at home. For men, the share is only 14 percent. These women, therefore, want to be different from men but at the same time claim equality with family duties. We interpret our findings as follows: Women in female-dominated study fields self-select according to criteria based on the new role model "equal but different". This new gender role model comprises that traditional gender norms gain salience when having children, and that career aspirations are reduced. Nevertheless, equality is claimed.

Figures 12 about here

We find no support for a Status Group effect. Asked whether respondents have experienced positive track records in their academic careers there is no difference between men and women (see appendix Table A8, Column 2). This result fits with the finding that in female-dominated fields, there is only a small Leak between the bachelor's and the PhD degree, indicating that until the PhD level, the track records of women in female-dominated fields are comparable to those of men. We interpret this finding that there is no discrimination against women in female-dominated fields with respect to the approval of their academic performance. However, when asked explicitly for advantages or disadvantages because of their gender, women in female-dominated studies feel strongly disadvantaged, see Figure 11-C. We interpret this finding as follows: As women in female-dominated fields tend to advocate for an "equal but different" role model, victimhood is activated by an emphasis on gender issues (Campbell and Manning 2018). If somebody feels to be a victim, preferential treatment is claimed to be justified. This might explain the feelings of disadvantage by women in female-dominated study fields without being discriminated.

4 Discussion

How to explain the marked Leaky Pipeline in female-dominated fields of study? Our findings tell us that the main reasons are Self-Selection effects of women according to a new role model called "equal but different" which is prevalent in these study fields. This new role model suggests that women are *allowed* to achieve a career, but men *must* achieve a career.

Nevertheless, equal educational and career opportunities as well as equal family duties are claimed for men and women.

With men, there are also strong Self-Selection effects in male-dominated study fields according to internalized gender stereotypes. In contrast to women, we find some Self-Selection effects concerning resources: Men use their cognitive resources acquired during high school education more targeted than women when choosing a field of study. Interestingly, men who chose a female-dominated study field display a higher self-efficacy than men in a male-dominated study field.

Since a majority of women chose a female-dominated study field and a majority of men chose a male-dominated study field it might be interesting to summarize our empirical findings in a typology. This typology contrasts the main characteristics of females and males in study fields in which they find themselves in a majority or minority. We consider a study field as female- (male-) dominated when 70 percent of bachelor graduates in this field consist of females (males). The following percentages on the composition of the groups are based on the university statistics of the UZH/ETHZ from the year 2020.

Women in female-dominated study fields we characterize as *"equal but different"-minded.* They comprise 50,3 percent.These women have internalized a new role model that combines equal rights with traditional female stereotypes concerning childbearing and family duties. Nevertheless, they reject the traditional division of family roles. At the same time, they prefer part-time work or being a homemaker. Only a few of them show high professional career aspirations, but many of them have a high interest in their chosen subject. Their resources and perceived track records during their study time do not show a disadvantage. Also, until the doctorate there is no or only a small Leak. This indicates that they are not discriminated against by a Status Group effect. However, if gender is made salient, they feel strongly disadvantaged. We explain these findings by the new role model "equal but different". Proponents of this model claim equal career chances as well as equal family duties though they are not prepared to participate in the labour market in the same way as their partners.

These women often come from less affluent homes with no siblings, have mothers who were homemakers, prefer older male partners, and tend to plan more children than females from male-dominated study fields.

Men in male-dominated study fields we call *traditionalists.* They comprise 60,9 percent. On average, these men have strongly internalized male gender stereotypes and display strong ambitions for professional advancement. They reject the egalitarian division of family roles and prefer partners with low career prospects and a high willingness for reduced workload after family formation. However, they accept their partner to pursue a career and to work full-time, provided they don't have to cut back on their own careers.

These men often come from affluent homes and display high STEM grades. Compared to men in female-dominated study fields they are characterized by lower self-efficacy.

The career paths of women in female-dominated study fields and men in male-dominated study fields are reinforced by partner choice and assortative matching according to complementary role models. Because the opposite sex is underrepresented in their own field of study, women in female-dominated fields are likely to match with men in male-dominated fields and vice versa. Consequently, when raising a family, men take on high-earning, time-consuming jobs. Their wives opt for part-time work, flexible and family-friendly jobs with low career chances.

Women in male-dominated study fields we characterize as *equal and independent-minded.* They comprise 14,9 percent. These women on average have internalized female gender stereotypes to a lower degree and display a strong career motivation. They generally have lower childbearing desires than women in female-dominated fields and favour both partners to continue full-time work after starting a family. These women often have an upper-class background and display extraordinarily high STEM and language skills. In sum, they are well equipped to balance career and family.

Men in *female-dominated study fields* we call *anti-traditionalist*. They comprise only *7,6* percent. These men tend to reject the traditional male gender stereotypes and prefer more equality in family roles as well as part-time work. They often specialized in languages or art during high school and are characterized by an independent choice of their study field choice. Men in female-dominated study fields often grow up with older brothers, have younger female partners with equally high chances of advancement and plan late fatherhood. Their career aspirations are not very high, but higher than those of women in female-dominated study fields. Nevertheless, there is no Status Group effect: The few men in this study field do not claim or are associated with a higher status due to traditional gender stereotypes. But the combination of more efficient use of their cognitive resources, higher self-efficacy, higher independency, and higher career aspirations gives them an advantage over many women in this field of study.

Often those women stick to traditional role norms. In contrast, many men studying a female-dominated subject are prepared to take an unorthodox path and to overcome prejudices against this path. This might explain why on average these men are more successful than the women in this field.

Moreover, men's careers in female-dominated study fields are also shaped by their partner's choice. Women, who make up the majority in these subjects, are likely to choose partners within the field. This enhances men's careers in female-dominated fields. The desire to stay at home after family formation is more pronounced among women than men in female disciplines. Consequently, in such partnerships, men focus more on their careers than women.

To sum up, our research highlights that a majority of women, in particular women in female-dominated fields of study, still base their educational and career choices on their actual or potential partner's career paths. These women tend to have lower career aspirations, prefer a low professional workload work when starting a family, and plan to support their partner's career. An even greater majority of men, in particular those in a male-dominated study field, welcome these plans. They endorse strongly traditional male role models and accept their female partner to pursue a career as long as it does not conflict with their own career plans. It is important to note that men conforming to the male stereotype drive the results of our study more than women conforming to the female stereotype. In accordance with this finding, Block (2023) shows that the self-selection into male- and female-dominated fields is stronger for men; men tend to leave female-dominated fields to conform to the highly pronounced and internalized male stereotype.[14]

Past gender equality efforts mostly have neglected the complementary patterns of men in male-dominated fields and their female partners in female-dominated fields. Since most men as well as most women studying in fields dominated by their own gender these interactions must be addressed when considering measures to mitigate the Leaky Pipeline. Figure 13 provides an overview of the average characteristics of women and men in female- and male-dominated fields.

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[14] This fits into recent findings that among 19 to 29 aged young people there is a polarization between men and women concerning liberal women and right-wing oriented men (Meinungsforschungsinstitut Sotomo 2023; Survey Center on American Life 2022)

Figure 13 about here

Our results are consistent with those of Schröder (2020, 2023), who uses a variety of panel data across several affluent countries. He finds that most women, especially those with children, self-select into professions with low salaries, low career opportunities and high part-time work. Nevertheless, their life satisfaction on average is as high as those of men. However, Schröder (2020, 2023) does not differentiate between different fields of study or professions. He also does not consider the strong complementarity between men`s and women´s preferences and role models which reinforce each other.

The following *limitations* of our study should be considered. First, the external validity of our results is limited. In accordance with the "Gender Equality Paradox", our results may be valid for wealthy countries only. The "Gender Equality Paradox" implies that in wealthy countries there is a higher self-selection of male and female students into gender-typic study fields compared to poorer countries (Stoet and Geary 2020; Hizli, Mösching, and Osterloh 2022). Also, in richer countries male and female gender norms differ more than in poorer countries (Falk and Hermle 2018). Therefore, our results cannot be applied to countries with different economic conditions and gender norms.

Second, to explain the Leaky Pipeline we measure preferences and attitudes and not behavior. We do not know whether our respondents will decide in the future according to their intentions. However, it has been demonstrated, that preferences can explain decisions concerning career choices quite well (Hakim 2000).

Third, we cannot determine the direction of causality. Causality is necessarily uncertain in the context of gender stereotypes, norms, and life choices (Block 2023). Gender stereotypes, norms, and life choices are endogenous (Bertrand 2020).

Fourth, we are working with cross-sectional survey data. We do not know whether the respondents will decide in the future in the same way. Future research on the Leaky Pipeline should employ high-quality cohort panel data across various countries. Such data also allows to estimate causal effects more reliably.

Finally, surveys may be not the most suitable method to show Status Group effects. Usually, experiments are preferred in this field. However, we are confident that our results are robust and can be replicated in other studies.

5 Policy Implications

Our findings suggest that there are different Leaky Pipelines in different study fields which are to be explained mainly by self-selection. Men and women in different study fields are likely to have different preferences, career ambitions, abilities, and life choices. We do not find discrimination against women according to a Status Group effect. As a result, there is a highly pronounced Leaky Pipeline in female-dominated fields of study and a less developed or even no Leaky Pipeline in male-dominated fields of study.

These findings explain the limited success of current gender equality practices (Dobbin and Kalev 2022, 2016; Schoen and Rost 2021). Such practices, like quotas, family-friendly policies, or protected time (Williams, Kilanski, and Muller 2014; Kalev, Dobbin, and Kelly 2006) are based on the assumption that women's underrepresentation in upper academic positions would disappear if women are treated preferentially concerning career chances and family duties. According to our findings, this assumption is not well founded.[15]

In male-dominated study fields quotas or other preferential treatments for women are not necessary since the Leaky Pipeline there is existent to a very low degree. Such measures would make sense only if the track records of women in this study field would be much better than those of men, which according to our data is not the case (see Appendix, Table A8, Column 2).

In female-dominated study fields (explicit or implicit) quotas or other preferential treatments for women would be highly questionable. First, the prevalence of traditional gender norms and the new "equal but different" role model has to be taken into account. Women who choose their fields of study and their professional career paths according to their preferences for traditional role models and limited career aspirations are hardly incentivized properly by quotas and other preferential treatments. Second, in the literature on subjective well-being, it has been demonstrated that on average the life satisfaction of women is as high as those of men.

[15] This result is in accordance with studies demonstrating that subsidized childcare and job-protected parental leave do not increase female labor participation in many countries, due to the strong impact of traditional gender norms (Kleven et al. 2019).

(Schröder 2020, 2023). As a consequence, quotas and other preferential treatments would provide women neither with more life satisfaction nor would it result in high job performance. Rather, it would lead to reverse discrimination of ambitious and high-performing men (Solga, Rusconi, and Netz 2023). It has been shown that today men are less frequently invited to job interviews than women while having the same qualifications (Birkelund et al. 2022). Also, in German departments of sociology, during 1980-2013 women are about 1,4 more likely to get tenure than men; they got their first position as a tenured professor with 23 to 44 percent fewer publications than men (Lutter and Schröder 2016). Moreover, quotas would lead to statistical discrimination of ambitious and high-performing women who are pushed into the role of "quota women", though it has been demonstrated, that those women - including those having children - do publish no less than men (Lutter and Schröder 2020; Joecks, Pull, and Backes-Gellner 2014).

Does this mean that equal opportunity policy no longer is necessary or preferable? Sticking to the present Status quo would disregard that – though women and men on average report equal satisfaction levels (Schröder 2020, 2023)[16] – their objective situation can be improved by providing information how to do so.

Institutions could be adapted to preferences and characteristics of high-performing women. While we are skeptical concerning (explicit or implicit) quotas for women in general, which are output-oriented measures, process-oriented measures might be useful. An example is the tenure-clock stop policy. Such a policy would help mothers in female-dominated fields as well as in male-dominated fields. As women with children usually take over more childcare burden than men, female researchers with young children have lower research productivity (Kyvik and Teigen 1996). Stopping the "tenure clock" that for women coincides with the "biological clock" would help to manage better the dual burden of motherhood and academic career. Women with children must no longer be over-achievers compared to men and childless women. Another - rather unorthodox - suggestion is to lower the competition for post-doc jobs by introducing a qualified random selection for these positions.[17] As mentioned, on average high-performing women shy away from tournaments against men. In a lab experiment, Berger, Osterloh, and

[16] The results of Schröder (2020, 2023) concern Germany only, but might be generalizable (Hakim 2000).

[17] A qualified random selection is characterized by a two-step process: First, a pool of highly qualified candidates is selected in a conventional way. Second, a random selection decides who gets the job. This procedure was applied e.g., at the University of Basel during the 18th century. For an extensive discussion of qualified random selection see Frey, Osterloh, and Rost (2022).

Rost (2020) demonstrated that with a qualified random selection, the proportion of high-performing women competing for a leadership position doubled. In general, procedural measures to “fix the institutions” help to create institutional conditions that are not only tailored to the needs of men but also to the needs of high-performing women.

Changing preferences, gender norms and stereotypes is more difficult than changing institutions (Alesina, Giuliano, and Nunn 2013). Nevertheless, one could inform men and women e.g. about the disadvantages for women concerning their old age pensions when working part-time, or how identity costs (Akerlof and Kranton 2000, 2005) could be reduced when traditional gender norms would be treated in a deliberative way. For example, in schools and first-year university programs lectures or Massive Open Online Courses (MOOCs) could address students' role perceptions about careers and child raising. The results of these studies could be confronted with information about how alternative new role models work. Examples of such so-called behavioural interventions are: Full-time work and a career are feasible for couples with children, raising children in day-care-facilities does not harm children but promotes their social development. Sharing financial responsibility equally is relaxing for partnerships. Women not pursuing their own careers are highly dependent on their partners for their social and financial status when divorced. Many recent studies have shown that such behavioural interventions can be very successful in questioning traditional norms (Efferson et al. 2015; Vogt et al. 2016; Travers et al. 2021; Berger, Efferson, and Vogt 2021; Cinner 2018).

It is beyond the scope of this paper to determine the most promising avenues among “maintaining the status quo”, “fixing the institutions”, or “fixing the preferences of women and men”. Obviously, the paths outlined can be pursued in combination. In any case, democratic deliberation processes are needed. Further research exploring the feasibility as well as the advantages and disadvantages of each approach can help inform these debates.

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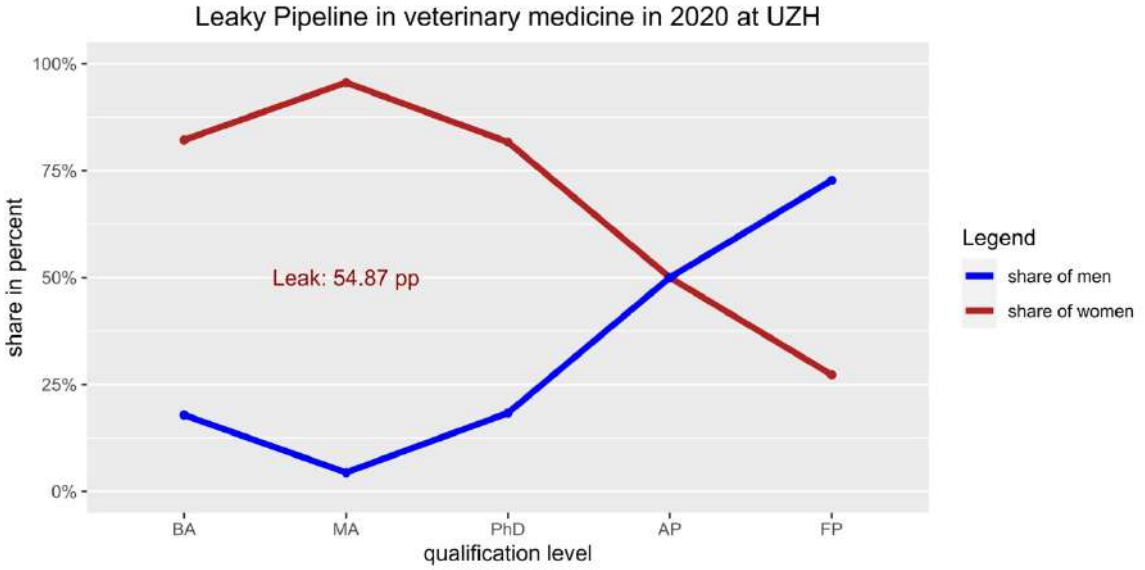
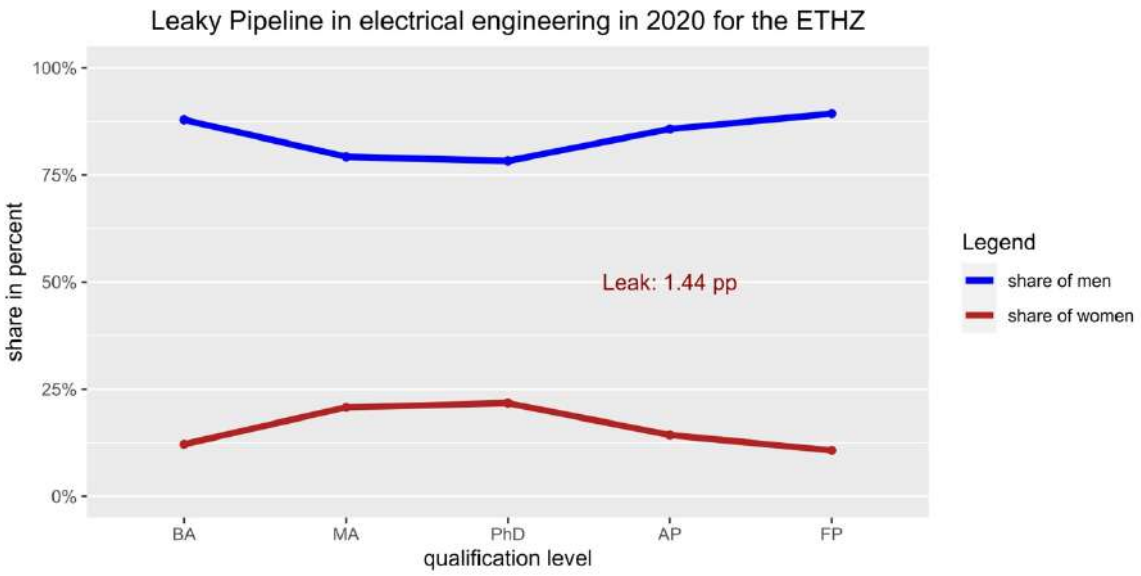
Figure 1a. Leaky pipeline in veterinary medicine at the University of Zurich in 2020.



