

Zöllner, Thea S.

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# Are parents an obstacle to gender-atypical occupational choices?

Stefan C. Wolter<sup>1,2,3,4,5</sup>  · Thea S. Zöllner<sup>1</sup>

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## Abstract

Despite numerous measures intended to enhance gender equality, gender-specific study and career choices remain a persistent concern for policymakers and academics globally. We contribute to the literature on gendered career choices by focusing on explicitly stated parental preferences for their children's occupations, using a large-scale randomized survey experiment with 5940 adults in Switzerland. Adolescents consistently name their parents as the most influential factor in career decisions, motivating the focus on parents (and hypothetical parents). In the experiment, respondents are presented with a realistic choice scenario in which they must advise on two proposed apprenticeships for their hypothetical daughter or son. The experiment randomly selects the occupations from 105 pairs, without disclosing their gender distribution. Results show that adults are gender neutral when advising a daughter but have a pronounced preference for male-dominated occupations when advising sons. The latter are found across all ages of adults and for parents and non-parents.

**Keywords** Gender · Occupational choice · Career advice · Vocational education

**JEL Classification** J24 · J16

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✉ Stefan C. Wolter  
stefan.wolter@unibe.ch  
  
Thea S. Zöllner  
thea.zoellner@unibe.ch

- <sup>1</sup> Department of Economics, University of Bern, Schanzeneckstrasse 1, 3001 Bern, Switzerland
- <sup>2</sup> Swiss Coordination Center for Research in Education, Aarau, Switzerland
- <sup>3</sup> CESifo, Munich, Germany
- <sup>4</sup> Global Labor Organization, GLO, Maastricht, Netherlands
- <sup>5</sup> IZA, Institute for Labor Market Research, Bonn, Germany

## 1 Introduction

Gender-specific career and study choices have preoccupied politicians and academics for several decades and have led to a practically innumerable number of initiatives, programs, and studies. These initiatives and programs generally aim to achieve a balanced gender distribution in study subjects and occupations, while also seeking to attract women to STEM fields, which are considered promising and more financially rewarding (e.g., Black et al. 2021; Carlana and Fort 2022; Del Carpio and Guadalupe 2022; Hegewisch et al. 2010; Kirkeboen et al. 2016). The academic literature on gendered career choices identifies a multitude of determinants, e.g., skills, personality traits, and social environment (e.g., Buser et al. 2017; Tungodden and Willén 2023), making it illusory to expect a single initiative to bring about significant changes.

In this article, we examine a specific determinant that can encourage or discourage gender-specific career and subject choices and has not received the same attention in the past as other potential factors: parents. We investigate whether parents provide gender-blind career advice or whether parents introduce obstacles when their child wants to pursue a gender-atypical occupation. Using a large-scale survey experiment in Switzerland involving almost 6000 adults, we analyze the advice parents provide to their daughters or sons regarding which vocational education and training occupation their children should opt for. We use a hypothetical decision-making situation in the experiment, in which adults, hereafter referred to as parents, give advice. Although this situation is highly realistic for the respondents, there is still the potential limitation that the decisions “in the lab” could not always correspond to decisions in the real world. However, various studies with choice experiments have shown that these can be very well suited for breaking open the black box of decisions and gaining insights that help to better understand real decisions (e.g., Combet 2024; Quaife et al. 2018), given the advantage that the experimental setting enables causal statements.

We focus on parents for two reasons. First, parents play an important role in study and career decisions from early childhood to adolescence, either indirectly as role models or directly through advice and recommendations (e.g., Brenøe and Rutnam 2025; Carlana and Corno 2024; Eccles et al. 1990; Müller 2022; Polavieja and Platt 2014; Tandrayen-Ragoobur and Gokulsing 2021).<sup>1</sup> Second, and this is specific to our empirical setting in Switzerland, career choice decisions of two-thirds of an age cohort who opt for an apprenticeship take place at an age at which the adolescents themselves cannot sign the employment and training contract with the training company. In other words, parents have a de facto right of co-decision or veto when their children choose an apprenticeship.

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<sup>1</sup> The Swiss State Secretariat for Education, Research and Innovation monitors annually the educational choices of students at the end of compulsory schooling with a survey of a representative sample of school-leavers. Among other things, these young people are also asked to rank the most important people who influenced their career choice. Parents consistently rank first every year, followed by teachers, classmates, and other groups of people (see, e.g., Gfs 2023).

In a nutshell, the survey experiment used here is as follows: the adult respondents must decide from a random pair of occupations which of the two occupations they would recommend to a son or daughter. Respondents see one pair of occupations from a pool of 105 random pairs of occupations, each pair consisting of one male-dominated and one female-dominated occupation. However, the respondents are not informed about the gender distribution in the two occupations. While parents give advice to hypothetical sons or daughters, the decision-making situation for adults in Switzerland is a very realistic situation that a large majority of respondents have been, are, or will be confronted with. The career decision is high-stakes given that over a span of 3 or 4 years, students invest not only in learning general skills but also in job-specific skills.

