Occupational Segregation by Sex: The Role of Intergenerational Transmission

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Abstract

Occupational segregation by sex is a persistent feature of labor markets all around the world. I provide one perspective on why men and women continue to enter different occupations by investigating the intergenerational transmission of the sex composition of occupations using Swedish register data. I find that the more sex stereotypical the occupations of parents are, the more sex stereotypical the occupations of their children will be. The associations are stronger between children and their same-sex parent than between children and their opposite-sex parent, and stronger for sons than for daughters. I also find that the associations between children and their same-sex parent are partly accounted for by children entering the same occupation or occupation group as their same-sex parent.

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1 Introduction

Despite large changes in labor force composition during the last century, men and women still sort into different occupations (Blau et al. 2013). In the US and EU, 50 percent of all men or women would have to change occupations in order for the occupational distribution to be the same for the two groups (Blau et al. 2013, Bettio & Verashchagina 2009). Since occupational segregation by sex is a major determinant of gender differences in pay (Anker 1998, Blau et al. 2009), it is important to better understand why men and women continue to enter different occupations.

In this paper, I approach this question from an intergenerational perspective by investigating the associations between the sex composition of children's and their parents' occupations. Do daughters choose an occupation with a sex composition similar to that of their mother's occupation, while sons choose an occupation with a sex composition similar to that of their father's occupation? I also explore potential driving forces behind these associations, looking specifically at whether children enter the same occupation as their same-sex parent and the role of education and municipality of residence. Finally, I investigate how the associations vary with family structure.

I base this study on a Swedish register dataset containing detailed occupation data and rich demographic information for about 400,00 individuals (born 1943-1952) and their parents. The occupational sex segregation in the Swedish labor market accounts far a substantial part of the gender wage gap[1] and the level of occupational segregation is around the European average (Halldén forthcoming). Female labor force participation, however, has for a long time been high in Sweden relative to other countries (see e.g. Blau et al. (2009)). Consequently, focusing on gender differences in occupational choice, as opposed to gender differences in labor force participation, seems particularly relevant to understand gender differences in pay in the Swedish labor market.

Measuring the sex composition of an individual's occupation by the fraction of women in the occupation the individual had at (or around) age 40, I find positive associations

[1] In 2013, the average gender wage gap in Sweden was 11.1 percent. Controlling for age, education level, sector, industry, establishment size and whether the individual worked full time, the gender wage gap decreases to 8.4 percent. When also adding detailed occupation controls (4-digit codes), the gender wage gap is further reduced to 5.0 percent. Of the factors considered here, occupational segregation is thus the most important contributor to the gender wage gap (Swedish National Mediation Office 2014).

between the fraction of women in fathers' and sons' occupations, and between the fraction of women in mothers' and daughters' occupations. A one percentage point increase in the fraction of women in the father's (mother's) occupation, is associated with a 0.11 (0.04) percentage point increase in the fraction of women in the son's (daughter's) occupation. These results suggest that the more sex-stereotypical the occupation of the same-sex parent is, the more sex-stereotypical the occupation of the child will be: The more men in the father's occupation, the more men in the son's occupation, and, similarly, the more women in the mother's occupation, the more women in the daughter's occupation.

Further, I find negative associations between the fraction of women in children's and their opposite-sex parent's occupation. A one percentage point increase in the fraction of women in the mother's (father's) occupation, is associated with a 0.03 (0.02) percentage point decrease in the fraction of women in the son's (daughter's) occupation. These associations suggest that the more sex-stereotypical the occupation of the opposite-sex parent is, the more sex-stereotypical the occupation of the child will be: The more women in the mother's occupation, the more men in the son's occupation, and similarly, the more men in the father's occupation, the more women in the daughter's occupation. However, the associations are stronger between children and their same-sex parent than between children and their opposite-sex parent. The results also suggest that the associations are stronger for sons than for daughters: The father-son association is stronger than the mother-daughter association, and the mother-son association is stronger than the father-daughter association.