Legend: Leak = loss of women across qualification levels in percentage points (pp).

Figure 1b. Leaky pipeline in electrical engineering at the Swiss Federal Institute of Technology in Zurich in 2020.



Legend: Leak = loss of women across qualification levels in percentage points (pp).

Figure 2. Percentage of the over- or underrepresentation of men and women in professorships dependent on the share of female bachelor students at UZH (2013-2021) and ETHZ (2006-2021)

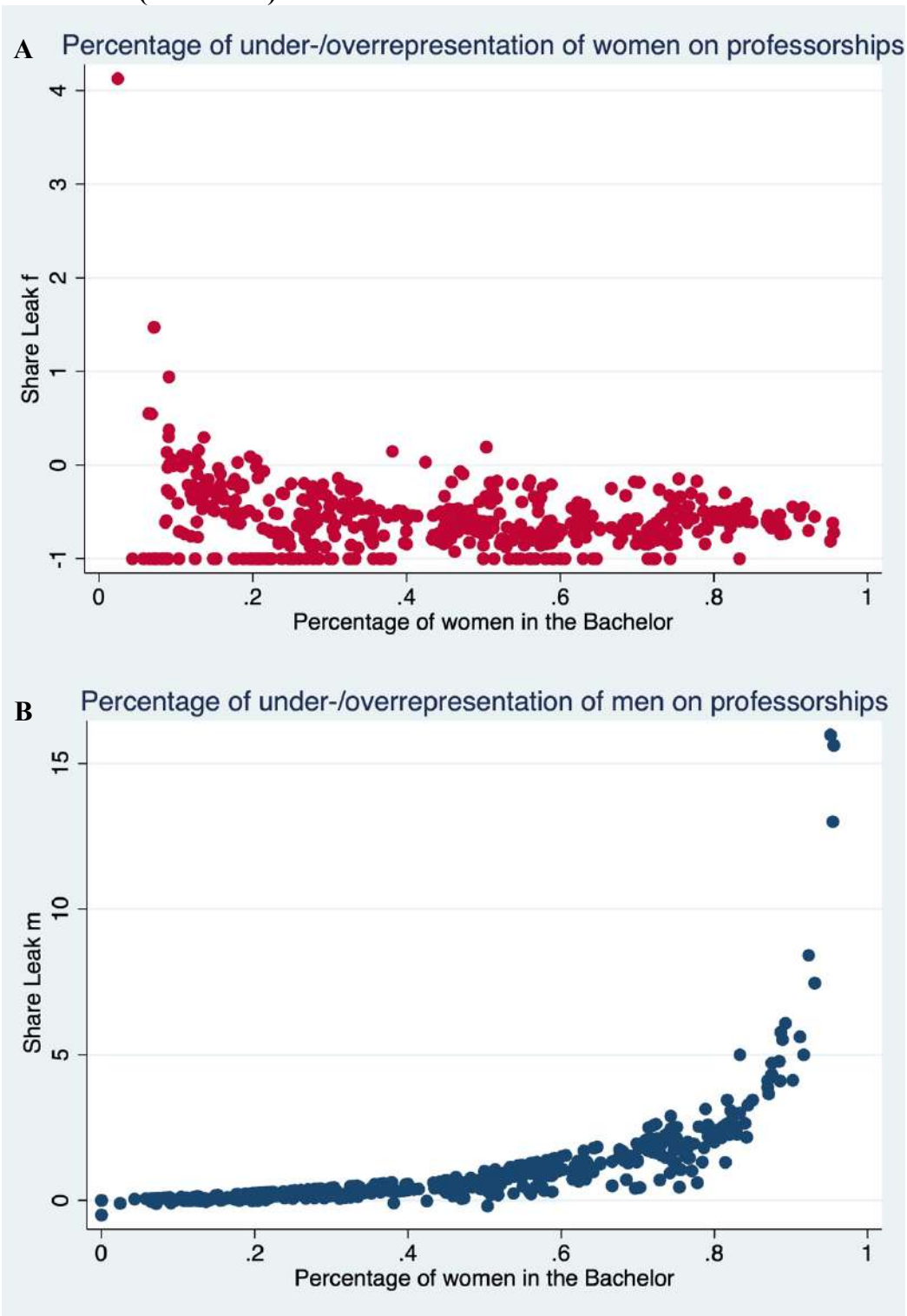


Figure 3a: Trajectory of the Leaky Pipeline in a female-dominated study field at UZH.

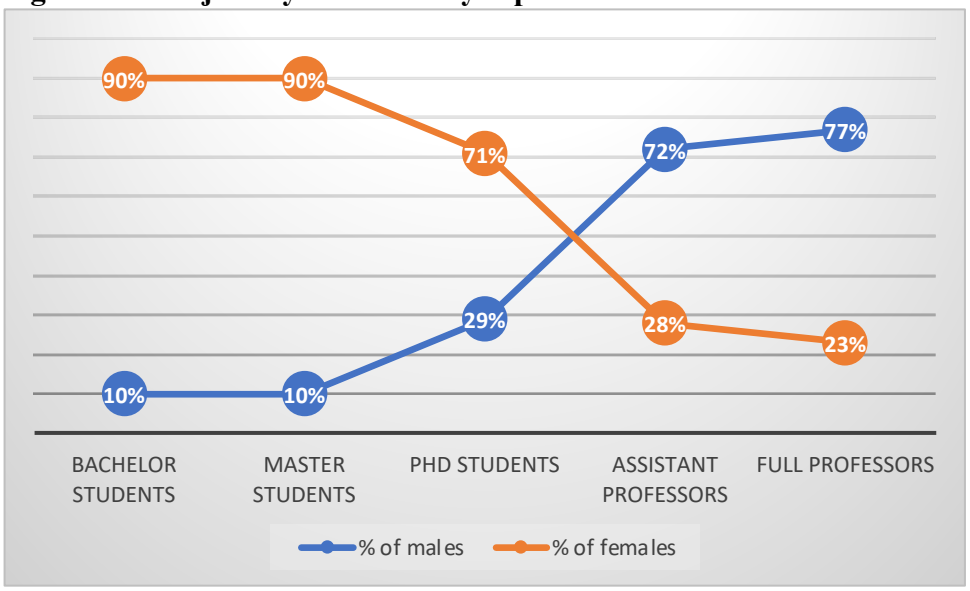


Figure 3b: Trajectory of the Leaky Pipeline in a male-dominated study field at UZH.

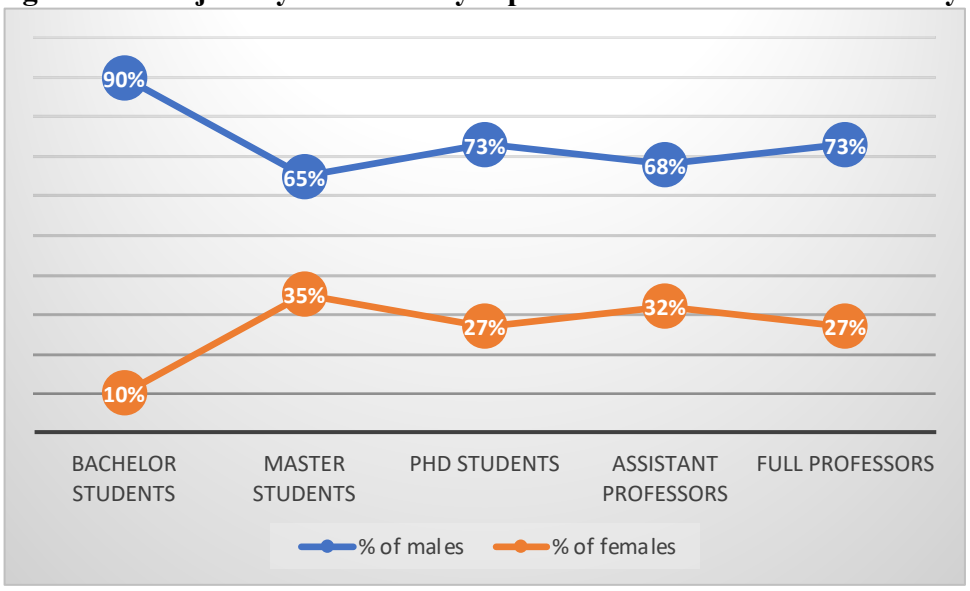


Figure 4a. Gender segregation of bachelor students at ETHZ

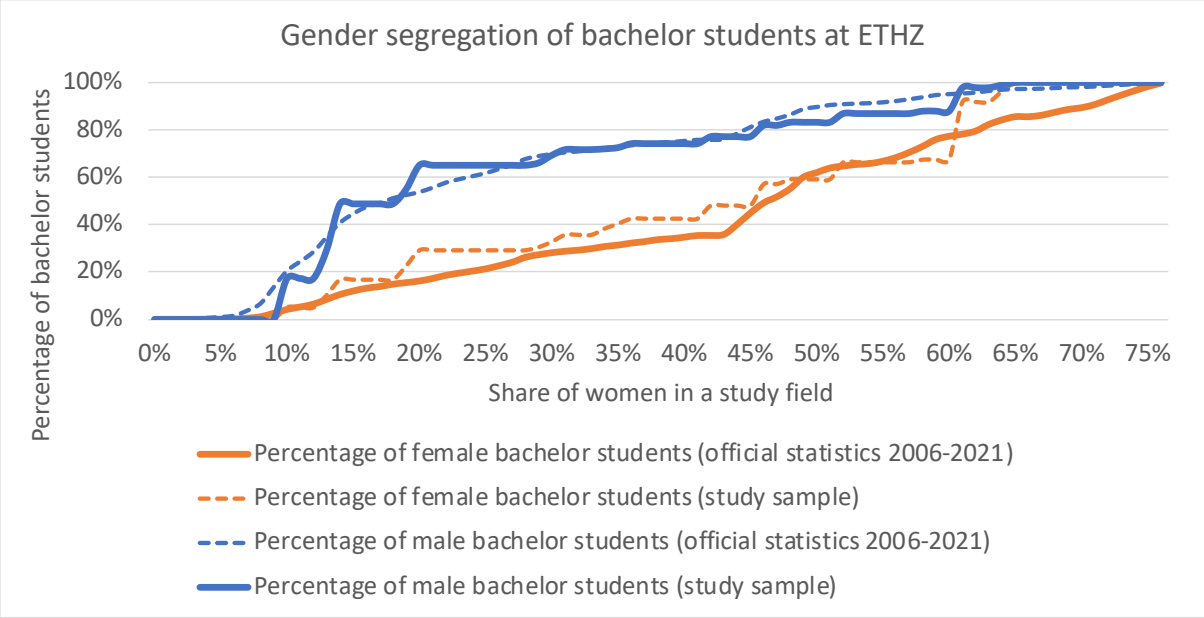
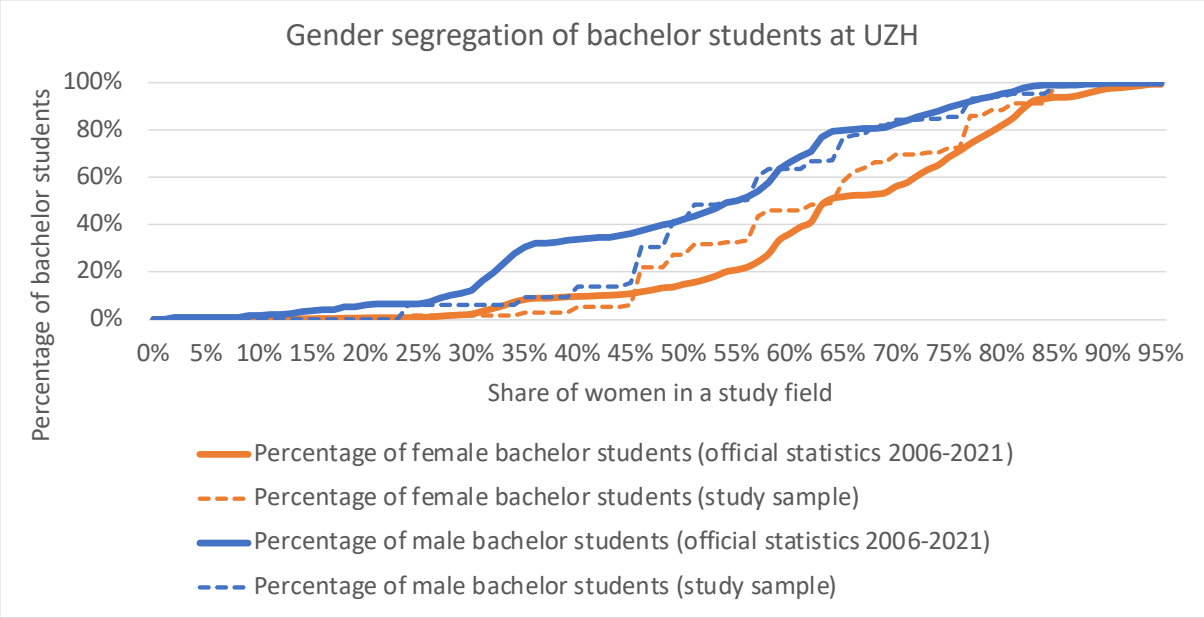
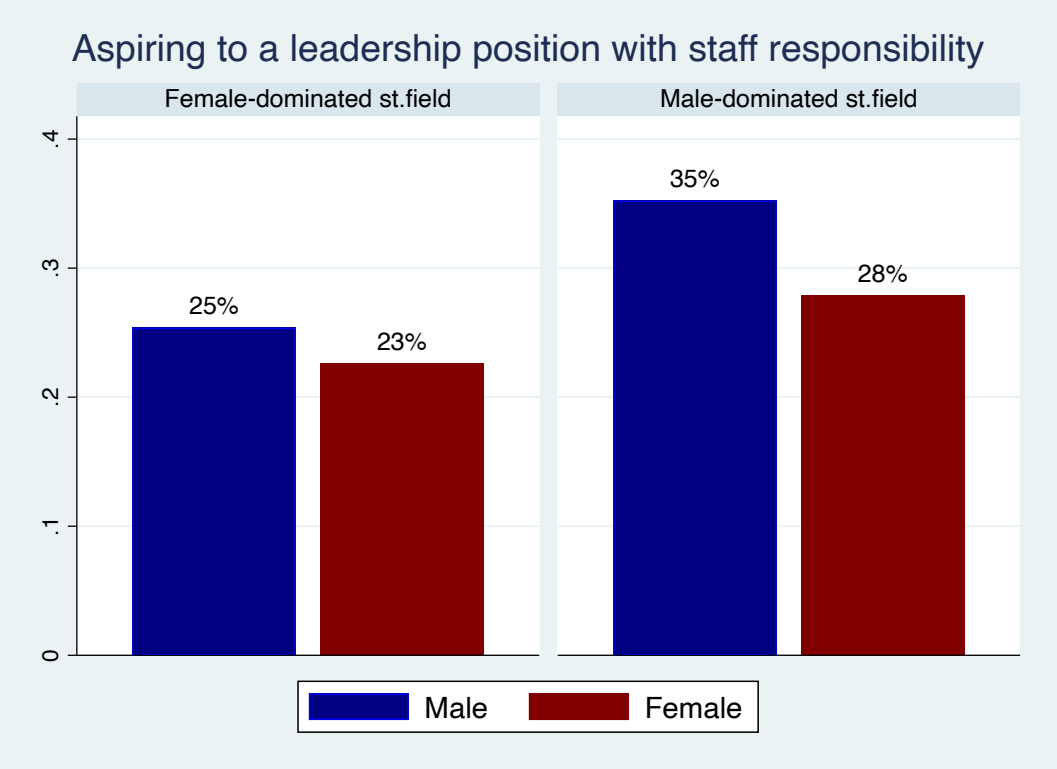