The paper contributes to two different but related strands of literature. First, it contributes to the literature on the determinants of gender-stereotypical choices. A large literature on occupational and educational choice determinants examines gender differences in innate abilities, comparative advantage or preferences (e.g., Baron-Cohen 2005; Breda and Napp 2019; Kuhn and Wolter 2022), the impact of culture (e.g., Alesina et al. 2013; Guiso et al. 2008), exposure to stereotypes (e.g., Carlana 2019), and the social environment (e.g., Brenøe and Zölitz 2020; Bursztyń and Jensen 2015; Canaan and Mouganie 2023), including parents (e.g., Tungodden and Willén 2023). Addressing the persistent gender gap in educational and occupational choices (e.g., Altonji et al. 2012; Blau and Kahn 2017) and recognizing the diverse determinants of occupational choices, several empirical studies assess numerous measures and initiatives, such as girls' coding clubs and support networks (e.g., Carlana and Fort 2022; Carlana et al. 2022) or the influence of role models (e.g., Breda et al. 2023; Porter and Serra 2020). Despite some exceptions (e.g., Delfino 2024, Palfy et al. 2023), this literature has primarily focused on attracting girls to atypical occupations, particularly to STEM fields, and not attracting men to female-dominated occupations. We contribute to the literature by developing a survey experiment that allows us to measure gender bias in parental career advice both for sons and daughters.

Second, this paper contributes to the small but emerging literature concerning the impact of parental influence on the preferences and decisions of children. Parents may shape students' occupational preferences indirectly by, for instance, intercultural transmission (e.g., Doepke and Zilibotti 2017; Fontenay and González 2024; Kuhn and Wolter 2023) or directly, for instance, through adjustments of students' choices due to (perceived) parental preferences and pressure (e.g., Carlana and Corno 2024; Müller 2022). We contribute to the literature by analyzing parental advice in an experimental setting that allows us to causally investigate gender differences in parental career advice.

Our empirical results show two things. First, the preferences of fathers and mothers are only gender-stereotypical for sons, i.e., they recommend for sons the male-dominated occupation more often than the female-dominated occupation. Contrary to this, the career recommendations for daughters are almost equally divided between typical female and male occupations. Second, we find that adults are more likely to recommend the male-dominated occupation to sons rather than

to daughters. This holds for adults who are parents and those who are not or have not yet become parents and for all age cohorts of adults.

The remainder of the paper is structured as follows: In Sect. 2, we briefly describe the Swiss education system, and in Sect. 3, we describe our experimental design. In Sect. 4, we describe our data sources and present first descriptive evidence. In Sects. 5 and 6, we present our empirical approach and results. We conclude by summarizing and discussing our results in Sect. 7.

## 2 The swiss setting

In Switzerland, after completing eleven years of schooling (K+9), students have the choice to continue a 3 to 4 years post-compulsory education either in a vocational education and training program (VET) or general education, which leads to a university entrance diploma. Two-thirds of students transitioning to upper-secondary education opt for the vocational education and training path, and almost 90% of these choose a firm-based version of VET training, known as an apprenticeship (SERI 2022).

The VET system, and in our case the apprenticeship system, possesses four specific features that create an inherently ideal environment for analyzing parental career advice: First, students pursuing an apprenticeship can choose from a large variety of around 240 occupations, occupations that vary in their aggregate and skill-specific (mathematics, science, school language, foreign language) cognitive requirements. The large variety of occupations accommodates students with diverse academic performances across all fields of study.

Second, as in other countries, the Swiss apprenticeship market is shaped by strong gender-typical occupational choice (SCCRE 2023). That is, women are typically underrepresented in STEM occupations, more specifically in math-intensive occupations, and men are underrepresented in health, services, and social work.

Third, parents exert substantial influence over their children, and given the children's young age when deciding on an apprenticeship (Gfs 2023). Parents legally must sign the apprenticeship contract of their underage children, providing parents with a veto right. Parents' influence is aligned with the fact that children often confront their parents with specific ideas/preferences before asking for their advice. This is because children are exposed to information campaigns and career choice preparation in school and outside of school, e.g., career fairs (Goller et al. 2025).

Fourth, adolescents realistically receive several training offers for different occupations. Career counseling is mandatory in schools, providing students with possibilities to get to know different apprenticeships and get in touch with prospective employers. Prospective apprentices usually visit career fairs and do trial apprenticeships before deciding on a specific occupation and employer. Because, for several years now, the number of open training places has exceeded demand, a substantial number of adolescents even report having been offered a training place by an employer without having formally applied for it (Gfs 2023). Regardless of the

important role that parents play in the decision-making process of young people, it is therefore quite realistic that a daughter or son will come home with one or more training offers that have come about through one of these channels (career guidance, careers fairs, or trial apprenticeships) before having consulted with their parents.