I then explore potential mechanisms behind the intergenerational associations. The positive association between the fraction of women in children's and their same-sex parent's occupation may arise because children tend to choose the same occupation or occupation group as their same-sex parent. I find that the father-son and mother-daughter associations are partly driven by children who have the same occupation or occupation group as their same-sex parent. The intergenerational associations in the sex composition of occupations may also arise because of intergenerational associations in other factors influencing the sex composition of an individual's occupation, such as education level and municipality of residence. Controlling for the education level and municipality of residence of both parents and children, I can account for all of the mother-son and father-daughter associations,

while about half of the father-son and mother-daughter associations are left unaccounted for.

Exploring the role of family structure, I find that the intergenerational associations in the sex composition of occupations do not vary systematically with the sex composition of siblings or with individuals' birth order. I also find that the association between sons and their biological father is weaker for sons living only with their mother or with their mother and a stepfather, than for sons living with both biological parents. This result suggests that the association between sons and their biological father is not only driven by genetic factors. All other parent-child associations are unaffected by whether the parent and the child lived together.

A large literature has documented intergenerational transmission of labor market outcomes such as income (Black & Devereux 2011, Björklund & Jäntti 2009, Solon 1999), education (Björklund & Salvanes 2011, Black & Devereux 2011) and socioeconomic status (Blau & Duncan 1967). In recent years, several papers have investigated the importance of intergenerational transmission for gender differences in the labor market. Most of them focus on female labor force participation. Fernández et al. (2004) show that a woman's labor supply is positively related to the labor supply of her mother in law, and provide evidence that this association is causal. In the same vein, Morrill & Morrill (2013) find a positive association between the labor supply of daughters and their mothers as well as between daughters and their mothers in law. Finally, Olivetti et al. (2013) find that a daughter's labor supply is positively related to both her mother's and her friends' mothers' labor supply. Hellerstein & Morrill (2011) study the intergenerational transmission of occupations from fathers to daughters. They find that as female labor force participation has increased, daughters have become more likely to enter their father's occupation, and fathers have increased their occupation-specific human capital transmission to their daughters. I extend this literature by focusing on the sex composition of occupations.

This paper also relates to two sociological papers attempting to estimate the causal effect of sex-role socialization in the family on labor market outcomes. Controlling for a wide range of child and family characteristics, Okamoto & England (1999) find that the fraction of women in sons' occupations is positively related to the fraction of women in both parents' occupations, while the fraction of women in daughters' occupations is

unrelated to the fraction of women in parents' occupations. Using a similar approach, but focusing only on women, Corcoran & Courant (1987) report that the fraction of women in daughters' and mothers' occupations are positively related. I complement these studies by providing a thorough descriptive analysis of how the sex composition of occupations are related across generations. The descriptive associations are particularly appealing given that the mechanisms underlying the persistence of the occupational sex segregation are still largely unknown. This paper also adds to the existing literature by using a substantially larger data set containing detailed information on occupation, family links and demographics, allowing for an analyzis of how the intergenerational associations vary across subsets of the population.

The remainder of this paper is structured as follows. I describe the data in section 2 and present the descriptive statistics in section 3. In section 4, I show the results. Finally, in section 5, I summarize the results and give some concluding comments.

2 Data

2.1 Sample

I use a combination of data sets administered by Statistics Sweden. The starting point is a 35 percent random sample of the Swedish population born between 1943 and 1952 drawn from Statistics Sweden's Multi-generational register. Through this register I identify these individuals' siblings (full-, half- and step siblings) and biological parents and add them to the sample. I restrict the siblings to be born between 1943 and 1952 and I exclude individuals who have at least one parent born before 1900.[2] After these restrictions the child generation consists of 627,629 individuals. I drop 101,909 individuals who were born abroad or have at least one parent born abroad because of limited access to occupation data for individuals born abroad. After excluding these individuals, 525,720 children remain.

For a child to be included in the analysis of the intergenerational associations in the

[2]The reason I restrict the child generation to individuals born between 1942 and 1953 and the parental generation to individuals born in 1900 at the earliest, is that the occupation data span from 1960 to 1990. Thus, I need to measure parents' occupations in the beginning of this period, and those of children at the end, and I need individuals to be neither too young nor too old when I measure their occupation.

sex composition of occupations, there needs to be data on the child's occupation and on at least one parent's occupation. I therefore exclude 76,074 individuals (33,451 men and 42,623 women) for whom there is no occupation data[3] and 9,262 individuals for whom there is missing information on both parents' occupations[4]. The final data set consists of 440,384 children (229,744 men and 210,640 women). There is information on occupation for all these children and for at least one of their parents. In the next section, I describe the occupation data in greater detail.