Figure 4b. Gender segregation of bachelor students at UZH

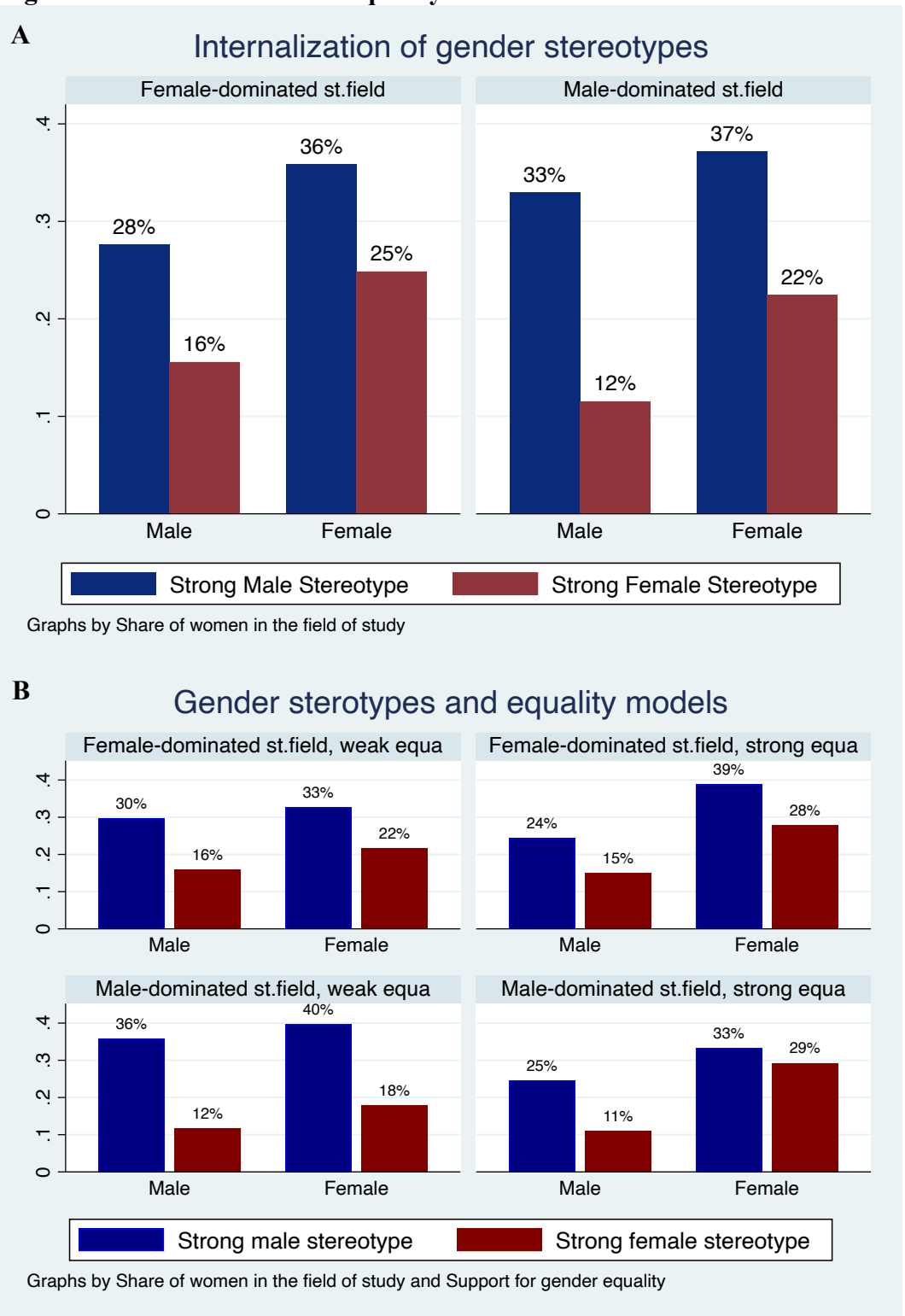


Figures 5. Career aspirations.



Legend: A study field is considered as female- (male-) dominated when 70 percent of bachelor graduates in this field consist of females (males). According to this narrowing of the data set 75 percent of all women in our study population (50 percent in women-dominated study fields and 15 percent in a male-dominated study fields) and 69 percent of all men in our study population (61 percent in male-dominated fields and 8 percent in women-dominated fields) are included.

Figures 6. Gender norms and equality model.



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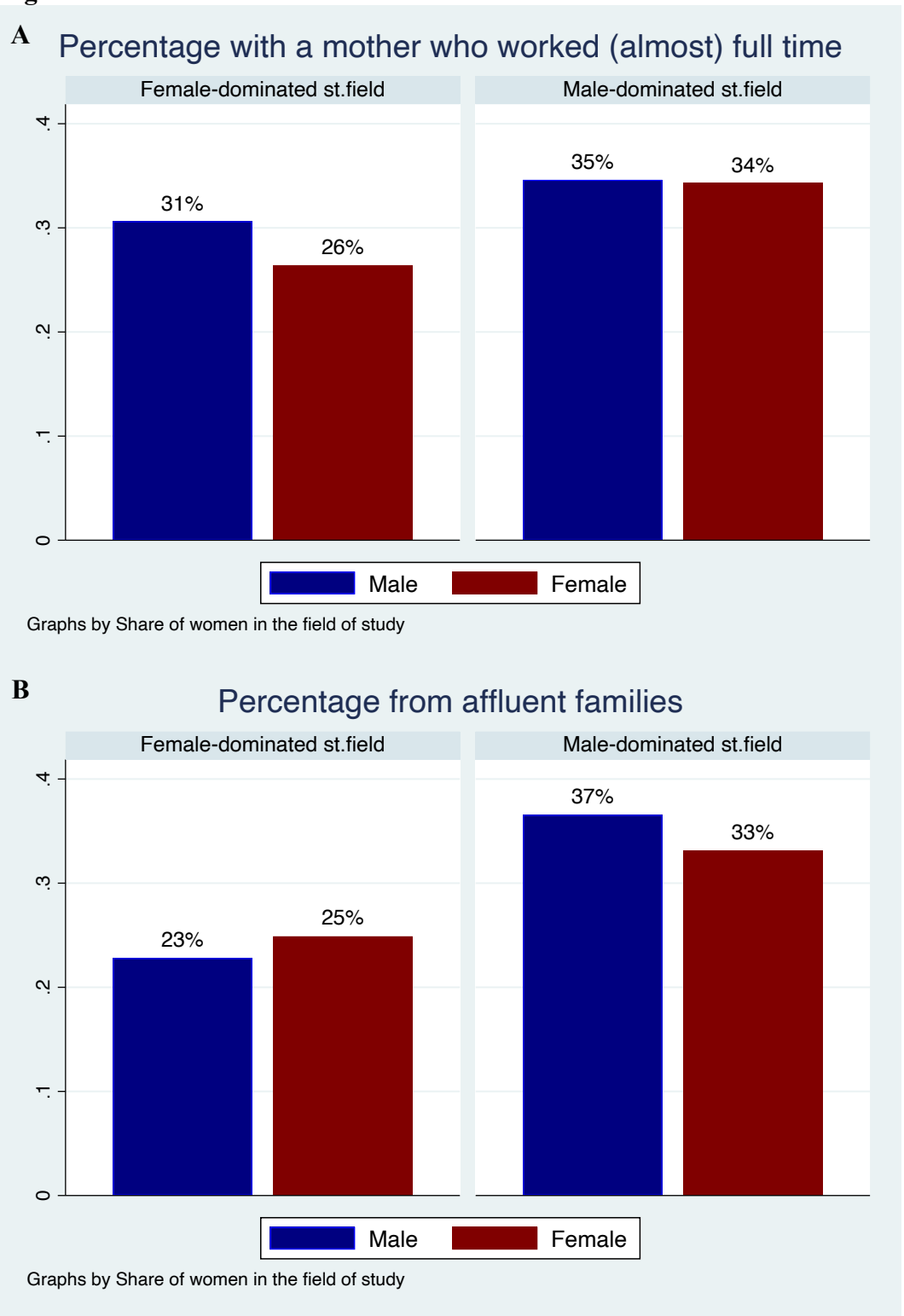
Figures 7. Socialization.



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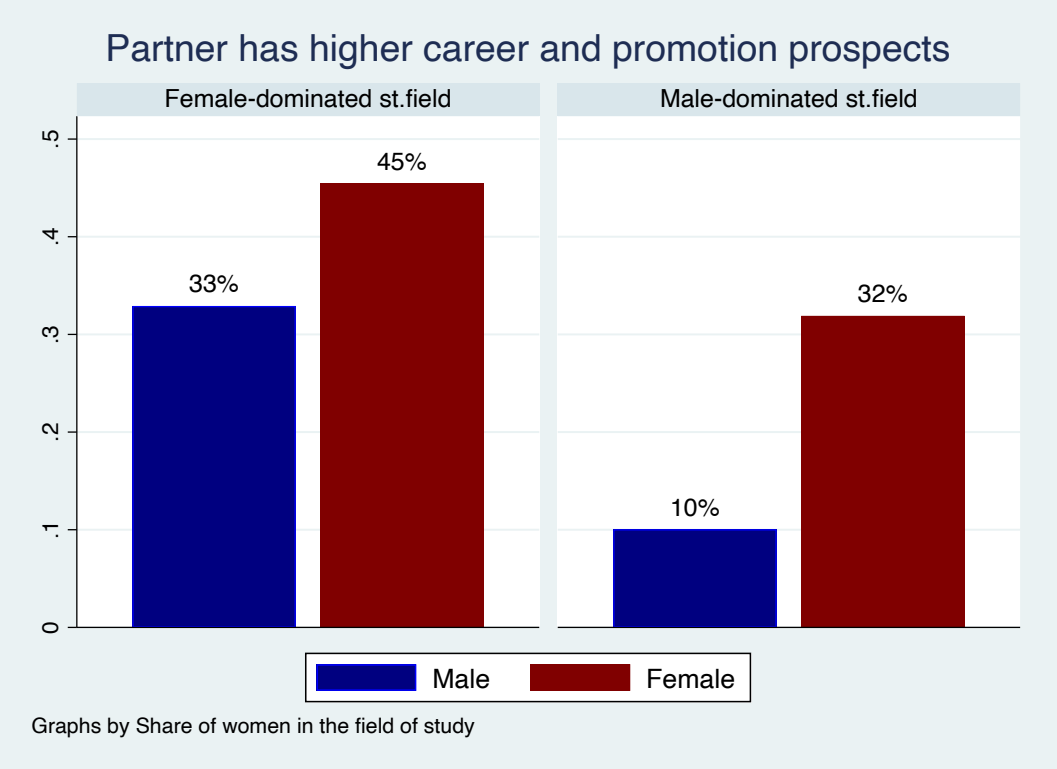
Figures 8. Choice of partners.



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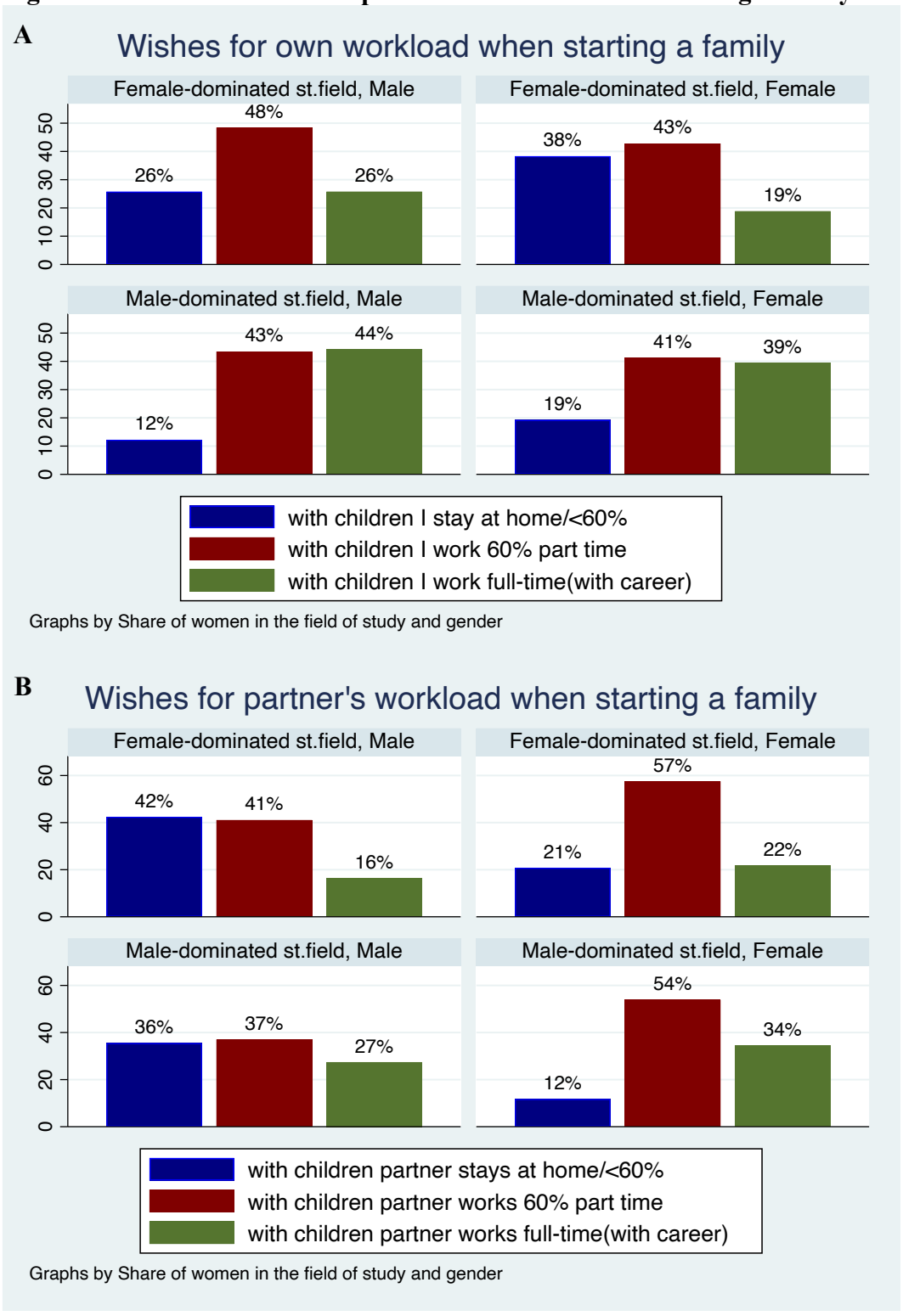
Figures 9. Wishes for own and partner's workload when starting a family