### 3 Experimental design

Our goal is to study whether parents give gender-blind career advice to their children or whether parents introduce obstacles when their children want to pursue an atypical occupation. To causally analyze the effect of a child's gender on parental career advice, participants give occupational advice in a hypothetical parent-child scenario. Specifically, parents advise their daughter or son on which vocational education training their child should opt for, i.e., which occupation/apprenticeship their child should learn. We introduce exogenous variation in the gender of the respondents' (hypothetical) child, as well as in the child's career choices. First, participants are randomized at the individual level into two groups: (1) group 1 is assigned to a hypothetical female child, and (2) group 2 is assigned to a hypothetical male child. We stratify randomization on gender, language region, and age. Second, participants are presented with a random draw of two occupations (job offers of their hypothetical child), always including one female-dominated occupation and one male-dominated occupation. Both occupations are similar in their aggregate cognitive skill requirements (mathematics, science, foreign language, school language).

Prior to giving advice, respondents receive the information (see Appendix B) that their son or daughter has applied for various apprenticeships and has been accepted for two positions in companies of comparable quality. Both occupations require similar cognitive requirements, and the child expresses equal interest and feels equally well-prepared for both apprenticeships. Importantly, one apprenticeship is female-dominated, and the other is male-dominated. However, we deliberately withhold information regarding which occupation falls into each category.

Our design has four distinct methodological advantages: First, our choice question, closely mirroring the transition from compulsory schooling to apprenticeship, is realistic and widely known among Swiss residents: Given the prominent role of apprenticeships in the Swiss labor market (Gfs 2023; SERI 2022), the choice question is arguably familiar to respondents, both those with and without children. Approximately two-thirds of parents find themselves in a situation in which their child pursues an apprenticeship, seeking advice, and, potentially, requiring them to sign the apprenticeship contract. Furthermore, most parents and nonparents have experienced the same situation with their parents during their own adolescence.

Second, the setting allows us to analyze career advice patterns of a representative sample of the Swiss population (language regions, age, sex) and across almost the complete spectrum of gender-stereotypical occupations, for instance, in terms of educational field, skill requirements, type of work, and degree of familiarity. We include 118 female- (female share greater than 59%) and male-dominated (female

share lower than 41%) occupations and randomly create 105 choice pairs.<sup>2</sup> Each occupation pair consists of one female-dominated and one male-dominated occupation with similar overall cognitive requirements.<sup>3</sup>

Third, our sample includes both respondents with and without children. By including respondents with and without children, we can analyze a broader picture of career advice. Including respondents who do not (yet) have children allows us to include what respondents would advise their child in the future, while respondents with children may potentially rationalize past choices they made for their children.

Fourth, we actively choose to mirror the scenario in which children seek advice after applying for an occupation, as opposed to the prior stage of exploring various occupational options. Consequently, our selected setting facilitates the examination of whether parents might actively introduce obstacles into their child's path when pursuing gender-atypical occupations.

## 4 Data

Conducted by a survey institute, around 6000 respondents aged between 25 and 60 took part in the online survey experiment between September and October 2023. The choice question was part of a bigger survey including questions about respondents' characteristics such as their political affiliation, subjective measures of perceived gender inequality, and gender norms and personality traits, including risk attitude, long-term perspective, and gender identity (see Appendix, Table A1).<sup>4</sup>

The respondents are representative for the country in terms of language regions, age, and sex. Tables 1 and 2 report summary and balance statistics of the survey data. The gender of the respondents is perfectly balanced with 50% men and 50% women. Column 2 shows the means for respondents who were assigned a hypothetical son, and column 3, respectively, shows the mean values for respondents with a hypothetical daughter. Column 4 reports *p*-values for the two-sided test of equivalence in means (sons/daughters). The sample is well balanced with respect to the distribution of respondents to hypothetical sons and daughters (see Table 1). Of sixteen different characteristics of the respondents, we find a difference at the 5%

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<sup>2</sup> We include all apprenticeships for which we have data on the cognitive skill requirements. We exclude occupations with a female share between 41 and 59%. Given that this choice is somewhat arbitrary, we check whether the results hold for different thresholds (see Table 2).

<sup>3</sup> An example for an occupation pair with very high cognitive requirements consists of the male-dominated occupation of *Physical Laboratory Technician* and the female-dominated occupation of a *Certified Social Care Worker*. For occupations with lower requirements, an example of a pair is a *plumber* as the male-dominated occupation and a *dental assistant* as the female-dominated occupation.