2.2 Occupation Data

I use occupation data from national censuses *(folk- och bostadsräkningarna)* conducted between 1960 and 1990[5]. The occupational classification employed in the censuses builds on the Nordic Occupational Classification *(nordisk yrkesklassificering)* which is based on the first International Standard Classification of Occupations (ISCO). The Nordic Occupational Classification categorizes jobs according to the end result of the tasks and duties undertaken in the job. This means that level of education and professional status are typically not considered in the occupational categorization (Statistics Sweden 2004*a*). The occupational classification has a hierarchical structure, allowing for analyses at different aggregation levels. Three-digit codes denote occupations, two-digit codes denote occupation groups and one-digit codes denote major occupation groups. I conduct the main analysis at the occupation level (that is using three-digit codes), because at higher levels of aggregation predominantly male or female occupations may be combined and appear as integrated.

I modify the occupational classifications from the censuses in two ways. First, I create a separate occupational category for farmwives for whom there is no occupation data.[6] Second, to analyze to what extent the intergenerational transmission of the sex composition of occupations is driven by individuals who are in the same occupation (three-digit

[3]The censuses from which children's occupations are taken do not contain any information on why occupation data is missing for some individuals.

[4]Most fathers for whom there is missing occupation data are on sick leave, while almost all mothers for whom there is missing occupation data are homemakers.

[5]I have occupation data from 1960, 1970, 1975, 1980, 1985 and 1990.

[6]The reason for this is that farmers and their wives typically shared the responsibility for the farm, but maintained a gendered division of tasks (Wikander 1991). In section 4.5.2, I present results from regressions excluding farmers and farmwives from the sample.

codes) or the same occupation group (two-digit codes) as their same-sex parent, the set of occupational classifications must be consistent over time. Since the occupational classifications have undergone slight changes between 1960 and 1990 (Statistics Sweden 2004*a*), I harmonized them using a key from Statistics Sweden (Statistics Sweden 2004*b*). The modified occupational classification consists of 271 unique occupations and 60 unique occupation groups.

I define an individual's occupation as the occupation he or she had at (or around) age 40, because at this age individuals should have completed their education, but not yet have entered retirement. Hence, I measure occupation in 1985 for children born 1943-1947 and in 1990 for children born 1948-1952. I measure parents' occupations in 1960 for those born 1900-1924, in 1970 for those born 1925-1932 and in 1975 for those born 1933-1937.[7]

I measure the sex composition of an individual's occupation by the fraction of women in the occupation the year the occupation was measured. For instance, consider an individual born in 1945. I obtain this individual's occupation from the 1985 census. If this individual was a doctor, the outcome variable used for this individual is the fraction of women among doctors in 1985. I base the computations of the fraction of women in an occupation on individuals in the occupation aged 15 to 74.[8]

Within every occupation group, there is a residual three-digit occupation.[9] The residual occupations may contain occupations with different sex compositions and the use of the residual occupations decreased between 1960 and 1990. Therefore, in section 4.5.2, I conduct a robustness check excluding individuals classified in residual occupations.

3 Descriptive Statistics

I present the descriptive statistics in Table 1. The child generation consists of 440,384 individuals (229,744 men and 210,640 women). The average year of birth is 1947 for

[7]Parents are up to 60 years old when I measure their occupation, while children are at most 42. In section 4.5.2, I test the robustness of the results by measuring occupation at age 35 and by excluding individuals whose parents are older than 42 when I measure their occupation.

[8]This is the age restriction used in the Labor Force Survey conducted by Statistics Sweden. In section 4.5.2, I show that the results are robust to basing the computations on individuals aged 20-64 instead.

[9]For example, the occupation group for physical scientists is 01. This occupation group contains four occupations: chemists (011), physicists (012), geologists and meteorologists (013) and a residual occupation (019). Hence, an individual who is a physical scientist but neither a chemist, a physicist, a meteorologist nor a geologist, is classified in the residual occupation.

children, 1916 for fathers and 1919 for mothers.