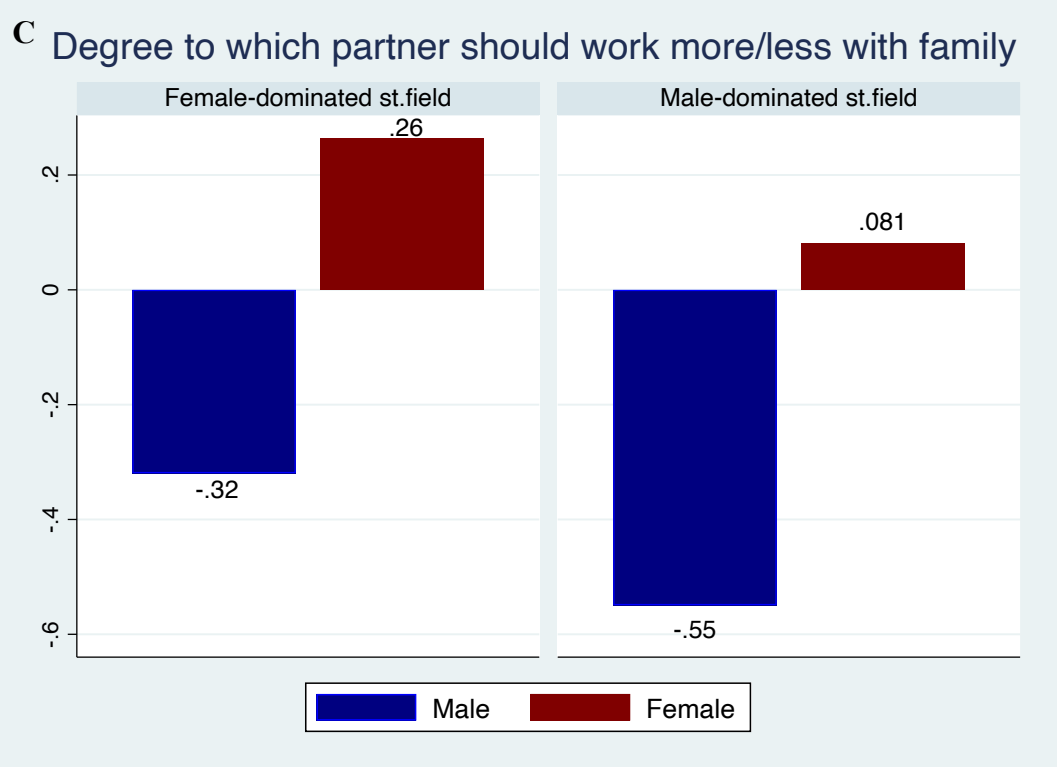


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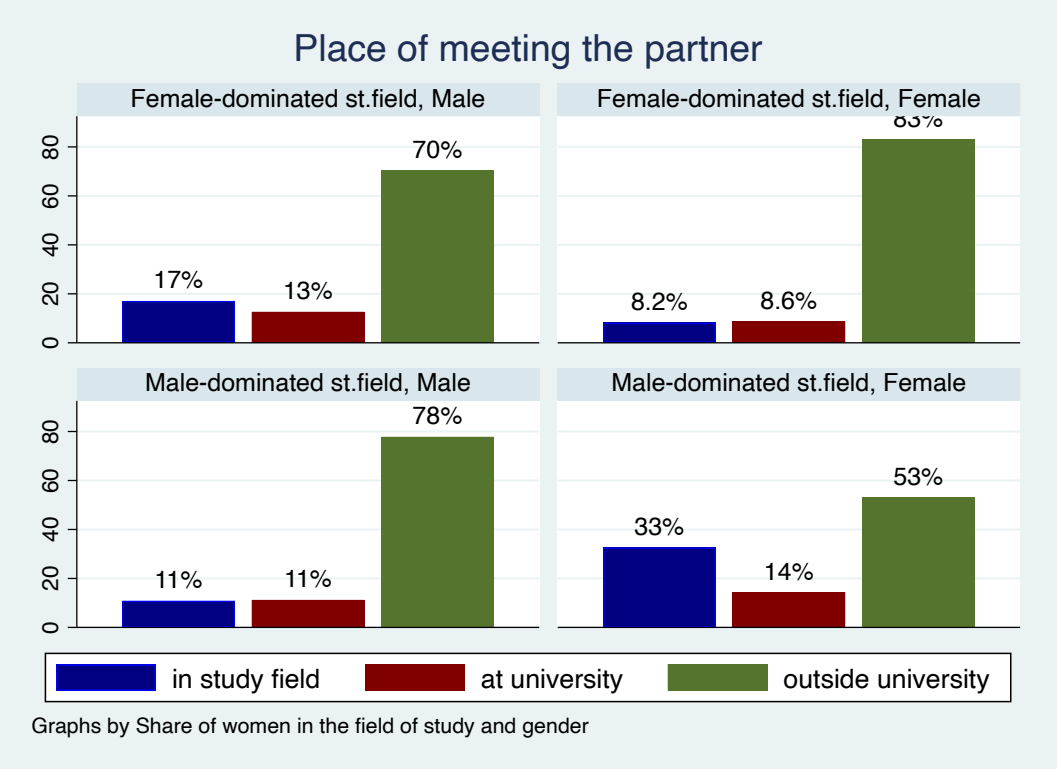
Figure 10. Place of meeting the partner.



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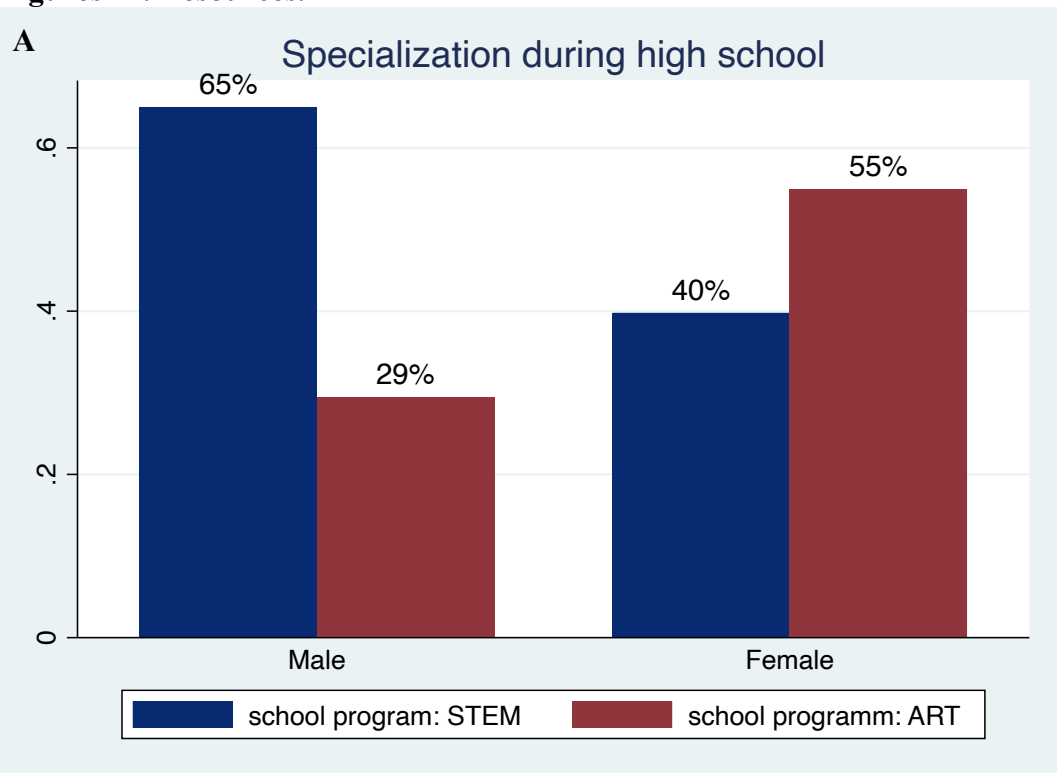
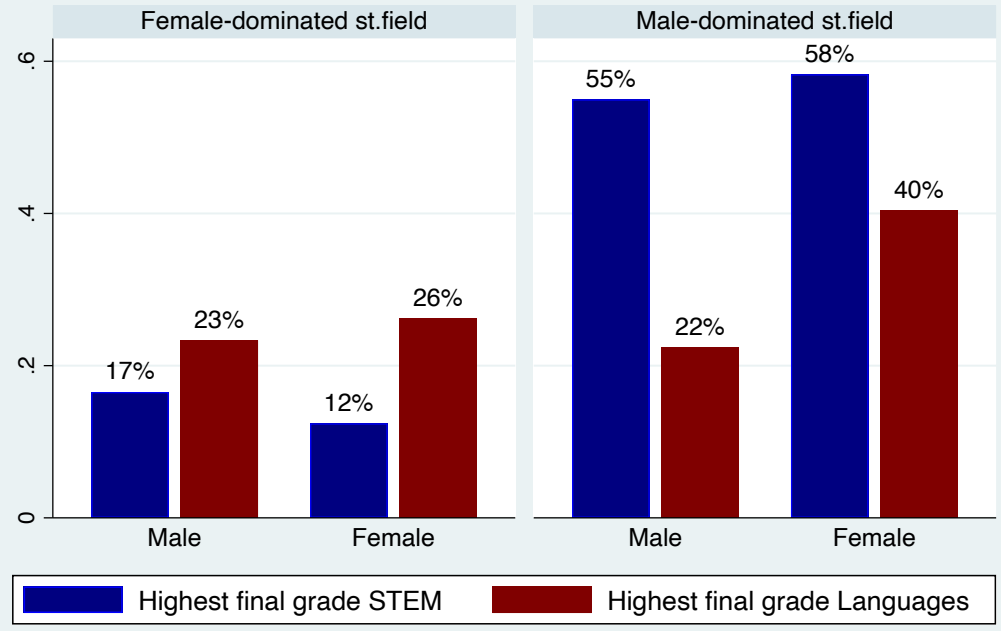
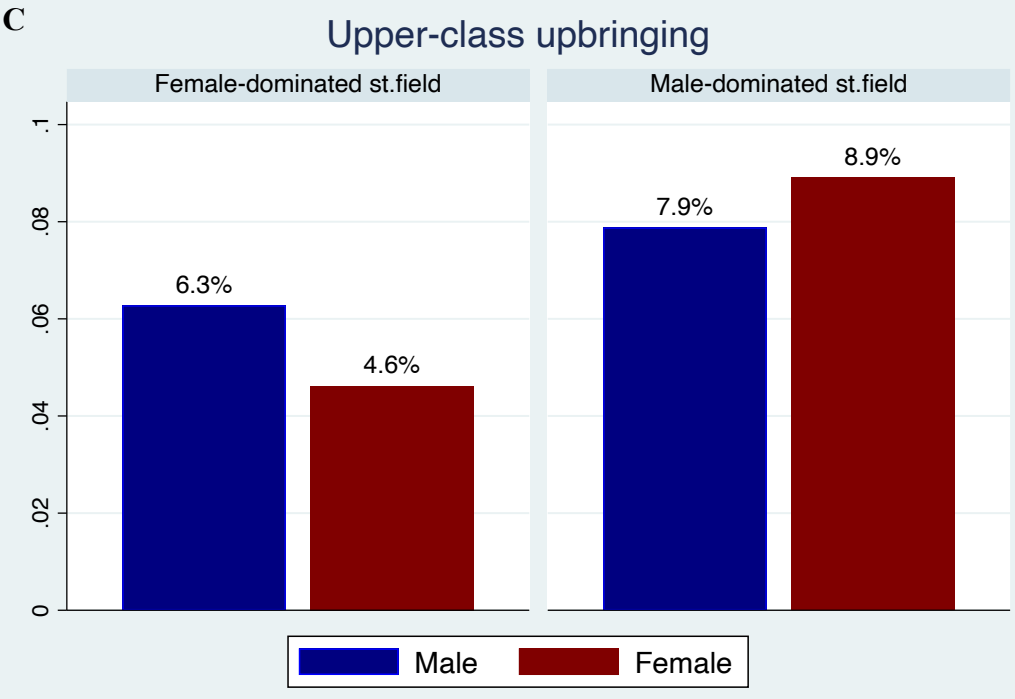
Figures 11. Resources.

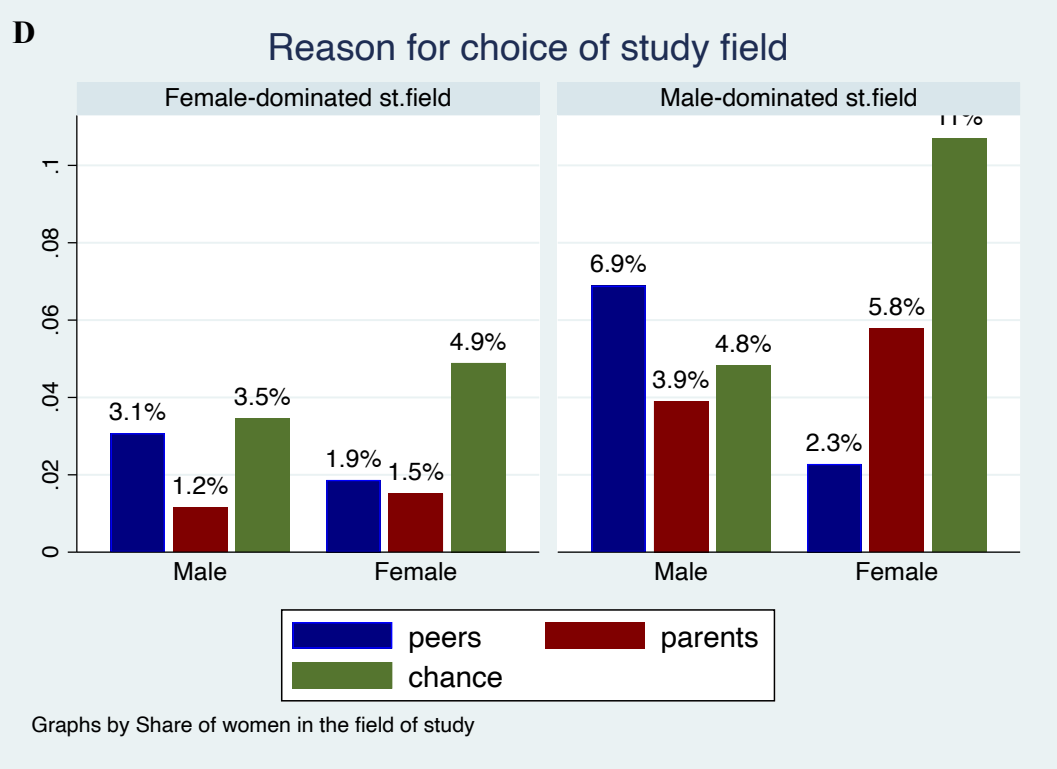


B


Excellent graduation performance in high school
Female-dominated st.field
Male-dominated st.field
0
.2
.4
.6
17%
23%
12%
26%
55%
22%
58%
40%
Male
Female
Male
Female
Highest final grade STEM
Highest final grade Languages
Graphs by Share of women in the field of study

C


Upper-class upbringing
Female-dominated st.field
Male-dominated st.field
0
.02
.04
.06
.08
.1
6.3%
4.6%
7.9%
8.9%
Male
Female
Graphs by Share of women in the field of study



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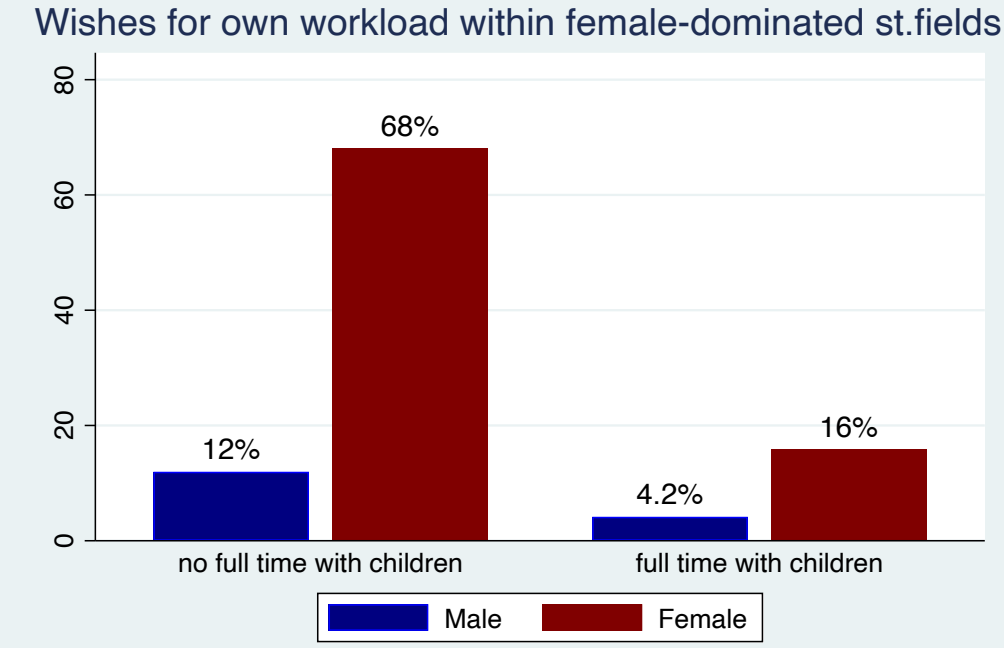
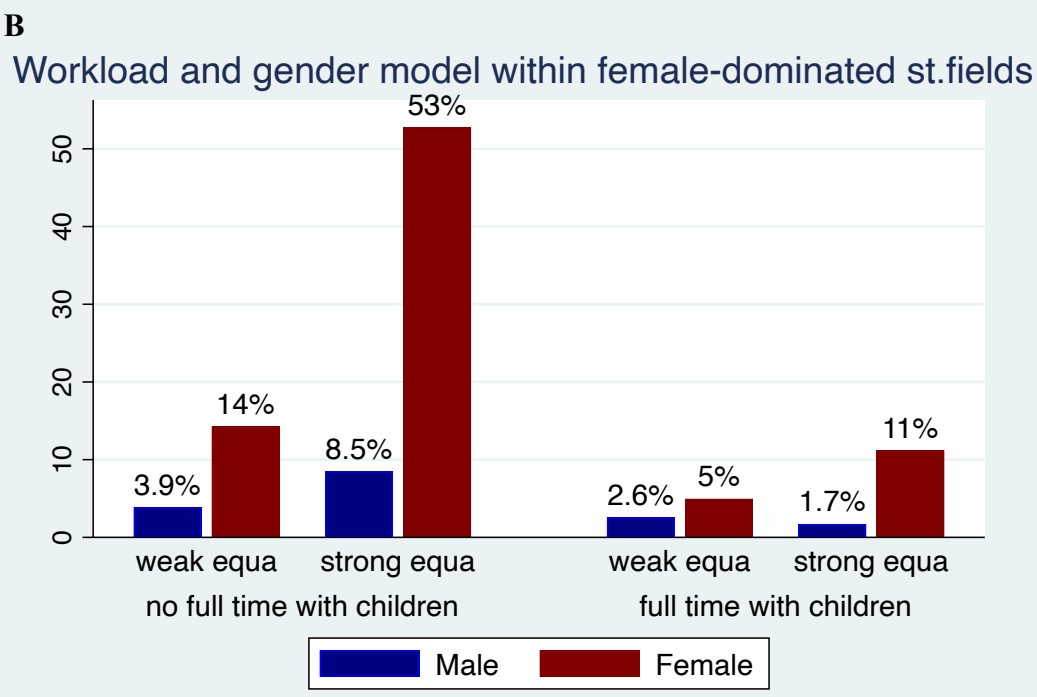
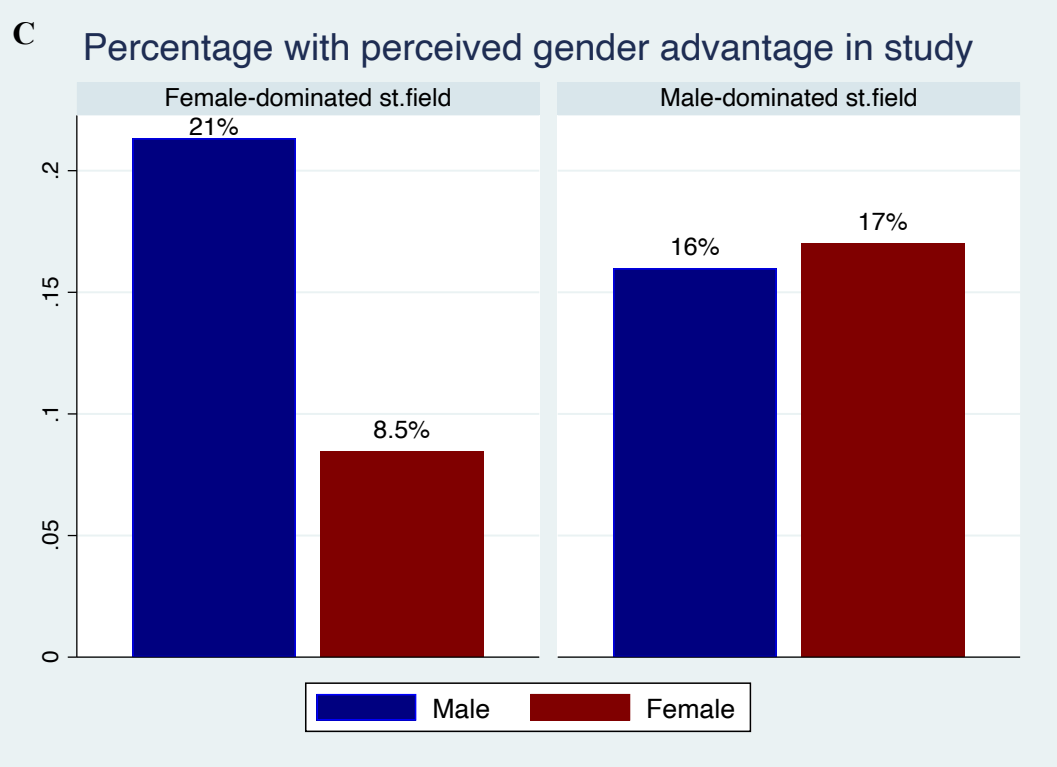
Figures 12. Status-group effect or Self-selection effect?