<sup>4</sup> We follow Brenøe et al. (2022) to measure gender identity. We use commonly used measures for risk aversion ("Generally speaking, are you a person who is willing to take risks or do you try to avoid risks?" 1 (not at all willing to take risks) to 11 (very willing to take risks)) and for time preference, which we refer to as long-term perspective ("Are you a person who is generally willing to give up something today in order to benefit from that in the future?" 1 (not willing at all) to 11 (very willing to do so)) (see Falk et al. 2023). The original scale for the former variables was from 0 to 10. Political orientation is measured on a scale from 1 (very left) to 11 (very right) as in Abrassart and Wolter (2023).

**Table 1** Descriptives and balancing table for gender treatment: respondents' characteristics

Variable	Full sample	Sons	Daughters	<i>p</i> -value
Male	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.94
German-speaking CH	0.71 (0.45)	0.71 (0.45)	0.71 (0.45)	0.77
French-speaking CH	0.25 (0.43)	0.25 (0.43)	0.25 (0.43)	0.85
Italian-speaking CH	0.04 (0.20)	0.04 (0.20)	0.04 (0.20)	0.86
Has children	0.52 (0.50)	0.53 (0.50)	0.51 (0.50)	0.09
Age	43.12 (10.23)	43.12 (10.22)	43.13 (10.24)	0.88
Swiss-born	0.72 (0.45)	0.71 (0.45)	0.72 (0.45)	0.30
VET education	0.66 (0.47)	0.65 (0.48)	0.66 (0.47)	0.26
General education	0.27 (0.44)	0.28 (0.45)	0.27 (0.44)	0.14
Other education	0.07 (0.26)	0.07 (0.25)	0.07 (0.26)	0.61
Political affiliation	6.06 (2.42)	6.13 (2.40)	6.00 (2.43)	0.03
Risk attitude	5.96 (2.22)	5.95 (2.23)	5.96 (2.21)	0.62
Long-term perspective	7.94 (2.00)	7.91 (2.02)	7.97 (1.99)	0.15
Gender identity, own perception	4.10 (1.89)	4.08 (1.91)	4.11 (1.86)	0.75
Gender identity, others	4.11 (1.84)	4.09 (1.85)	4.13 (1.83)	0.60
Perception women disadvantage	7.23 (2.75)	7.28 (2.74)	7.19 (2.75)	0.68
Observations	5940	2969	2971	

*Notes:* Mean values of respondents' characteristics. Population weights applied. Column 4 reports *p*-values for the two-sided test of equivalence in means (son/daughters) for the unweighted sample. *D-CH*, German speaking; *W-CH*, French-speaking; *I-CH*, Italian-speaking Switzerland. *Political affiliation* is measured from 1 (left-wing) 11 (right-wing). *Risk attitude* varies between 1 (not at all willing to take risks) to 11 (very high willingness to take risks), similar for *long-term perspective* 1 (not willing at all to give something today to profit in future) to 11 (very much willing to give something today to profit in future). *Gender identity, own* (how do you see yourself) and *gender identity, other* (how do others see you) measure respondents' gender identity and range from 1 (very masculine) to 7 (very feminine). *Perception women disadvantage* measures respondents' view on how disadvantaged women in Switzerland are in certain areas of life and ranges from 1 (not disadvantaged at all) to 11 (very strongly disadvantaged). Standard deviations are in parentheses

significance level only for political orientation. Since we control for all characteristics in the regressions, there should be no biases resulting from the division of the sample into hypothetical sons and daughters.

To create occupation pairs that are equally demanding in their cognitive skills, we use a composite index of cognitive skill requirements in school language, foreign language, science, and mathematics. For each occupation and within each category, skills range from a scale between 1 and 100, where 1 is the least demanding and 100 the most demanding.<sup>5</sup>

Furthermore, we supplement our survey data with median monthly salary (BFS 2025; Lohnanalyse 2025; Lohnrechner 2025), and with Federal Statistical Office data on occupational characteristics (female share and entrants) (BFS 2022a), as well as on common occupational identifiers and ISCED domains, domains we use

<sup>5</sup> <https://www.anforderungsprofile.ch>; We thank Dr. Walter Götze for providing us with the raw data describing the cognitive requirements of the various occupations.