Occupation data are missing for 2 percent of fathers and 59 percent of mothers. This means that for 2 percent of the children in the final sample, there is only data on mother's occupation, and for 59 percent of the children, there is only data on father's occupation.[10] The reason behind the large share of missing occupation data for mothers is the low female labor force participation in the parental generation.[11] In section 4.5.2, I test the robustness of the results by categorizing all individuals who are out of the labor force in one occupational category.[12] The final sample consists of 226,337 father-son pairs, 207,394 father-daughter pairs, 94,529 mother-son pairs and 88,148 mother-daughter pairs.

On average, sons have 22 percent women in their occupation and daughters 75 percent. Among parents for whom there is occupation data, fathers have on average 9 percent women in their occupation and mothers 77 percent. I define an occupation as male if the fraction of women in the occupation is below 0.20, as integrated if the fraction of women in the occupation is between 0.20 and 0.80, and as female if the fraction of women in the occupation is between 0.80 and 1. Among sons, 61 percent are in a male occupation, 35 percent are in an integrated occupation and 5 percent are in a female occupation. The pattern is similar, but reversed, for daughters: 63 percent of daughters are in a female occupation, 32 percent in an integrated occupation and 5 percent in a male occupation. Among fathers for whom there is occupation data, 88 percent are in a male occupation, 12 percent in an integrated occupation and 1 percent in a female occupation. Finally, among the 41 percent of mothers for whom there is occupation data, 56 percent are in a female occupation, 36 percent are in an integrated occupation and 8 percent are in a male occupation.

In the last four rows of Table 1, I show how common it is for children to be in the same occupation (three-digit codes) or occupation group (two-digit codes) as their parents. Among children for whom there is data on their father's occupation, 8 (2) percent of sons

[10]Mothers for whom occupation data are missing are on average two years older than mothers for whom there are occupation data. They are also more likely to be married, have slightly lower education and a slightly higher number of children.

[11]Between 1965 and 1985, the labor force participation of women aged 16-64 increased from 50 to 80 percent (Statistics Sweden 1985).

[12]It is not possible to categorize homemakers in a separate occupational category, because they can only be identified in the 1960 census (later on they are grouped together with other individuals who are out of the labor force).

(daughters) have the same occupation as their father and 12 (3) percent of sons (daughters) are in the same occupation group as their father. Among children for whom there is data on their mother's occupation, 1 (4) percent of sons (daughters) are in the same occupation as their mother and 3 (8) percent of sons (daughters) are in the same occupation group as their mother. Thus, while sons are more likely to enter their father's than their mother's occupation or occupation group, daughters are more likely to enter their mother's than their father's occupation or occupation group.

In Figure 1, I illustrate the distributions of the fraction of women in the occupations of sons, daughters, fathers and mothers using histograms with 50 bins (note that the y-axis is not the same for children and parents). In comparison to sons' distribution, the distribution of fathers has a clearer spike in the left tail of the distribution, indicating that a larger share of fathers than sons work in occupations with very few women. For instance, more than 40 percent of fathers work in occupations with at most 2 percent women. Examples of such occupations are motor vehicle and tram drivers, fitters, carpenters and construction workers. The same pattern is present for mothers and daughters; more mothers than daughters work in occupations. For example, the largest spike in mothers' distribution shows that more than 30 percent of mothers are in occupations with at least 98 percent women. Some occupations in this group are maids, nannies and health care assistants.

4 Results

I present the intergenerational associations in the sex composition of occupations in section 4.1. I then turn to potential mechanisms underlying these associations. In section 4.2, I investigate to what extent the intergenerational associations in the sex composition of occupations are driven by individuals who have entered the same occupation or occupation group as their same-sex parent. In section 4.3, I investigate the roles of education level and municipality of residence in generating the intergenerational associations in the sex composition of occupations. Section 4.4 presents variations across family structures, and section 4.5 adds a number of robustness checks.

4.1 Main Results

I now turn to the main question of how the fraction of women in children's occupations is related to the fraction of women in their parents' occupations. In Table 2, I present the results from OLS regressions of the fraction of women in children's occupations on the fraction of women in their father's occupation (columns 1 and 2), the fraction of women in their mother's occupation (columns 3 and 4), and the fraction of women in both their parents' occupations (columns 5 and 6). I include birth year dummies for parents and children in all regressions.