A



B





Legend: A study field is considered as female- (male-) dominated when 70 percent of bachelor graduates in this field consist of females (males). According to this narrowing of the data set 75 percent of all women in our study population (50 percent in women-dominated study fields and 15 percent in a male-dominated study fields) and 69 percent of all men in our study population (61 percent in male-dominated fields and 8 percent in women-dominated fields) are included.

Figure 13. Typology.

	Women	**Men**
Female-dominated study fields	**Equal-but-different-minded (50.3 percent)** • internalize traditional female stereotypes • reject traditional division of family duties • low career orientation • prefer part-time work after having children • feel disadvantaged only when gender is made salient	**Anti-traditionalist (7.6 percent)** • reject traditional gender stereotypes • reject traditional division of family duties • low career orientation, but higher than those of women in this field • prefer part-time work for both partners after having children • high self-efficacy
Male-dominated study fields	**Equal-but-independent-minded (14.9 percent)** • low internalization of traditional female stereotypes • reject traditional division of family duties • high career orientation • prefer full-time work for both partners after having children	**Traditionalists (60.9 percent)** • internalize traditional male stereotypes • welcome traditional division of family duties • high career orientation • prefer partner with low career prospect • low self-efficacy

Legend: A study field is considered as female- (male-) dominated when 70 percent of bachelor graduates in this field consist of females (males). The numbers in parentheses indicate the proportion of bachelor students enrolled in 2020 in fields dominated by women and men, respectively.

Table 1a. Sample characteristics.

VARIABLE	Frequency in the sample	Response rate	Frequency in the population 2021	Percentages in the population 2021
Male	3803	41.0	24225	47.3
Female	5467	59.0	27003	52.7
Total	*9270*	*100.0*	*100.0*	*100.0*
Bachelor-student	4781	54.1	25373	49.6
Master-student	2555	28.9	15528	30.3
PhD-student	970	11.0	10119	19.8
Postdoc	230	2.6	2258	4.4
Research associate	262	3.0	3332	6.5
Subtotal	1462	16.6	12307	19.4
Assistant professorship without tenure track	23	0.2		
Assistant professorship with tenure track	10	0.1		
Subtotal	33	0.3	158	0.3
Total	*8831*	*100.0*	*100.0*	*100.0*
Affiliated with UZH	5044	56.3	27719	54%
Affiliated with ETH	3919	43.7	23509	46%
Total	*8963*	*100.0*	*51228*	*100.0*

Table 1b. Representativeness of the sample according to study subject grouped.

Study subject grouped	Frequency in the sample	Response rate	Percentage of students enrolled in 2021
UZH:			
Social sciences and humanities	1874	38%	37%
Law and economics	1256	26%	26%
Natural Sciences and mathematics	943	19%	18%
Medicine and health	745	15%	18%
Theology and religious studies	56	1%	1%
Total	4874	100%	100%
ETH:			
Architecture and construction science	428	11%	18%
Natural sciences and mathematics	1291	34%	25%
Humanities, social and political sciences	29	1%	3%
Engineering	1399	37%	36%
System oriented natural sciences	680	18%	18%
Total	3827	100%	100 %

Appendix

Measurements

Women's share in the chosen study field: For each respondent, we consider the study field of the bachelor's degree and match this information with the women´s share in the 109 bachelor's study fields offered by UZH and ETHZ, using university statistics in 2021.[18]

Gender: We asked whether a person is male (=0) or female (=1).[19]

Preferences for fields of study according to career opportunities, earning potential and interest in the subject: Respondents were asked to indicate on a scale with multiple choices why they chose a certain study field for their bachelor: *interest in the subject, high earning potential,* and *career and promotion opportunities*, all measured on a dichotomic scale. We further asked in which sectors the respondents plan to pursue their professional life: *public service, research and education,* or *for-profit companies*. In addition, we asked on a five-point Likert scale whether they aspire for a leadership position and career advancement (two items; *aiming for career advancement*) and how (un)attractive they find a professorship in their field of study in terms of prestige and income compared to other outside options *(professorship not attractive).*

The variables *male* and *female gender norms* assess how strongly people identify themselves with stereotypes. We use a short new version of the Bem Sex-Role Inventory (BSRI) (Bem 1974; Troche and Rammsayer 2011). Respondents were asked on a five-point Likert scale how socially desirable they consider fifteen characteristics each for men and women (for both scales Cronbach's alpha=0.910):

Male stereotype: [has leadership qualities] [appears determined] [respectful] [defends own opinion] [persistent] [is willing to take a chance] [forceful] [fearless] [shows business-like behavior] [logical] [self-confident] [decisive] [powerful] [dominant] [success oriented]
Female stereotype: [soft-hearted] [strives to soothe hurt feelings] [delicate] [sensual] [sensitive] [affectionate] [graceful] [fashion-conscious] [caring] [communicative] [interested in other people] [affectionate] [sensitive] [communicative] [emotional].

Equality model: We include several variables capturing the extent to which respondents disagree with the traditional division of family duties between men and women. The variable *equality model* consists of 10 items measured on a five-point Likert scale and captures the extent to which respondents disagree with the traditional division of family roles between men and women (Cronbach's alpha=0.951):

Most items are reverse coded: [A job is fine, but what most women really want is a nice home and children]. [Being a housewife is just as fulfilling as having a paid job]. [University is more important for a boy than for a

[18] For few respondents, no match was possible because degrees were obtained in different universities in different countries for which no statistics were available. These respondents were excluded.
[19] 63 individuals were excluded because they did not identify themselves as female or male.

girl]. [Being professionally successful is more important for men than for women]. [Women should take typical women's jobs]. [It is better if the mother takes care of the children. [In families, the man should earn more than the woman.] [In families, the man should take on a higher workload than the woman at work.] [It is irresponsible for a mother of young children to work full time and focus on your career.] [It is responsible for a father of young children to work full time and focus on his career].

Gender stereotypes and norms are passed from parents to their children (Endendijk et al. 2014; Brenøe 2018; Dossi et al. 2019). Respondents had to assess on a five-point Likert scale the *career orientation* of their *father* and *mother* and whether their *father* or *mother reduced their working time* because of children. We also asked whether the people grew up with *siblings* and whether these were *older* or *younger brothers* or *sisters*.

Gender norms are also expressed by characteristics of existing partnership relations, and by the desires concerning future partnership relations (Bertrand, Kamenica, and Pan 2015). For this purpose, we distinguish between respondents with and without children respectively with and without partners.

Respondents with children: We distinguish *single parents*, *number of children*, *age when becoming parents, plan to have more children*, *degree of own work part-time work*, and degree *of respondent´s partner part-time work*.

Respondents without children: We asked for the strength of the *desire for children*. In the case of the desire for children, we asked *how many children* they plan *at which age*, and *to which extent they plan to work full-time and to pursue a career, or to work part-time if having children.* We also asked to which extent they would like their *partner* to do so.

Respondents living in a partnership: We asked whether they met their partner *inside or outside their field of study*, whether the *partner has higher* or lower *career options* than the respondent, and whether the *partner has higher* or lower *income and wealth* than the respondent. Further, we asked about the *age gap* between the two partners, and whether the partner's (future) *job* requires *mobility*.

Respondents living as singles: we asked how desirable they consider a *partner with higher career opportunities*, *higher income,* and *higher wealth*. Further, we asked for the desired *age gap* between the partners, and whether *job mobility* of the partner would be tolerable.

We assessed different kinds of *resources* which are at the disposal of respondents. For *cognitive resources,* we asked for grades in different school programs. We distinguished STEM (Science, Technology Engineering, Mathematics) and ART (for example languages or arts). We included *final grades in STEM* (measured by the final grade in high school for mathematics and the best

grade in natural science) and *final grades in languages* (measured by the final grade in high school for mother tongue and the first foreign language). Higher values indicate a better final grade. In addition, we measured the relationship between the language grade compared to the STEM grade by subtracting both grades. Positive values indicate a relative advantage in languages. Negative values indicate a relative advantage in STEM. *Self-efficacy* is measured by the instrument of Jerusalem and Schwarzer (2003) and consists of ten items on a five-point Likert scale (Cronbach's alpha=0.867):

[If someone resists me, I find ways and means to assert myself.] [I always succeed in solving difficult problems when I put my mind to it.] [It is not difficult for me to realize my intentions and goals.] [In unexpected situations I always know how to act] [Even in surprising events I believe that I will cope well.] [I face difficulties calmly because I can always rely on my intelligence.] [Whatever happens, I will manage] [I have a solution for every problem] [When I am confronted with a new thing, I know how to deal with it.] [When I am confronted with a problem, I usually have several ideas on how to deal with it].

Cultural capital resources are transmitted through the parent´s home. The index *upper-class upbringing* captures the extent to which people acquired cultural capital through an upper-class parental home (nine dichotomic items):

[I attended a private school]. [I attended a boarding school]. [I spent a period of my childhood/adolescence abroad]. [I learned a classical musical instrument (e.g., violin, piano, cello...)]. [I learned an originally aristocratic sport (e.g., horseback riding, tennis, field hockey...)]. [I regularly went to the opera, art exhibitions, concerts, theatre with my parents]. [I regularly went to expensive restaurants with my parents]. [My parents collected art and/or fine wines]. [Influential people from business, culture, politics, or science regularly frequented our home].

We also measure the highest *education level* of the *father* and the *mother* (1=no degree up to 8=PhD) and an index for *parents' income/wealth* (two items, 1=low up to 5=high).

Respondents were in addition asked to indicate why they chose a study field for their bachelor's degree: *friends chose the same subject, parents' advice,* and *coincidence* (dichotomic scale). Peer influences are more likely to indicate an unfocused use of resources, whereas parental advice is more likely to indicate a focused use of resources. Random choices can also be associated with higher resources that one brings to a study field since preferences have a smaller effect on choices allowing for serendipity (Frey, Osterloh, and Rost 2022).[20]

Status-Group effect: To capture the Status-Group effect we asked respondents whether they have experienced positive track records in their academic progress or not. If women have experienced less positive track-records than men, this may indicate a discrimination according

[20] Serendipity means openness to chance or to random events (Merton and Barber 2011)

to negative gender stereotypes. We asked on a five-point Likert-scale whether respondents have experienced such records (four items, *perceived trackrecords):*

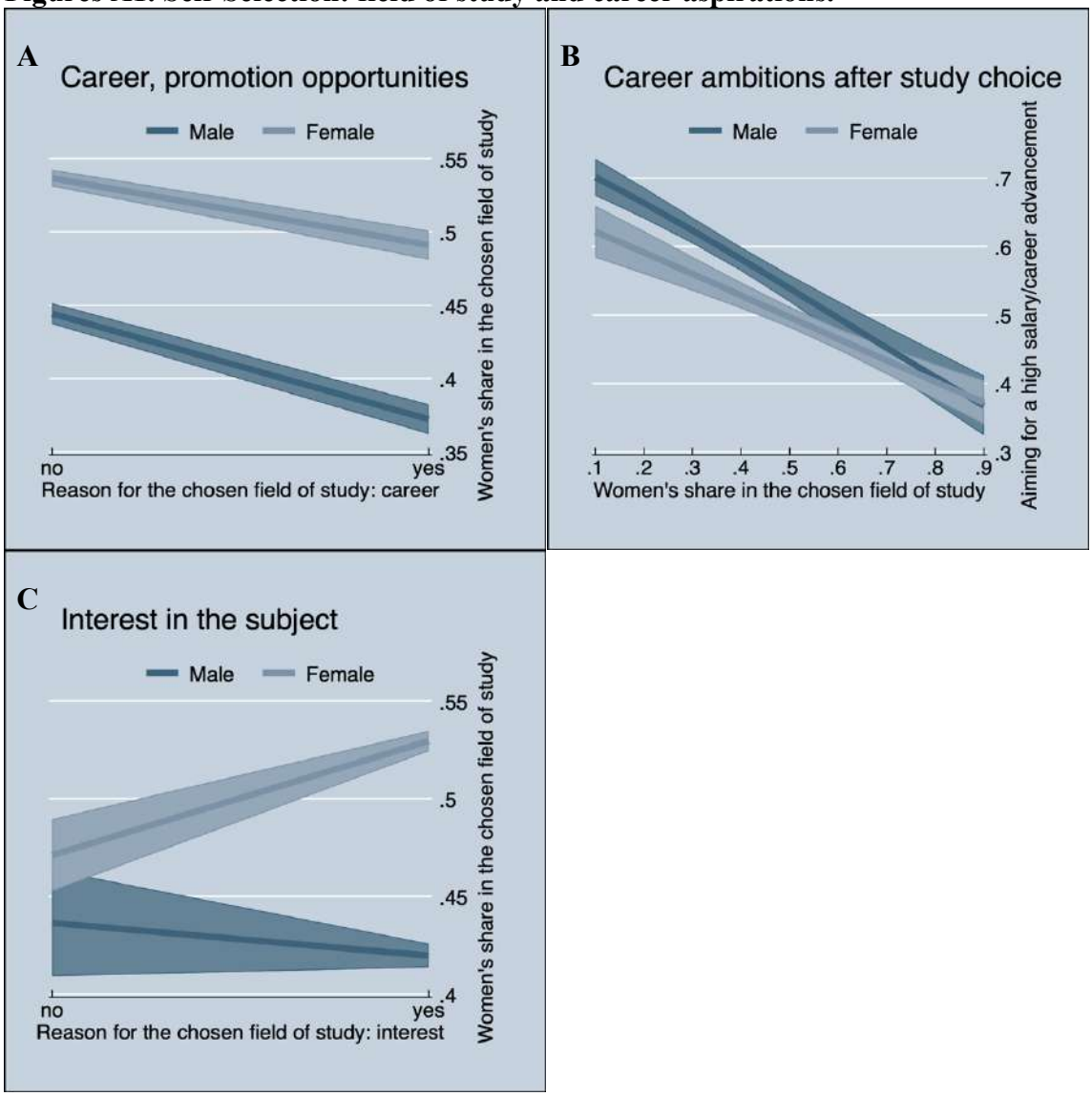
[Do you feel favored within your studies by professors/tutorial leaders]? [Have you been offered attractive job opportunities in the study field more often than average (e.g., as a semester assistant, tutor, staff member, substitute professor, etc.)]? [Have you been awarded more times than average (e.g., semester award, financial allowances, promotions, etc.)?] [Did you receive an above-average amount of praise and recognition from professors and/or supervisors]?