**Table 2** Descriptives and balancing table for gender treatment: occupational characteristics

Variable	Full sample	Sons	Daughters	<i>p</i> -value
Entrants share fem. occ	0.51 (1.11)	0.52 (1.12)	0.50 (1.10)	0.84
Entrants share male occ	0.45 (0.68)	0.45 (0.68)	0.45 (0.67)	0.81
Male occ. first (rand)	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	1.00
Math requirements male occ	45.48 (15.60)	45.49 (15.66)	45.47 (15.54)	0.82
Math requirements fem. occ	26.53 (16.39)	26.46 (16.34)	26.60 (16.45)	0.78
<i>Educational field of female-dominated occupation</i>				
Business, administration	0.14 (0.34)	0.14 (0.34)	0.13 (0.34)	0.95
Manufacturing, processing, agriculture, forestry	0.23 (0.42)	0.23 (0.42)	0.23 (0.42)	0.84
Health, welfare, veterinary	0.13 (0.34)	0.13 (0.34)	0.14 (0.34)	0.77
Services	0.16 (0.37)	0.16 (0.37)	0.16 (0.37)	0.72
Arts and other	0.34 (0.47)	0.34 (0.47)	0.34 (0.47)	0.84
<i>Educational field of male-dominated occupation</i>				
STEM	0.69 (0.46)	0.68 (0.46)	0.69 (0.46)	0.90
Manufacturing, processing, agriculture, forestry	0.22 (0.41)	0.22 (0.41)	0.22 (0.41)	0.91
Services	0.07 (0.25)	0.07 (0.25)	0.07 (0.25)	0.83
Arts and other	0.03 (0.17)	0.03 (0.17)	0.03 (0.17)	0.82
Observations	5940	2969	2971	

*Notes:* Mean values of occupational characteristics. Column 4 reports *p*-values for the two-sided test of equivalence in means (son/daughters) for the unweighted sample. The educational fields are defined with the help of the ISCED Fields of Education and Training 2013 classification. Standard deviations are in parentheses. Population weights applied

to classify the education fields of the male- and female-dominated occupations (BFS 2022b, 2024).

## 5 Results

In Sect. 5.1, we first show descriptive evidence, followed by detailed information on our empirical approach in Sect. 5.2. In Sect. 5.3, we first analyze whether the recommendations differ by the gender of the hypothetical child as well as whether the recommendations differ across occupations with different characteristics. Second, we analyze variations in recommendations among surveyed adults based on personal characteristics. Specifically, we examine interaction effects between the gender of the hypothetical child and the respondents' characteristics in Sect. 5.4.

## 6 Descriptive results

Table 3 shows how many respondents advise their sons/daughters to learn the female- and male-dominated occupations in percent. Parents recommend sons less often the female-dominated occupation (39.7%) compared to daughters (48.7%), and, respectively, respondents recommend less often a male-dominated occupation to daughters

**Table 3** Career advice by gender of child

	Career advice (%)	
	Female-dominated occupation	Male-dominated occupation
Son	39.66	60.34
Daughter	48.70	51.30

*Notes:* Observations: 2971 daughters; 2969 sons. The table shows the share of respondents who advise their sons/daughters to learn the female- or male-dominated occupation. Sons are recommended the male-dominated (female-dominated) occupation significantly more (less) often than expected under an equal split across the two occupations (one-sample test of proportion,  $H_a$ : proportion  $\neq 0.5$ ,  $p < 0.01$ ). Daughters are recommended the male-dominated (female-dominated) occupation insignificantly more (less) often than expected under an equal split across the two occupations (one-sample test of proportion,  $H_a$ : proportion  $\neq 0.5$ ,  $p > 0.1$ ). Population weights applied

(51.3%) compared to sons (60.3%). While respondents recommend sons more often the male-dominated occupation (60.3%) compared to the female-dominated occupation (39.7%), respondents nearly equally often recommend the female- (48.7%) or the male-dominated (51.3%) occupation to daughters. These results suggest that parental career advice is gendered only for boys but not for girls.

### 7 Empirical strategy

To assess the impact of the child’s gender on parental career advice, we estimate the following OLS regression:

$$OccAdvice_i = \alpha_0 + \alpha_1 GenderChild_i + X_i + \epsilon_i$$

where  $OccAdvice_i$  is a dummy variable equal to zero if respondent  $i$  recommends the female- dominated occupation and equal to one if the respondent recommends the male-dominated occupation.  $GenderChild_i$  is the gender of the hypothetical child and is zero if respondents advise a daughter and one if respondents advise a son.  $X_i$  are control variables, including respondents’ characteristics, occupational characteristics, and the order of display of the occupation options.  $\epsilon_i$  is an error term. We estimate robust standard errors and apply population weighting, given that the Italian-speaking language region was oversampled in our survey sample.