Focusing first on the father-child associations, the coefficient on the fraction of women in father's occupation in column 1 is 0.110, suggesting that a one percentage point increase in the fraction of women in the father's occupation, is associated with a 0.110 percentage point increase in the fraction of women in the son's occupation. The corresponding coefficient for daughters, displayed in column 2, is -0.015. This coefficient indicates that a one percentage point increase in the fraction of women in the father's occupation, is associated with a 0.015 percentage point decrease in the fraction of women in the daughter's occupation[13] The coefficients in the first two columns thus suggest that the more men in the father's occupation, the more men in the son's occupation and the more women in the daughter's occupation.

I will now turn to the mother-child associations. In column 3, the coefficient on the fraction of women in the mother's occupation is -0.027. Thus, a one percentage point increase in the fraction of women in the mother's occupation, corresponds to a 0.027 percentage points decrease in the fraction of women in the son's occupation. The estimate for daughters, presented in column 4, is 0.040, indicating that a one percentage point increase in the fraction of women in the mother's occupation is associated with a 0.040 percentage point increase in the fraction of women in the daughter's occupation.[14] I conclude that the more women in the mother's occupation, the more men in the son's

[13]In terms of standard deviations, the results in columns 1 and 2 suggest that a one standard deviation increase in the fraction of women in the father's occupation, is associated with an increase in the fraction of women in the son's occupation of 8 percent of a standard deviation, and a decrease in the fraction of women in the daughter's occupation of 1 percent of a standard deviation.

[14]In terms of standard deviations, the results in columns 3 and 4 suggest that a one standard deviation increase in the fraction of women in the mother's occupation, is associated with a decrease in the fraction of women in the son's occupation of 3 percent of a standard deviation, and an increase in the fraction of women in the daughter's occupation of 4 percent of a standard deviation.

occupation and the more women in the daughter's occupation.[15]

Next, in the last two columns, I regress the fraction of women in children's occupations on the fraction of women in both their parents' occupations. The results in columns 5 and 6 show that the four parent-child associations do not change much when the fraction of women in both parents' occupations are included in the regression. This may indicate that assortative mating is not important.[16]

To summarize, the results reported so far suggest that the more men in the father's occupation and the more women in the mother's occupation, the more men in the son's occupation and the more women in the daughter's occupation. In other words, the more sex-stereotypical the occupations of parents are, the more sex-stereotypical the occupations of their children will be.[17] One should note, however, that the fraction of women in parents' occupations explain only a small share of the total variation in the fraction of women in children's occupations.[18]

The results in Table 2 also reveal that for both sons and daughters, the absolute magnitude of the coefficient on the fraction of women in the same-sex parent's occupation is larger than the absolute magnitude of the coefficient on the fraction of women in the opposite-sex parent's occupation (for instance, for sons in column 5, $0.100 > 0.020$, and for daughters in column 6, $0.041 > 0.010$). The associations between fathers and sons and between mothers and daughters thus appear to be more important than those between fathers and daughters and between mothers and sons.

The results also show that the intergenerational associations are stronger for sons than

[15]Recall that the mother-child associations are estimated on a selected sample of mothers, namely those 41 percent for whom there is occupation data.

[16]However, the sample changes substantially across columns: Columns 1 and 2 include all children for whom there is data on father's occupation, columns 3 and 4 include all children for whom there is data on mother's occupation, and columns 5 and 6 include all children for whom there is data on both parents' occupations. Since the sample changes across columns, it difficult to draw any conclusions about assortative mating from Table 2. Therefore, I restrict the sample to individuals for whom there is occupation data for both parents and rerun all six regressions. I present the results from these regressions in Appendix Table A.1. Once again, the coefficients on the fraction of women in parents' occupations change little when I include the fraction of women in both parents' occupations simultaneously instead of separately. Thus, assortative mating does not seem to play an important role. Moreover, the father-child associations on the restricted sample reported in Appendix Table A.1 are very similar to the baseline father-child associations in Table 2. This means that the father-son and father-daughter associations do not vary with whether the mother worked.

[17]As a robustness check, I also estimated the intergenerational associations in the sex composition of occupations for randomly paired parents and children. Doing this all associations are very close to zero and statistically insignificant.