To find out whether the respondents feel advantaged or disadvantaged because of their gender we asked them explicitly whether this is the case (one item, *gender preference*).

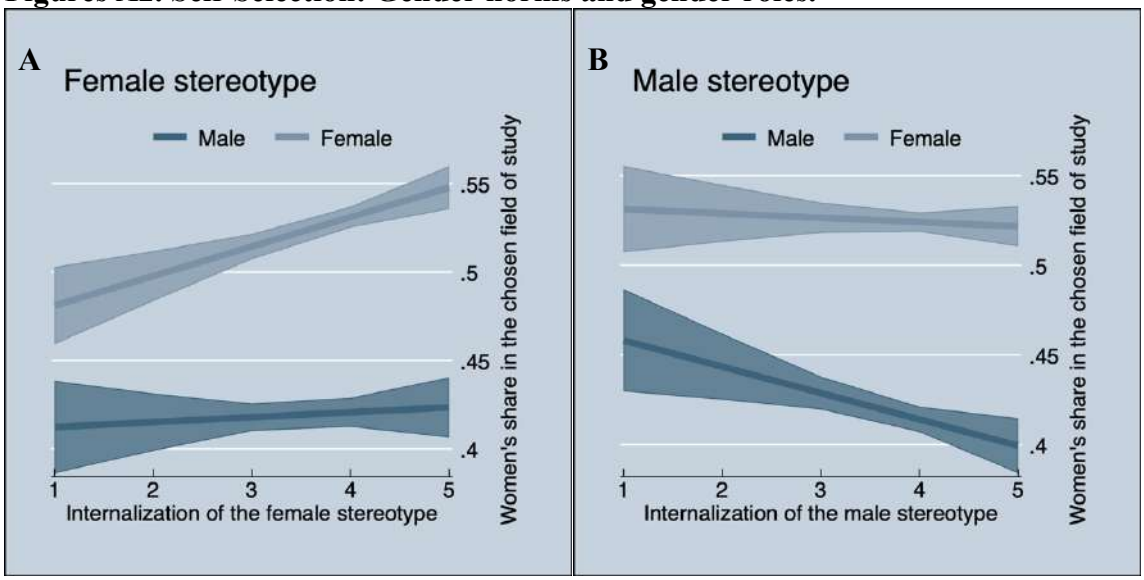
Control variables: In all regression models we include the same set of control variables, namely *university affiliation* (0=ETHZ/1=UZH), an index for *own income/wealth* (two items, 1=low up to 5=high), the *presence of children* (0=no/1=yes), *living in partnership* (0=no/1=yes) and *student/employment group* (Bachelor student (reference group), Master student, PhD student, Postdoc, Assistant professorship without tenure track, Assistant professorship with tenure track, Research associate). We excluded *age* and *semester* because both variables are highly correlated with student/employment group.

Figures

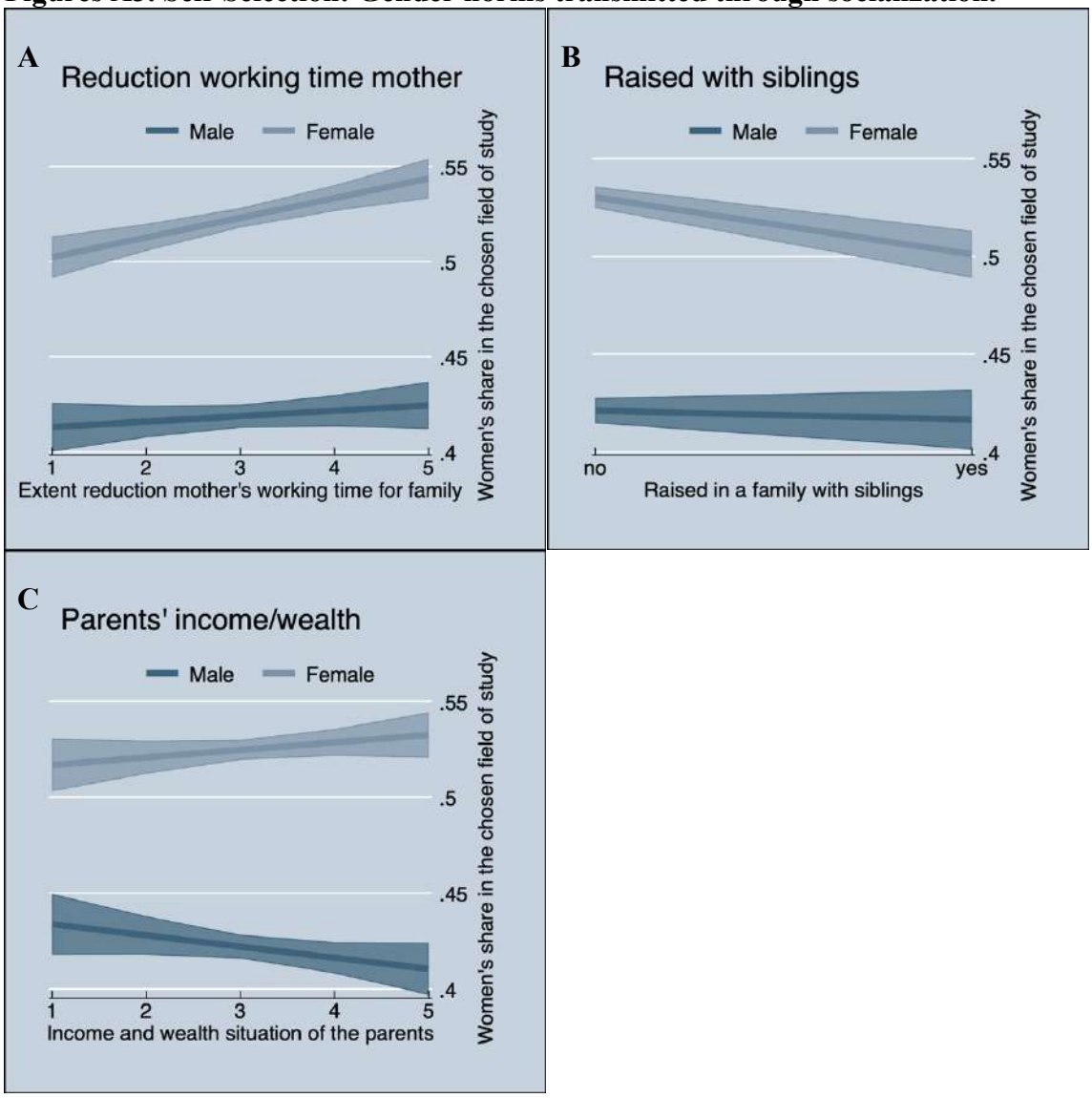
Figures A1. Self-Selection: field of study and career aspirations.



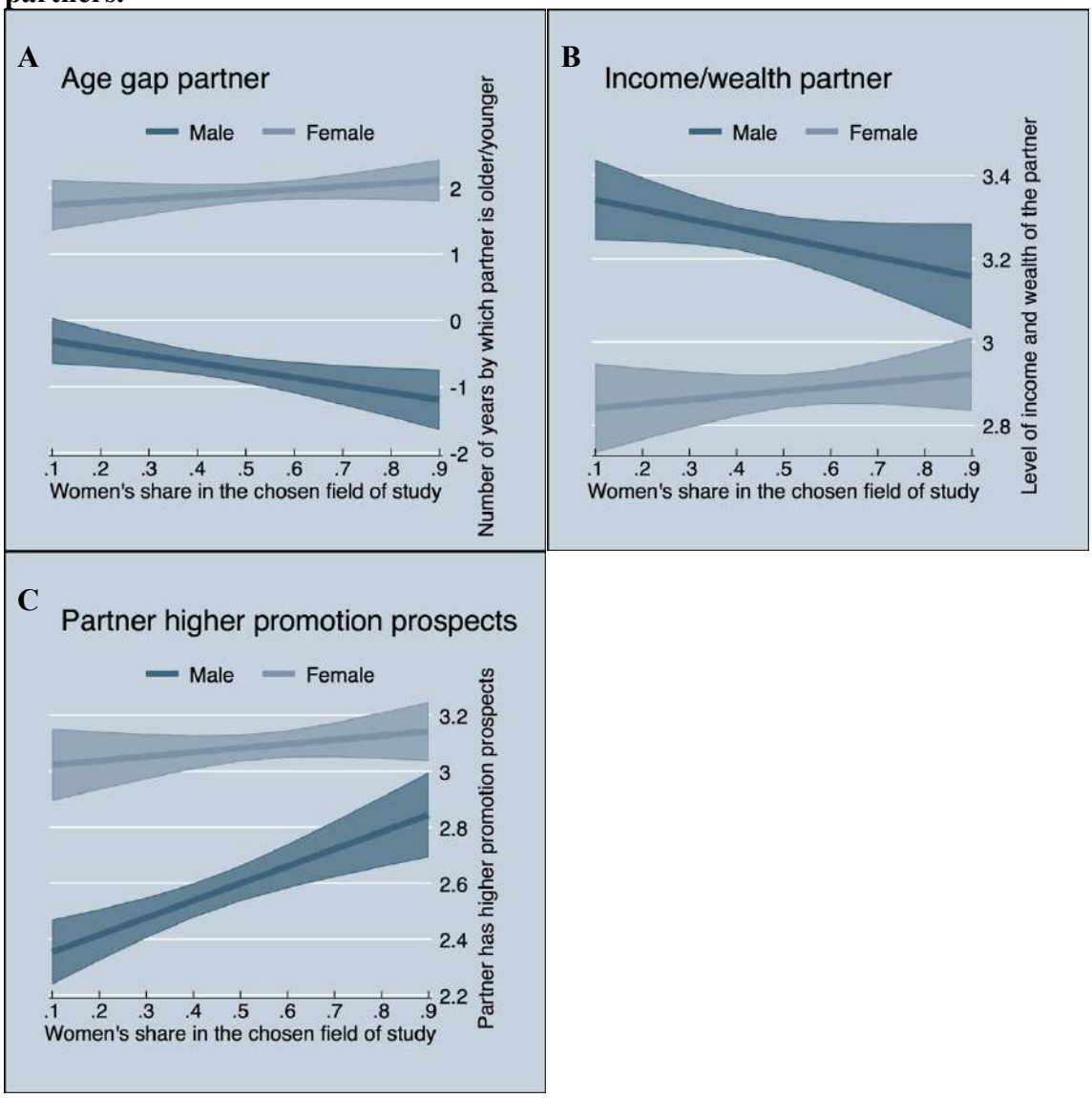
Figures A2. Self-Selection: Gender norms and gender roles.



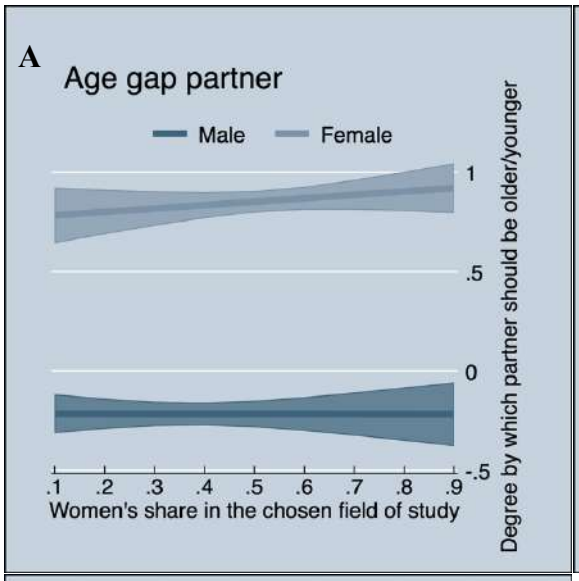
Figures A3. Self-Selection: Gender norms transmitted through socialization.

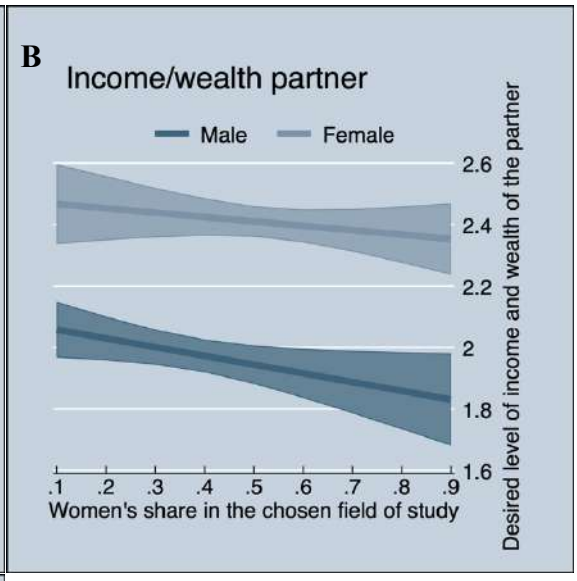


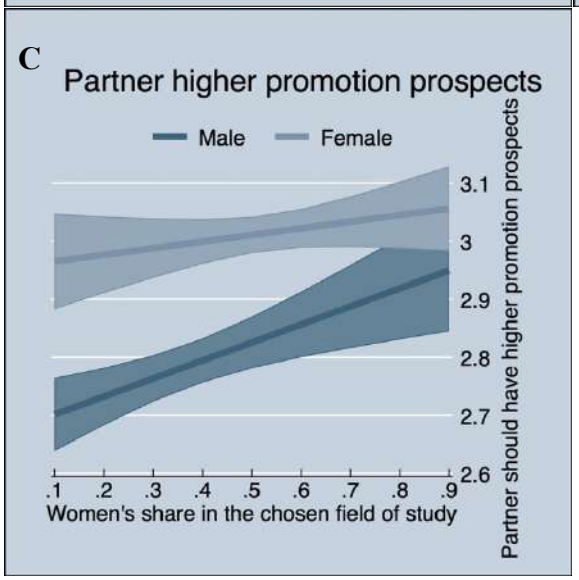
Figures A4a. Self-Selection: Gender norms and the choice of partners for people with life partners.



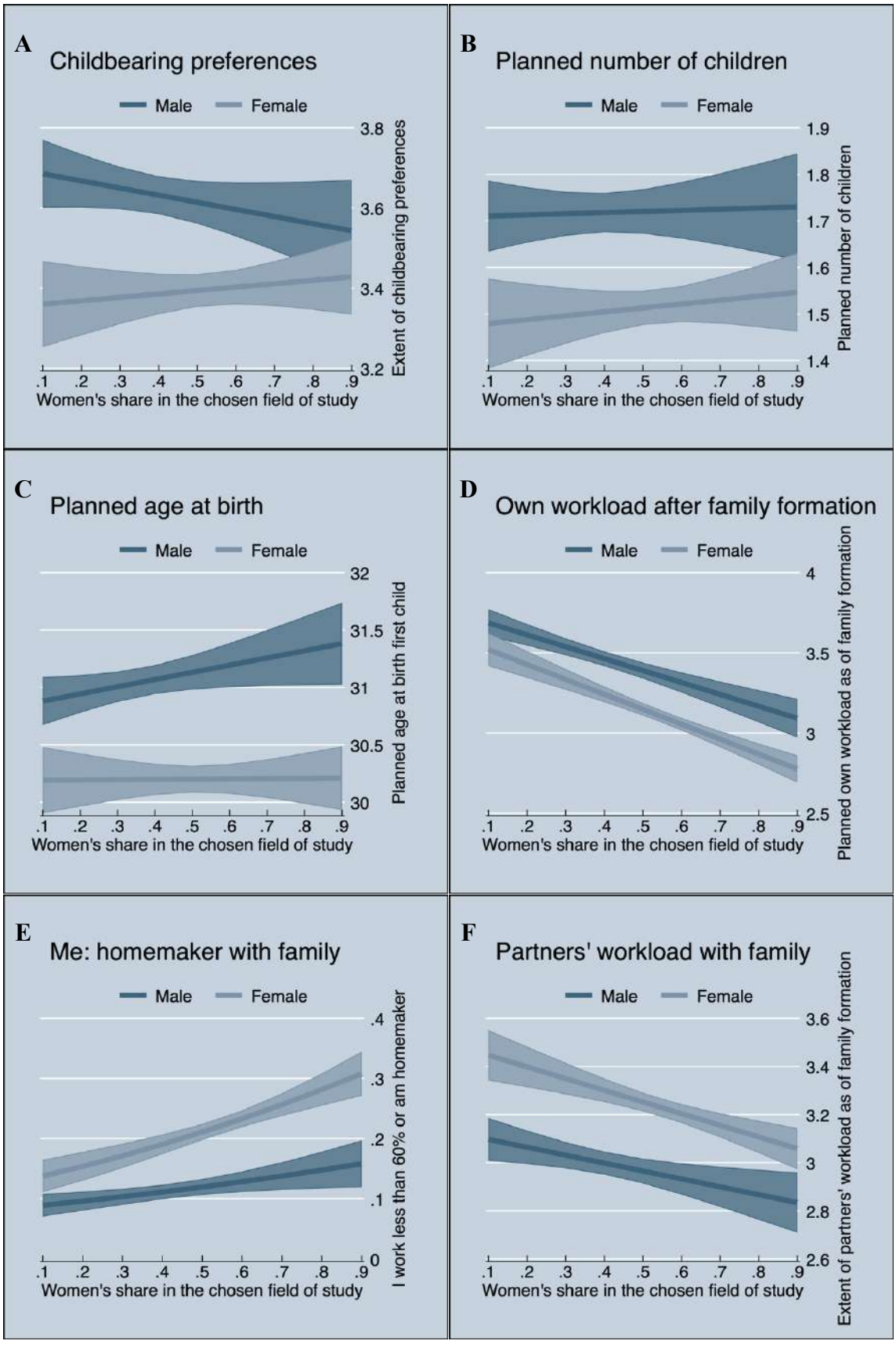
Figures A4b. Self-Selection: Gender norms and the choice of partners for people without life partners.