### 8 Child gender, occupational, and respondents’ characteristics

The main results of our experiment are presented in Table 4. The result in column 2 suggests that having a son as opposed to a girl increases the probability of parents recommending a male-dominated occupation by 9 percentage points, like the

averages presented in Table 3. Our results are, therefore, robust to including various controls. For instance, although showing the male-dominated occupation first increases the probability of recommending male-dominated occupations, the randomization order does not affect the coefficient of interest  $\alpha_1$ . Given that further differences in occupations or respondents' characteristics could explain differences in gendered occupational advice, we test a series of other specifications. Salary is

**Table 4** Parental career advice

	Full sample		Split sample	
	(1)	(2)	Son (3)	Daughter (4)
Son	0.090*** (0.013)	0.090*** (0.013)		
<i>Respondents' characteristics</i>				
Male		0.046*** (0.013)	0.047** (0.019)	0.042** (0.019)
Has children		0.004 (0.014)	0.023 (0.019)	-0.017 (0.020)
41–50 years		0.001 (0.017)	-0.002 (0.023)	-0.001 (0.024)
51–60 years		-0.020 (0.016)	-0.019 (0.023)	-0.019 (0.023)
<i>Occupational characteristics</i>				
Share entrants female occupation		0.009 (0.008)	0.010 (0.011)	0.008 (0.011)
Share entrants male occupation		0.071*** (0.010)	0.065*** (0.014)	0.077*** (0.014)
<i>Other</i>				
Male-dominated occ. first		0.034** (0.013)	0.023 (0.018)	0.043** (0.019)
Constant	0.513*** (0.010)	0.147* (0.079)	0.076 (0.111)	0.303*** (0.114)
Controls: Respondents	No	Yes	Yes	Yes
Controls: Occupation	No	Yes	Yes	Yes
Observations	5940	5940	2969	2971

*Notes:* Columns (1) and (2) present the estimation results of having a son as opposed to a girl on parental career advice. The dependent variable career advice is zero if parents recommend the female-dominated occupation and one for the male-dominated occupation. Column (3) and (4) present split samples: (3) boys and (4) girls. Control variables include respondents' characteristics (political affiliation, language region, Swiss-born, highest education) and characteristics of the occupations (quintile of overall cognitive requirement, educational field, share of females in the occupation). The baseline age category is 25–40. Robust standard errors are in parentheses. The sample is weighted with population weights. Significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . The statistically significant coefficients for the variables "male," "share of entrants male occupation," and "male-dominated occ. first" are not statistically significant different between the split samples

**Table 5** Career advice by gender of child and gender of respondent

	Female-dominated occupation	Male-dominated occupation	Observations
A: Career advice of fathers (%)			
Son	37.46	62.54	1488
Daughter	46.70	53.30	1492
B: Career advice of mothers (%)			
Son	41.89	58.11	1481
Daughter	50.73	49.27	1479

one of the most obvious reasons for recommending one profession over another. However, differences in monthly salaries do not explain the gendered career advice. While an increase in the difference in monthly salary favoring the male-dominated occupation increases the probability of advising the male-dominated occupation, the effect is not robust to including controls (see Appendix, Table A4). Furthermore, we find socially stable preferences; that is, respondents with children do not differ qualitatively in their responses from respondents without children (see Table 4, column 2),<sup>6</sup> and we find no effect of age on gendered occupational advice (see Table 4 and Appendix Table A3). Finally, when we use the various variables on non-cognitive skills (risk and time preference), on social assessments (discrimination) and self-assessments (gender identity) and political attitudes as controls, we see (Appendix Table A1) that the preference for recommending male-dominated occupations to sons does not change.

Parental recommendations are, however, partially influenced by specific occupational characteristics. For our analyses, we use occupations with varying levels of familiarity and popularity among students, as indicated by the share of entrants in both the male-dominated and female-dominated occupations. We find that while the share of entrants of the female-dominated occupation does not significantly affect the career advice of the hypothetical parents, more frequently chosen male-dominated occupations increase the probability that respondents recommend the male-dominated occupation both to sons and daughters (see Table 4, columns 3, 4).

## 9 Interaction effect of child's gender with parents' gender and education

Both mothers and fathers give gendered occupational advice. Mothers and fathers recommend more often the male-dominated occupation to sons (see Table 5). Fathers recommend the male-dominated occupation significantly more often to

<sup>6</sup> The interaction effect between gender of the hypothetical child and the indicator variable whether respondents have children is statistically significant at the 10% level (see Appendix, Table A3), indicating that the preference for a male-dominated job for a son is somewhat more pronounced for respondents who are actual parents.

sons and daughters, whereas mothers nearly equally often recommend the male- and female-dominated occupation to daughters.

Furthermore, our results suggest that parents' education significantly affects the advice they provide. Parents with vocational education recommend the female-dominated occupation less often to sons than to daughters; parents with general education recommend the male-dominated occupation as opposed to the female-dominated occupation more often to both daughters and sons (see Table 6). While parents with vocational education give highly gender-biased recommendations, parents with general education do not discriminate between sons and daughters (see Table 7, column 2).

*General notes:* The table shows the share of respondents who advise their sons/daughters to learn the female- or male-dominated occupation for fathers (A) and mothers (B) separately. Population weights applied.

*General notes:* The table shows the share of respondents with (A) vocational education, (B) general education, (C) upper secondary level education, or (D) tertiary education who advise their sons/daughters to learn the female- or male-dominated occupation. Population weights applied.