[18]In columns 5 and 6 of Table 2, the R^2 is 0.014 for sons and 0.004 for daughters.

for daughters: The father-son association in column 5 is more than twice as large as the mother-daughter association in column 6 (0.100/0.041=2.4), and the absolute magnitude of the mother-son association in column 5 is twice as large as the absolute magnitude of the father-daughter association in column 6 (0.020/0.010=2.0).

4.2 Intergenerational Transmission of Occupations

I now move on to explore potential driving forces behind the intergenerational associations. In Table 1, I showed that sons are more likely to enter their father's than their mother's occupation or occupation group, while daughters are more likely to enter their mother's than their father's occupation or occupation group. In this section, I investigate to what extent these inheritance patterns account for the positive associations between the fraction of women in fathers' and sons' occupations and between the fraction of women in mothers' and daughters' occupations.

I present the results for sons in the upper panel of Table 3. In column 1, I present the baseline result for sons from column 5 in Table 2. Next, in column 2, I exclude sons who have the same occupation as their father. The father-son association is then 0.073 in comparison to 0.100 in the baseline. In column 3, I exclude sons who are in the same occupation group (two-digit codes) as their father. The father-son association then decreases to 0.056.

I show the results for daughters in the bottom panel. When excluding daughters who are in the same occupation as their mother, the mother-daughter association decreases from 0.041 to 0.023. When exluding daughters who are in the same occupation group as their mother, the remaining mother-daughter association is 0.011.

Thus, the positive associations between the fraction of women in fathers' and sons' occupations and between the fraction of women in mothers' and daughters' occupations are partly driven by individuals entering an occupation similar to their same-sex parent's occupation. In comparison to the baseline father-son association, three fourths of the association remain among sons choosing a different occupation than their father, and one half among sons choosing a different occupation group than their father. An even larger share of the mother-daughter association can be accounted for by daughters entering an occupation similar to their mother's occupation. As compared to the baseline mother-

daughter association, one half remains among daughters who have a different occupation than their mother, and one fourth among daughters who have a different occupation group than their mother.

4.3 The Roles of Education and Municipality of Residence

The intergenerational associations in the sex composition of occupations may also arise from intergenerational associations in other factors influencing the sex-composition of and individual's occupation. Two such factors are education level and municipality of residence. High educated individuals tend to work in more integrated occupations than low educated individuals, and the average fraction of women in men's and women's occupations varies substantially across municipalities. I attempt to proxy for these mechanisms with controls for parental and child education level and municipality of residence. The purpose of these regressions is not to make causal statements about particular mechanisms, but rather to see to what extent the intergenerational associations in the sex composition of occupations can be accounted for by these controls. If the intergenerational associations were completely driven by similarities in education level and municipality of residence between generations, I would expect the associations to disappear when controlling for these factors.

The information on education level and municipality of residence stems from the censuses. Education is measured on a seven-point scale. Since education data is only available for individuals born in 1911 at the earliest, I exclude all parents born before 1911 from the analysis. I show the results for sons in the upper panel of Table 4. In column 1, I show the baseline results on the restricted sample. In column 2, I include fixed effects for the father's, the mother's and the child's education levels. Finally, in column 3, I also add fixed effects for parents' municipality of residence and for the child's municipality of residence at age 40. The father-son association is positive and significantly different from zero in all columns. Controlling for both education level and municipality of residence (column 3), the father-son association is 0.055 in comparison to 0.100 in the baseline. Thus, half of the father-son association is left unaccounted for. The mother-son association, on the other hand, is close to zero and no longer significant when controlling for education level and municipality of residence.

The results for daughters, presented in the bottom panel of Table 4, are similar to those for sons. Controlling for education level and municipality of residence, the mother-daughter association decreases by about one half, from 0.041 to 0.023, while the father-daughter association is no longer significant.

To conclude, the results in Table 4 indicate that all of the mother-son and father-daughter associations can be accounted for by the education and municipality controls. The father-son and mother-daughter associations, however, remain positive and significant and about half as large as in the baseline when controlling for education level and municipality of residence. The unexaplained part of the associations between fathers and sons and mothers and daughters may be due to measurement error if the controls are imperfect proxies for the underlying mechanisms. Alternatively, other mechanisms may be at play. I discuss such potential mechanisms in Section 5.