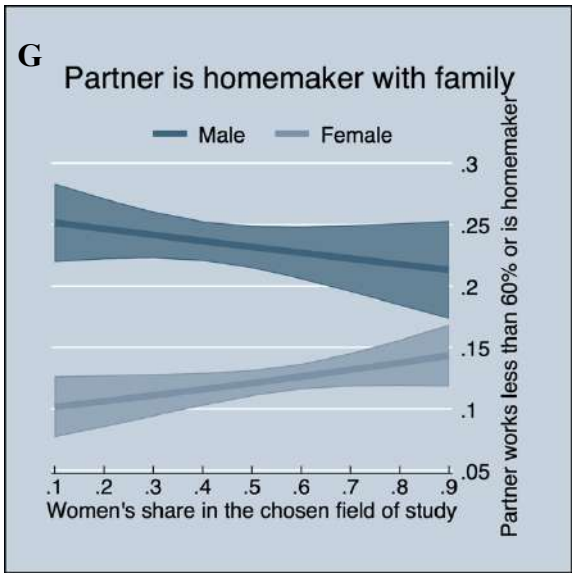

A
Age gap partner
Male
Female
1
.5
0
-.5
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
Degree by which partner should be older/younger


B
Income/wealth partner
Male
Female
2.6
2.4
2.2
2
1.8
1.6
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
Desired level of income and wealth of the partner


C
Partner higher promotion prospects
Male
Female
3.1
3
2.9
2.8
2.7
2.6
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
Partner should have higher promotion prospects

Figures A5a. Self-Selection: Gender norms and childbearing preferences for people without children.





Figures A5b. Self-Selection: Gender norms and childbearing preferences for people with children.

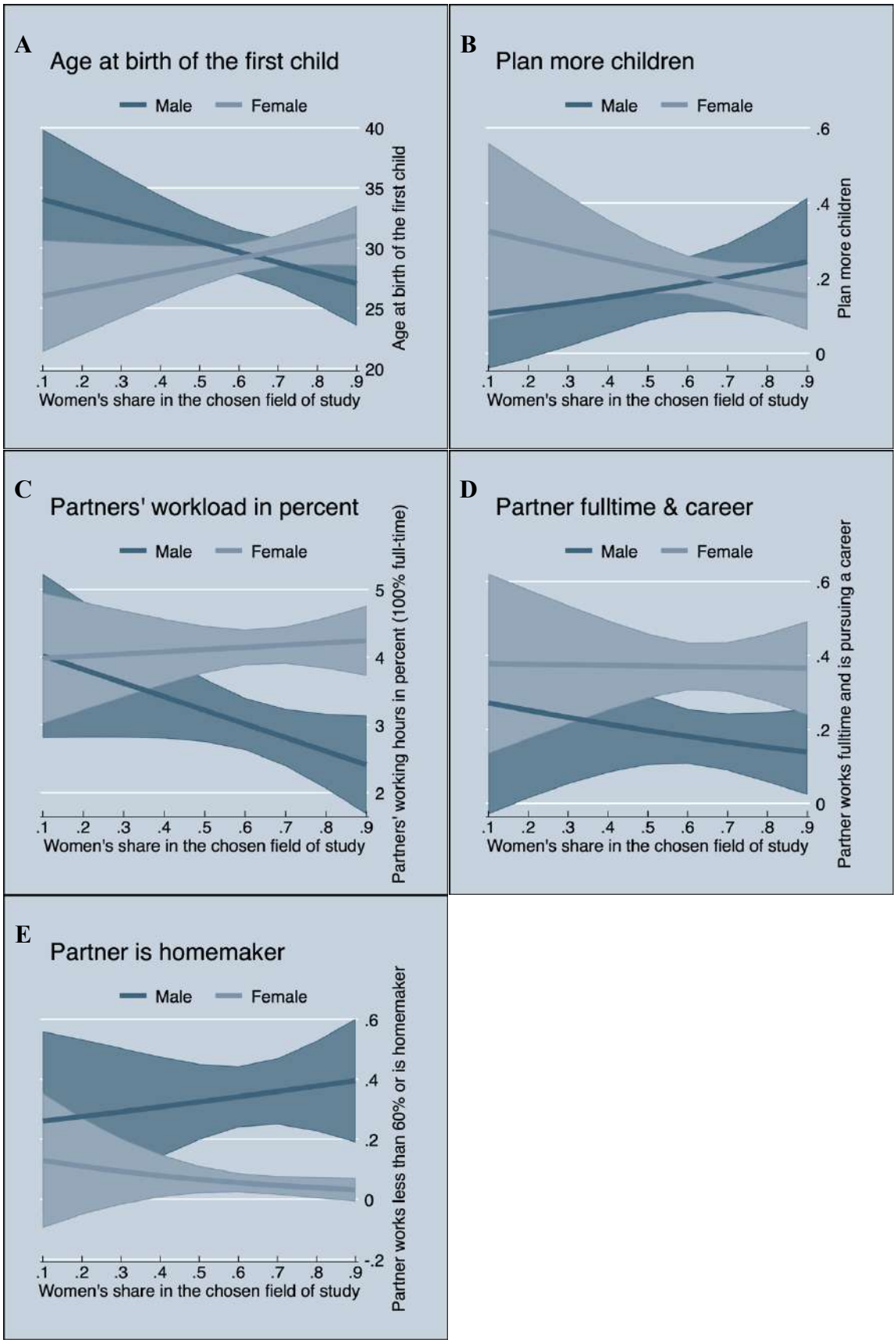
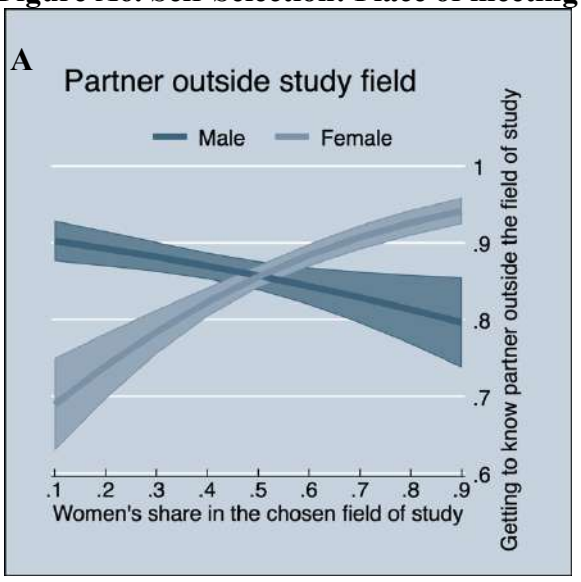
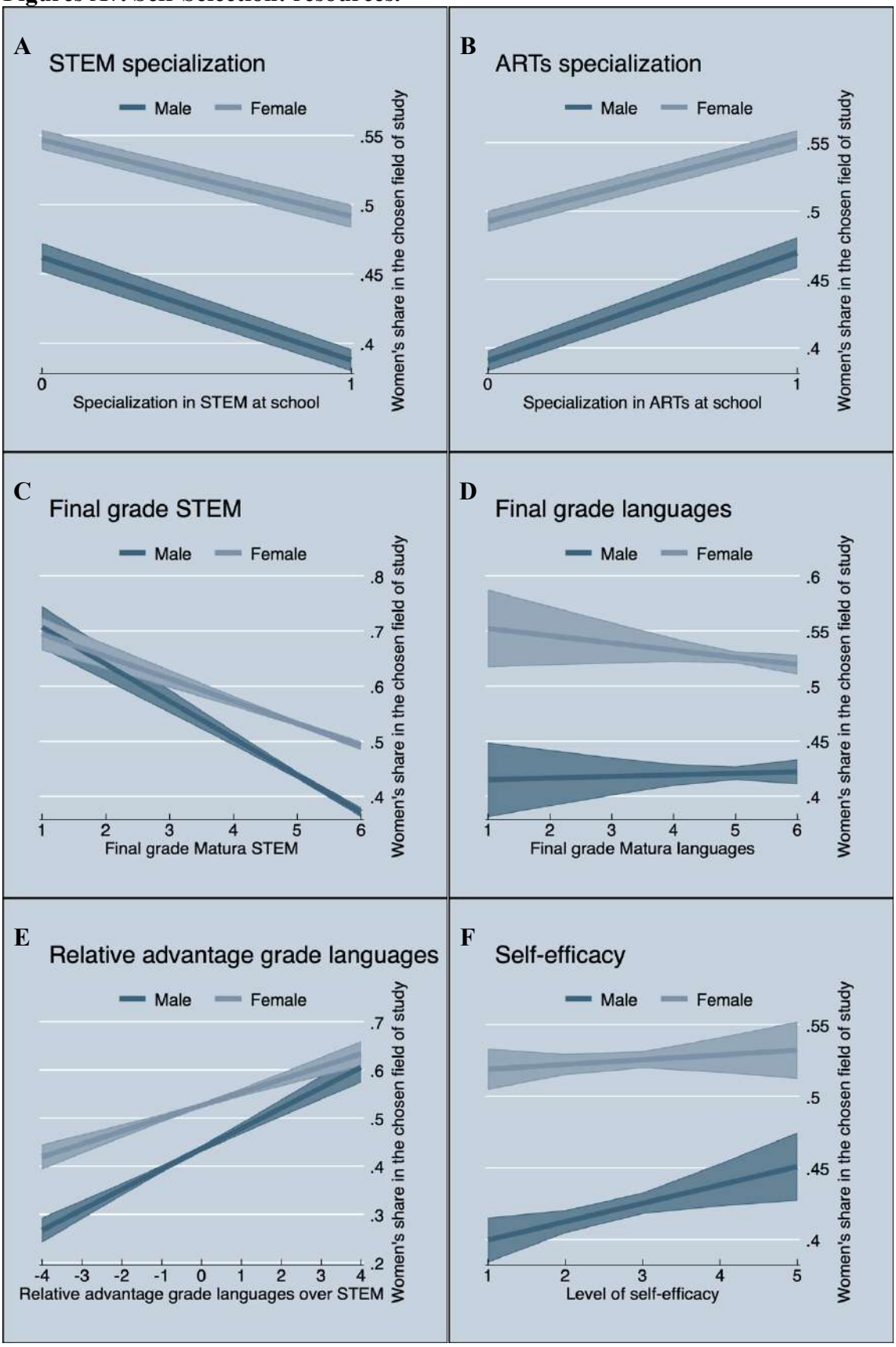
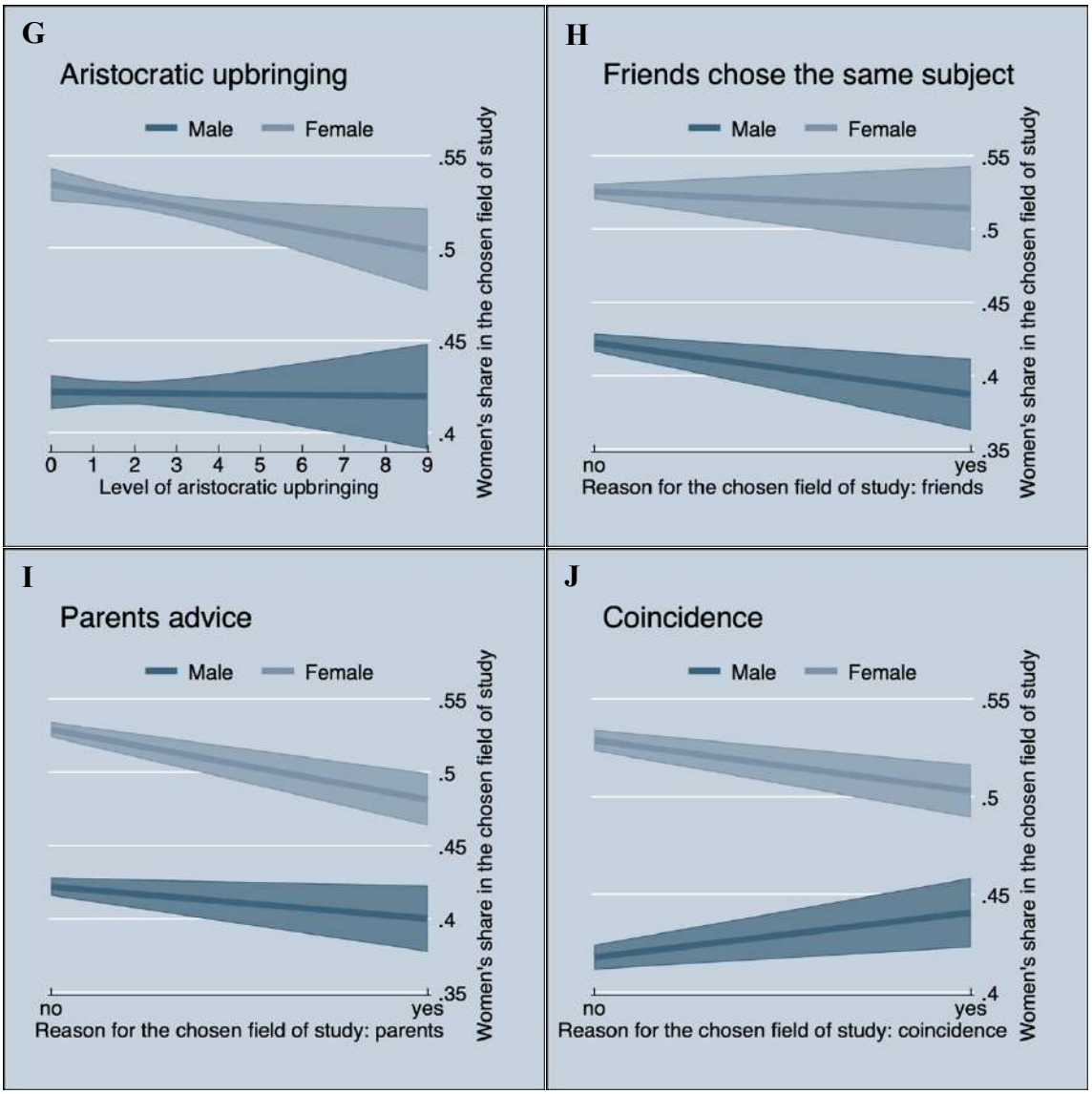

A
Age at birth of the first child
Male
Female
40
35
30
25
20
Age at birth of the first child
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
B
Plan more children
Male
Female
.6
.4
.2
0
Plan more children
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
C
Partners' workload in percent
Male
Female
5
4
3
2
Partners' working hours in percent (100% full-time)
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
D
Partner fulltime & career
Male
Female
.6
.4
.2
0
Partner works fulltime and is pursuing a career
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study
E
Partner is homemaker
Male
Female
.6
.4
.2
0
-.2
Partner works less than 60% or is homemaker
.1 .2 .3 .4 .5 .6 .7 .8 .9
Women's share in the chosen field of study

Figure A6. Self-Selection: Place of meeting the partner for people with life partners.

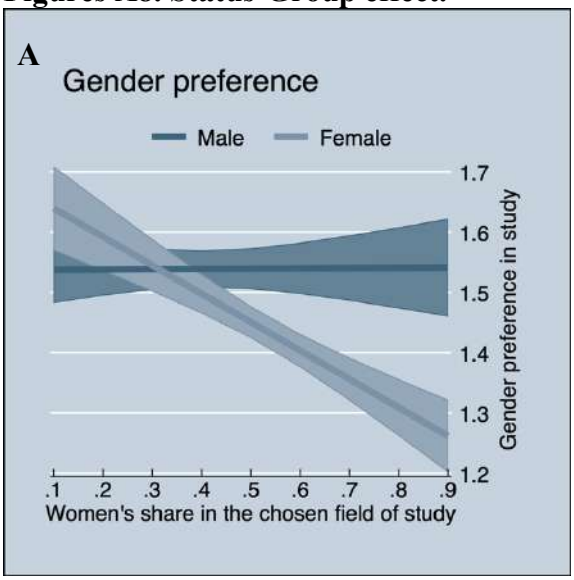


Figures A7. Self-Selection: resources.