## 10 Cultural differences and external validity

Switzerland differs in many ways from other countries, which must be considered when interpreting our results. Switzerland differs from other countries in that its labor market has a fairly high degree of gender segregation in career choices (see, e.g., Hupka-Brunner and Meyer 2023b; SCCRE 2023; Schwiter et al. 2014). Additionally, on average a higher proportion of adolescents (ages 15–19) enter vocational programs compared to the OECD average (OECD 2023, p. 145), with evidence

**Table 6** Career advice by gender of child and respondents' education

	Female-dominated occupation	Male-dominated occupation	Observations
A: Parents with vocational education (VET) (%)			
Son	37.74	62.26	1915
Daughter	49.43	50.57	1958
B: Parents with general education (%)			
Son	44.67	55.33	860
Daughter	46.55	53.45	809
C: Parents with upper secondary education (%)			
Son	38.09	61.91	1514
Daughter	50.60	49.40	1493
D: Parents with tertiary education (%)			
Son	41.95	58.05	1261
Daughter	46.21	53.79	1274

*Notes D:* Observations: daughters, sons

**Table 7** Parental gender and education

	Parental gender	Parental education
	(1)	(2)
Son	0.085*** (0.019)	0.019 (0.025)
<i>Parental gender</i>		
Male	0.040** (0.019)	0.044*** (0.014)
Son × male	0.010 (0.026)	
<i>Parental education</i>		
VET education		-0.031 (0.022)
Son × VET education		0.097*** (0.030)
Constant	0.150* (0.080)	0.194** (0.083)
Controls: Respondents	Yes	Yes
Controls: Occupation	Yes	Yes
Controls: Other	Yes	Yes
Observations	5940	5542

*Notes:* The table presents the estimation results of having a son as opposed to a girl on parental career advice. Career advice is zero if parents recommend the female-dominated occupation, one for the male-dominated occupation. Column 2 presents the interaction of parents with VET vs. general education and the gender of the child. Control variables include respondents’ characteristics (age, political affiliation, language region, Swiss-born, having children, highest education), characteristics of the occupations (quintile of overall cognitive requirement, field of education of the female and male occupation, entrants share as well as share of females in the female and male occupation), and others (order of display). Robust standard errors are in parentheses. The sample is weighted with population weights. Significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

suggesting that the high prevalence of vocational training can actually reinforce gender-stereotypical occupational choices (Hupka-Brunner and Meyer 2023a). As a result of the Swiss apprenticeship system, parents must advise and support their children in career choices at a somewhat younger age; although in some regions, apprentices are up to four years older when entering an apprenticeship compared to the regions with the youngest entry age.

To assess the generalizability of our findings, we use Switzerland’s three geographically distinct German, French, and Italian-speaking regions, which differ considerably in social norms, labor markets, and apprenticeship take-up. This regional variation enables us to evaluate whether our results are transferable to other countries with significant limitations or have broader applicability. We address concerns that our results are limited to the Swiss particularities regarding (i) Switzerland’s

**Table 8** Cultural differences (Swiss language regions)

	D-CH	W-CH	I-CH
	(1)	(2)	(3)
Son	0.091*** (0.016)	0.076*** (0.026)	0.174*** (0.032)
Constant	0.157 (0.097)	0.095 (0.155)	-0.247 (0.189)
Controls: Respondents	Yes	Yes	Yes
Controls: Occupation	Yes	Yes	Yes
Controls: Other	Yes	Yes	Yes
Observations	3562	1493	885

*Notes:* The table presents the estimation results of having a son as opposed to a girl on parental career advice by language region. *D-CH*, German-speaking; *W-CH*, French-speaking; *I-CH*, Italian-speaking Switzerland. Career advice is zero if parents recommend the female-dominated occupation, one for the male-dominated occupation. Control variables include respondents' characteristics (age, gender, political affiliation, Swiss-born, having children, highest education), characteristics of the occupations (quintile of overall cognitive requirement, field of education of the female and male occupation, entrants share as well as share of females in the female and male occupation), and others (order of display). Robust standard errors are in parentheses. The sample is weighted with population weights. Significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

high degree of gender segregation compared to other countries and (ii) the country's unique apprenticeship uptake. Not only do occupational segregation (see SCCRE 2023) and social gender norms (see Kuhn and Wolter 2023) exhibit significant regional differences along the language divide, but so does the importance of vocational education and training. The Duncan Segregation Index for occupational segregation, as an example, differs by a factor of almost 2 between the canton with the lowest value for occupational gender segregation and the one with the highest value (SCCRE 2023). With a few exceptions between urban and rural regions, in German-speaking Switzerland, the population regards vocational education and training as the preferred choice for post-compulsory education, even more so than in neighboring countries like Germany and Austria. In contrast, vocational training is less prevalent in French- and Italian-speaking Switzerland compared to France and Italy. For example, in the French-speaking regions Geneva and Vaud, only 4% and 17% of school leavers, respectively, enter apprenticeships after compulsory schooling. In Ticino (the Italian-speaking region) 24% of school leavers pursue apprenticeships, while in German-speaking Switzerland, apprenticeship take-up can exceed 70% (SCCRE 2023).