4.4 Variations across Family Structures

We now move on to the question of how the intergenerational associations in the sex composition of occupations vary with family structure. I start by exploring the roles of birth order and the sex composition of siblings. Thereafter, I investigate if the parent-child associations vary with whether the parent and the child lived together.

4.4.1 Birth Order

It has been suggested that first-born children try harder than later-born children to imitate their parents (Behrman & Taubman 1986), and Lindahl (2008) shows that the intergenerational income elasticity decreases with birth order. In columns 3 and 4 in Table 5, I explore if the intergenerational associations in the sex composition of occupations are different for first-born children compared to later-born children. I do this by including a control for whether the child was the first-born child and interactions between being the first-born child and the fraction of women in parents' occupations. Since the probability of being a first-born child varies with the number of children in the family, I include dummies for the number of children in the family in the regressions.[19] Thus, I investigate whether the intergenerational associations in the sex composition of occupations are different for

[19] I define individuals who have the same biological mother as belonging to the same family.

first-borns for a given family size. None of the four interaction terms are significant, indicating that the intergenerational associations in the sex composition of occupatons are not different for first-born than for later-born children.

4.4.2 Sex Composition of Siblings

Next, I analyze the role of the sex composition of siblings. Psychological studies have found that children from families with children of only one sex are less socialized into a sex-role than other children. For instance, children from families with children of only one sex have less sex-stereotypical aspirations and attitudes (see e.g. Eccles & Hoffman (1984)). This could potentially imply that children from families where all siblings are of the same sex are less likely to use their same-sex parent as a role model, and more likely to use their opposite-sex parent as a role model, compared to children from other families. In this section, I therefore examine if the father-son and mother-daughter associations are less positive, and if the father-daughter and mother-son associations are less negative, for children who were brought up in families where all siblings are of the same sex than for children from other families.

I test this by including a dummy for whether all children in the family are of the same sex, and interaction terms between this dummy and the fraction of women in parents' occupations. I present the results from these regressions in columns 5 and 6 in Table 5. Since the probability of all children being of the same sex varies with the number of children in the family, I include dummies for the number of children in the family. Consequently, I investigate the role of the sex composition of siblings within family sizes. The results indicate that the intergenerational associations are not different in families with children of only one sex as compared to families with children of both sexes.

4.4.3 Presence of Parents

Having concluded that the intergenerational associations in the sex composition of occupations do not vary with birth order or the sex composition of siblings, I now investigate the role of parental presence. Previous research shows that the influence of parents on their children through socialization varies with how much the children interact with their parents (Hetherington, 1965). In this section, I therefore examine if the intergenerational

associations in the sex composition of occupations vary with whether the parent and the child lived together. The information on individuals' household comes from the censuses, and I measure whether the child lived with their parents at (or around) age 15.

In the top panel of Table 6, I show how the parent-son association varies with parental presence. The father-son association is lower for sons who did not live with their father than for sons who lived with both parents. For sons living with both parents, the coefficient on the fraction of women in father's occupation is significant and 0.109 and for sons living with only their mother it is significant and 0.074. The difference between these two estimates is statistically significant (p=0.023).[20] For sons living with their mother and a stepfather the coefficient is 0.024 and statistically insignificant. This coefficient is also different from that for sons living with both parents (p<0.01). The mother-son association is not affected by whether the son lived with his mother. In comparison to sons living with both parents, the mother-son association is not different for sons living with only their father (p=0.978) or for sons living with their father and a stepmother (p=0.582).

The results for daughters are presented in the bottom panel of Table 6. In comparison to daughters living with both parents, the father-daughter association is not different for daughters living with only their mother (p=0.457), or with their mother and a stepfather (p=0.448). Similarly, the mother-daughter association is not different for daughters living with only their father (p=0.707) or with their father and a stepmother (p=0.313).