G
Aristocratic upbringing
Male
Female
.55
.5
.45
.4
0 1 2 3 4 5 6 7 8 9
Level of aristocratic upbringing
Women's share in the chosen field of study
H
Friends chose the same subject
Male
Female
.55
.5
.45
.4
.35
no
yes
Reason for the chosen field of study: friends
Women's share in the chosen field of study
I
Parents advice
Male
Female
.55
.5
.45
.4
.35
no
yes
Reason for the chosen field of study: parents
Women's share in the chosen field of study
J
Coincidence
Male
Female
.55
.5
.45
.4
no
yes
Reason for the chosen field of study: coincidence
Women's share in the chosen field of study

Figures A8. Status-Group effect.



Tables

Table A1a. Self-Selection effects: field of study and career aspirations (before study choice).

Y: Women's share in the chosen study field	(1)	(2)	(3)
Female	0.092***	0.092***	0.035**
	(0.005)	(0.004)	(0.017)
Affiliated with UZH	0.241***	0.239***	0.244***
	(0.004)	(0.004)	(0.004)
Own income/wealth	-0.006**	-0.007***	-0.007***
	(0.002)	(0.002)	(0.002)
Presence of children	0.050***	0.050***	0.056***
	(0.011)	(0.010)	(0.011)
Living in partnership	0.007*	0.006	0.007*
	(0.004)	(0.004)	(0.004)
Master student (Ref: Bachelor)	-0.029***	-0.029***	-0.024***
	(0.004)	(0.004)	(0.004)
PhD student (Ref: Bachelor)	-0.027***	-0.032***	-0.022***
	(0.007)	(0.007)	(0.007)
Postdoc (Ref: Bachelor)	-0.029**	-0.032**	-0.022
	(0.013)	(0.013)	(0.013)
Assistant professorship without tenure track (Ref: Bachelor)	-0.091**	-0.088**	-0.077*
	(0.043)	(0.042)	(0.043)
Assistant professorship with tenure track (Ref: Bachelor)	-0.132**	-0.126**	-0.115*
	(0.062)	(0.062)	(0.063)
Research associate (Ref: Bachelor)	0.002	-0.001	0.010
	(0.013)	(0.013)	(0.013)
Career, promotion opportunities	-0.072***		
	(0.006)		
Female#Career, promotion opportunities	0.026***		
	(0.009)		
High earning potential		-0.095***	
		(0.006)	
Female#High earning potential		0.012	
		(0.009)	
Interest in the subject			-0.017
			(0.014)
Female#Interest in the subject			0.075***
			(0.017)
Constant	0.329***	0.336***	0.320***
	(0.006)	(0.006)	(0.015)
Observations	7,334	7,334	7,334
R-squared	0.453	0.465	0.442

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A1b. Self-Selection effects: field of study and career aspirations (after study choice).

VARIABLES	(1) Career in public service	(2) Career in research/education	(3) Career in economy	(4) Career ambitions after study choice	(5) Professorship not attractive
Women's share in the chosen study field	2.613***	1.258***	-2.531***	-1.799***	-0.550***
	(0.211)	(0.207)	(0.195)	(0.188)	(0.078)
Female	-0.129	0.185	-0.399***	-0.416***	-0.026
	(0.147)	(0.130)	(0.125)	(0.121)	(0.051)
Female#Women's share in the chosen study field	0.375	-0.252	-0.283	0.484**	0.024
	(0.276)	(0.258)	(0.241)	(0.233)	(0.098)
Affiliated with UZH	0.953***	-0.407***	0.795***	0.702***	0.105***
	(0.063)	(0.068)	(0.065)	(0.063)	(0.026)
Own income/wealth	-0.004	-0.071**	0.094***	0.022	0.086***
	(0.032)	(0.032)	(0.030)	(0.029)	(0.012)
Presence of children	0.006	-0.059	-0.441***	-0.212	-0.178***
	(0.140)	(0.173)	(0.136)	(0.131)	(0.055)
Living in partnership	0.062	-0.099*	0.064	0.171***	-0.071***
	(0.054)	(0.054)	(0.051)	(0.050)	(0.021)
Master student (Ref: Bachelor)	-0.056	0.277***	0.356***	-0.015	-0.141***
	(0.061)	(0.059)	(0.057)	(0.055)	(0.023)
PhD student (Ref: Bachelor)	-0.487***	1.474***	0.355***	-0.122	-0.191***
	(0.089)	(0.118)	(0.085)	(0.082)	(0.034)
Postdoc (Ref: Bachelor)	-1.112***	3.117***	0.275	-0.577***	-0.136**
	(0.171)	(0.459)	(0.169)	(0.165)	(0.068)
Assistant professorship without tenure track (Ref: Bachelor)	-1.252**	2.296**	-0.731	-1.354**	-0.147
	(0.567)	(1.040)	(0.571)	(0.592)	(0.215)
Assistant professorship with tenure track (Ref: Bachelor)	-2.265**		-1.217	-0.691	-0.427
	(1.102)		(0.859)	(0.777)	(0.314)
Research associate (Ref: Bachelor)	-0.791***	1.757***	-0.038	-0.205	-0.309***
	(0.169)	(0.256)	(0.169)	(0.162)	(0.069)
Constant	-1.900***	0.382***	0.822***	0.589***	2.482***
	(0.115)	(0.103)	(0.101)	(0.097)	(0.041)
Observations	7,334	7,327	7,334	7,334	6,757
R-squared	0.140	0.046	0.068	0.021	0.037

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A2. Self-Selection: Gender norms and gender roles.

Y: Women's share in the chosen study field	(1)	(2)	(3)
Female	0.061**	0.055**	0.101***
	(0.026)	(0.024)	(0.008)
Affiliated with UZH	0.243***	0.243***	0.240***
	(0.004)	(0.004)	(0.004)
Own income/wealth	-0.006**	-0.006**	-0.007***
	(0.002)	(0.002)	(0.002)
Presence of children	0.051***	0.053***	0.051***
	(0.011)	(0.011)	(0.011)
Living in partnership	0.007	0.007*	0.004
	(0.004)	(0.004)	(0.004)
Master student (Ref: Bachelor)	-0.026***	-0.027***	-0.014***

	(0.004)	(0.005)	(0.005)
PhD student (Ref: Bachelor)	-0.026***	-0.024***	-0.011
	(0.007)	(0.007)	(0.007)
Postdoc (Ref: Bachelor)	-0.019	-0.019	-0.004
	(0.014)	(0.014)	(0.013)
Assistant professorship without tenure track (Ref: Bachelor)	-0.073	-0.071	-0.060
	(0.045)	(0.046)	(0.043)
Assistant professorship with tenure track (Ref: Bachelor)	-0.120*	-0.115*	-0.098
	(0.063)	(0.063)	(0.063)
Research associate (Ref: Bachelor)	0.013	0.015	0.018
	(0.014)	(0.014)	(0.013)
Male stereotype	-0.015***		
	(0.005)		
Female#Male stereotype	0.012*		
	(0.007)		
Female stereotype		0.003	
		(0.005)	
Female#Female stereotype		0.014**	
		(0.007)	
Support for gender equality			-0.019***
			(0.003)
Female#Support for gender equality			-0.000
			(0.003)
Constant	0.355***	0.292***	0.346***
	(0.020)	(0.019)	(0.008)
Observations	7,171	7,141	7,334
R-squared	0.441	0.442	0.449

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A3. Self-Selection: Gender norms transmitted through socialization.

Y: Women's share in the chosen study field	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.096***	0.095***	0.098***	0.105***	0.110***	0.127***
	(0.016)	(0.015)	(0.012)	(0.009)	(0.029)	(0.012)
Affiliated with UZH	0.241***	0.240***	0.242***	0.243***	0.242***	0.242***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Own income/wealth	-0.007***	-0.006**	-0.008***	-0.007***	-0.008***	-0.007***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Presence of children	0.059***	0.054***	0.060***	0.055***	0.060***	0.056***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Living in partnership	0.006	0.008**	0.007*	0.009**	0.007	0.009**
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Master student (Ref: Bachelor)	-0.026***	-0.026***	-0.027***	-0.026***	-0.027***	-0.026***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
PhD student (Ref: Bachelor)	-0.020***	-0.022***	-0.020***	-0.023***	-0.020***	-0.022***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Postdoc (Ref: Bachelor)	-0.021	-0.024*	-0.022	-0.024*	-0.021	-0.023*
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Assistant professorship without tenure track (Ref: Bachelor)	-0.085*	-0.078*	-0.083*	-0.079*	-0.082*	-0.076*
	(0.048)	(0.045)	(0.048)	(0.046)	(0.048)	(0.045)
Assistant professorship with tenure track (Ref: Bachelor)	-0.126**	-0.119*	-0.104	-0.123*	-0.119*	-0.117*
	(0.063)	(0.063)	(0.068)	(0.063)	(0.063)	(0.063)
Research associate (Ref: Bachelor)	0.015	0.013	0.013	0.011	0.013	0.012

	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.013)
Education level father	-0.007***					
	(0.002)					
Female#Education level father	0.001					
	(0.003)					
Education level mother		-0.007***				
		(0.002)				
Female#Education level mother		0.002				
		(0.003)				
Career orientation father			-0.006**			
			(0.003)			
Female#Career orientation father			0.002			
			(0.003)			
Career orientation mother				-0.003		
				(0.003)		
Female#Career orientation mother				-0.000		
				(0.003)		
Reduction working time father					-0.006	
					(0.005)	
Female#Reduction working time father					0.001	
					(0.006)	
Reduction working time mother						0.003
						(0.003)
Female#Reduction working time mother						0.007**
						(0.004)
Constant	0.349***	0.347***	0.326***	0.311***	0.316***	0.295***
	(0.013)	(0.012)	(0.010)	(0.009)	(0.022)	(0.010)
Observations	6,525	6,917	6,693	7,036	6,765	7,124
R-squared	0.439	0.441	0.439	0.440	0.439	0.441

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table A3 (continuation). Self-Selection: Gender norms transmitted through socialization.

Y: Women's share in the chosen study field	(7)	(8)	(9	(10)	(11)	(12)
Female	0.109***	0.110***	0.103***	0.105***	0.102***	0.073***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.015)
Affiliated with UZH	0.243***	0.243***	0.243***	0.243***	0.243***	0.243***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Own income/wealth	-	-	-	-	-	-0.006**
	0.006***	0.006***	0.006***	0.006***	0.006***	
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Presence of children	0.054***	0.054***	0.054***	0.054***	0.054***	0.056***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Living in partnership	0.008*	0.008*	0.008*	0.008*	0.008*	0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Master student (Ref: Bachelor)	-	-	-	-	-	-
	0.026***	0.025***	0.026***	0.026***	0.026***	0.027***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
PhD student (Ref: Bachelor)	-	-	-	-	-	-
	0.024***	0.023***	0.024***	0.024***	0.024***	0.024***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Postdoc (Ref: Bachelor)	-0.022	-0.020	-0.021	-0.021	-0.021	-0.022*
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Assistant professorship without tenure track (Ref: Bachelor)	-0.078*	-0.076*	-0.078*	-0.078*	-0.079*	-0.081*
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.045)
Assistant professorship with tenure track (Ref: Bachelor)	-0.124**	-0.127**	-0.126**	-0.125**	-0.125**	-0.122*
	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)

Research associate (Ref: Bachelor)	0.012	0.012	0.011	0.012	0.012	0.012
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Raised with siblings	-0.005	-	-	-	-	
		0.017***	0.019***	0.020***	0.021***	
	(0.008)	(0.005)	(0.005)	(0.005)	(0.005)	
Raised with siblings#Female	-0.025**					
	(0.011)					
Raised with older brothers		0.021***				
		(0.007)				
Female#Raised with older brothers		-0.019**				
		(0.009)				
Raised with younger brothers			-0.002			
			(0.006)			
Female#Raised with younger brothers			0.007			
			(0.008)			
Raised with older sisters				-0.004		
				(0.007)		
Female#Raised with older sisters				0.002		
				(0.009)		
Raised with younger sisters					-0.011*	
					(0.007)	
Female#Raised with younger sisters					0.012	
					(0.009)	
Parents' income/wealth						-0.006*
						(0.003)
Female#Parents' income/wealth						0.010**
						(0.004)
Constant	0.304***	0.301***	0.307***	0.307***	0.310***	0.323***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.012)
Observations	7,334	7,334	7,334	7,334	7,334	7,253
R-squared	0.440	0.441	0.440	0.440	0.440	0.438

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table A4a. Self-Selection: Gender norms and the choice of partners for people with life partners.

VARIABLES	(1) Age gap partner	(2) Man higher income/wealth	(3) Partner higher promotion prospects	(4) Job mobility partner
Women's share in the chosen study field	-1.112**	-0.230*	0.613***	0.630
	(0.455)	(0.127)	(0.152)	(0.759)
Female	1.887***	-0.534***	0.716***	0.023
	(0.287)	(0.080)	(0.096)	(0.499)
Female#Women's share in the chosen study field	1.580***	0.332**	-0.464***	0.058
	(0.546)	(0.152)	(0.183)	(0.921)
Affiliated with UZH	0.045	0.028	-0.011	-0.077
	(0.144)	(0.040)	(0.048)	(0.235)
Own income/wealth	-0.150**	0.065***	-0.068	-0.022
	(0.067)	(0.019)	(0.022)	(0.111)
Presence of children	0.656***	0.171***	0.236***	-0.863*
	(0.239)	(0.066)	(0.079)	(0.481)
Master student (Ref: Bachelor)	0.136	0.007	0.056	0.045
	(0.127)	(0.036)	(0.043)	(0.214)
PhD student (Ref: Bachelor)	0.178	0.087*	0.235***	0.354
	(0.169)	(0.047)	(0.057)	(0.260)

Postdoc (Ref: Bachelor)	0.314	0.060	0.175*	0.484
	(0.305)	(0.085)	(0.102)	(0.466)
Assistant professorship without tenure track (Ref: Bachelor)	0.025	-0.001	0.183	2.360***
	(0.881)	(0.249)	(0.298)	(0.856)
Assistant professorship with tenure track (Ref: Bachelor)	-1.710	0.131	-0.376	3.123**
	(1.390)	(0.392)	(0.471)	(1.310)
Research associate (Ref: Bachelor)	-0.419	0.029	0.272**	0.228
	(0.308)	(0.086)	(0.103)	(0.574)
Constant	-0.007	3.175***	2.360***	-3.500***
	(0.246)	(0.069)	(0.083)	(0.425)
Observations	3,777	3,847	3,847	3,220
R-squared	0.131	0.045	0.069	0.013

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4b. Self-Selection: Gender norms and the choice of partners for people without life partners.

VARIABLES	(1) Desired age gap partner	(2) Man should have higher income/wealth	(3) Partner should have higher promotion prospects	(4) Desired job mobility partner
Women's share in the chosen study field	-0.003	-0.284**	0.310***	-0.215
	(0.147)	(0.137)	(0.095)	(0.419)
Female	0.981***	0.395***	0.283***	0.440
	(0.097)	(0.090)	(0.059)	(0.270)
Female#Women's share in the chosen study field	0.174	0.141	-0.196*	-0.587
	(0.191)	(0.178)	(0.119)	(0.505)
Affiliated with UZH	0.119**	0.057	-0.015	1.359***
	(0.050)	(0.046)	(0.030)	(0.139)
Own income/wealth	0.021	0.165***	-0.005	0.195***
	(0.024)	(0.022)	(0.014)	(0.059)
Presence of children	-0.736***	-0.217	0.192	-0.518
	(0.227)	(0.210)	(0.135)	(0.563)
Master student (Ref: Bachelor)	-0.074*	0.076*	0.039	0.456***
	(0.045)	(0.041)	(0.028)	(0.110)
PhD student (Ref: Bachelor)	-0.295***	0.009	0.057	0.487***
	(0.082)	(0.077)	(0.052)	(0.174)
Postdoc (Ref: Bachelor)	-0.593***	0.316	0.025	0.027
	(0.225)	(0.217)	(0.136)	(0.475)
Assistant professorship with tenure track (Ref: Bachelor)	0.038	-1.460		
	(1.147)	(1.024)		
Research associate (Ref: Bachelor)	-0.251	-0.052	-0.275*	0.307
	(0.210)	(0.218)	(0.139)	(0.428)
Constant	-0.263***	1.721***	2.676***	-3.064***
	(0.074)	(0.069)	(0.047)	(0.215)
Observations	3,487	3,233	3,487	3,486
R-squared	0.195	0.062	0.055	0.068

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1