To test whether our results are transferable to other countries with significant limitations or whether they are more broadly applicable, we subdivided the main analyses in Table 8 by the three language regions. We find that the preference for recommending male-dominated occupations to sons is pronounced in all three language regions. The preference for male-dominated occupations for sons is even

more pronounced in Italian-speaking Switzerland than in German-speaking Switzerland. We thus argue that recommending male-dominated occupations to sons is prevalent in all regions and even in regions with a lower apprenticeship take-up as well as regions with less occupational gender segregation. Given the significant variation observed across Switzerland in terms of the prevalence of apprenticeships and gender norms, this implies that our results may extend beyond the Swiss context, recognizing that this does not imply complete external validity to other places or time periods, as preferences may change over time as well.

## 11 Conclusion and discussion

In this paper, we use a large-scale survey experiment with adults to investigate whether they promote gender-typical career choices when giving advice, recommendations, and counseling to their children. We investigate this experimentally for hypothetical but realistic decision situations. While the experimental setup can potentially limit the relevance of the observed behaviors for real decisions, it has the advantage that we can both abstract from retrospective rationalizations of decisions already made and, at the same time, are able to prove and disprove possible explanations for observed decision patterns.

We find that parents promote gender-typical career choices to sons only, but not to daughters. This preference for male-dominated occupations for sons is robust to the inclusion of controls for occupation characteristics such as field of education, skill requirements, popularity, and familiarity of occupations as well as salary differences. We find, however, noteworthy differences between hypothetical fathers and mothers and people with different educational levels. Fathers tend to advise male-dominated occupations more often than mothers. But as the fathers show their preference for male-dominated occupations for both sons and daughters, both mothers and fathers are almost equally likely to recommend the male-dominated occupation to sons. As far as the level of education of the respondents is concerned, we see a clear difference between those who have a vocational qualification and those who have a general education. The latter are practically gender-neutral in their advice, while the former have a pronounced preference for male-dominated occupations—especially for sons. The finding that preferences for male-dominated occupations for sons are found across age cohorts and for both parents and non-parents suggests a socially stable preference structure. This in turn may be an indication that preference structures are both difficult to break and, because of their uniformity, have a strong influence on the actual choices of young people today and in the near future. Our finding of socially stable preference structures across different adult groups therefore suggests that focusing solely on (i) young adults and (ii) women may not be sufficient to drive substantial changes in gendered occupational choices if the general population associates costs (see, e.g., Akerlof and Kranton 2000) with gender-atypical choices, or underestimates the returns men can yield in female-dominated occupations (Delfino 2024).

However, recent policy measures—by equal opportunities officers, employers' organizations, and educational institutions—have largely focused on increasing female participation in male-dominated fields, particularly STEM, due to their higher pay and growing demand for skilled workers. Measures in the other direction, namely, to attract more men to female-dominated occupations, were hardly ever promoted, although men are significantly underrepresented in many systemically critical occupations, such as those in the healthcare sector, and it is precisely in these occupations that we are facing a growing shortage of skilled workers. This means that we cannot combat the shortage of skilled workers by recruiting women for male-dominated occupations alone, nor can the equal distribution of gender in occupations be sustainably changed by this alone. Our results should be read in this context. Parents are not the general driver of an unequal distribution of gender across occupations, but if we want to achieve improvements in the equal distribution, parents and especially fathers would have to be convinced that sons can also work in female-dominated occupations.

Finally, further research is needed to address the question of the channels through which parents still recommend gender-stereotypical occupations to their sons more significantly than to their daughters, whereas they are neutral in this respect towards their daughters. Based on existing literature, it would seem reasonable to assume that parents tend to focus more on the economic value of an occupation when advising their sons than they do when advising their daughters, and vice versa, that campaigns promoting more women in male-dominated occupations have been successful. As far as the first point is concerned, we cannot conclusively answer this hypothesis, but the result that the wage difference between occupations has no significant influence on the advice given by parents is a strong indication that the economic value of the occupation is not the sole determining factor. Other factors, such as the influence of the dominance of one gender in a profession on the gender identity of the child and other possible explanations, would need to be investigated further. As far as the second hypothesis is concerned, we cannot rule it out, and we cannot prove it based on this experiment either. This means that further research is needed to address the question of the channels through which parents still recommend gender-stereotypical occupations to their sons more significantly than to their daughters.

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**Data availability** Data and replication files are available with the article.

## Declarations

**Conflict of interest** The authors declare no competing interests.

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