I conclude that, in comparison to sons living with both biological parents, the association between sons and their biological father is weaker for sons living with only their mother and for sons living with their mother and a stepfather. From these results, I infer that the association between sons and their biological father is not only driven by genetic factors. Other mechanisms must also be at play. For instance, sons may use their father as a role model and therefore choose an occupation with a sex composition similar to that of their father's occupation, and fathers may transmit skills or preferences for job characteristics to their sons which in turn influence the sex composition of occupations. Besides the

[20]To test if the father-son association is different for sons living with only their mother than for sons living with both parents, I run a regression including all sons living either with both parents or only with their mother, including a dummy for whether the son lived only with his mother, and interaction terms between this dummy and all other variables in the regression. The difference in the father-son association is given by the interaction term between the dummy variable and the fraction of women in father's occupation. I use the same method to test differences in parent-child associations throughout this section.

father-son association, no other parent-child associations vary significantly with whether the parent and the child lived together.

4.5 Robustness

In this section, I test the robustness of the results in a number of ways. I start by examining if the results change when differences in marginal distributions between men and women and between generations are taken into account. Thereafter, I define the outcome variable in alternative ways, and impose alternative sample restrictions. I then move on to allow the regression slopes to vary with the fraction of women in parents' occupations. Finally, I examine if the fact that male occupations are more finely classified than female occupations can explain why the father-son association is stronger than the mother-daughter association.

4.5.1 Taking Differences in Marginal Distributions into Account

In Figure 1, it is clear that the marginal distributions of the fraction of women differ between men and women and between generations. In this section, I explore if the results are robust to taking these differences into consideration by computing Pearson and Spearman correlations.

The intergenerational regression coefficient depends on the dispersion of the distributions of the fraction of women in the occupations of the two generations. An alternative measure of intergenerational persistence, which takes differences in dispersion into account, is the intergenerational correlation coefficient (Pearson correlation). The Pearson correlation equals the regression coefficient multiplied by the ratio of the standard deviation of parents' distribution to the standard deviation of children's distribution. I display Pearson correlations in columns 3 and 4 of Appendix Table A.2. All Pearson correlations have the same sign as the regression coefficents, and the ranking of the magnitudes of the four parent-child associations remains the same. The most notable difference is that the father-son Pearson correlation is one fourth lower than its corresponding regression coefficient.

While the Pearson correlation accounts for differences in dispersion between groups, it does not take other distributional characteristics into consideration. In order to fully

abstract from differences in distributions, I also compute rank (Spearman) correlations. These correlations are presented in columns 5 and 6 of Appendix Table A.2. The Spearman correlations have the same sign as the regression coefficients, and the ranking is once again the same. In comparison to the regression coefficients the Spearman correlations, except for the father-son correlation, are somewhat larger.

Summing up, adjusting for differences in distributions across groups by computing Pearson and Spearman correlations, the magnitude of some associations change, but all the main conclusions remain unchanged.

4.5.2 Changing Samples and Variable Definitions

I now explore if the results are robust to changing variable definitions and sample restrictions. The results are presented in Appendix Table A.3. In the first two columns, I present the baseline results. Next, in columns 3 and 4, I define an individual's occupation as the occupation he or she had as close as possible to age 35 instead of 40. I do this because, to my knowledge, it is not well known at what age one should measure occupation in order to get as good a measure as possible of an individual's occupation. Thereafter, in columns 5 and 6, I keep the sex composition of occupations constant over time. This is done by redefining children's outcome variable as the fraction of women in their occupation the year the occupation of their mother was measured (instead of the year their own occupation was measured).[21] Since children make their occupational choice around this time, it is likely that they base their expectations of the sex composition of occupations on the sex compositions prevailing at this time. In columns 7 and 8 I base the computations of the fraction of women in an occupation on individuals aged 20-64 instead of individuals aged 15-74.

In the bottom panel, I start by excluding individuals who have at least one parent born before 1918. The maximum age when measuring occupation is then the same for parents and children. Then I move on to excluding farmers and farmwives from the sample. This is done because it is much less common to be a farmer today than it was

[21] Consider an individual born in 1945. I obtain this individual's occupation from the 1985 census. If this individual was a doctor, the outcome variable used in the baseline is the fraction of women among doctors in 1985. Let's assume that the individual's mother was born in 1920 and that the occupation of the mother was measured in 1960. The outcome variable used in this robustness check is then the fraction of women among doctors in 1960.

in 1960. Consequently, if the results are largely driven by farmers and their children, they may be less relevant for today's labor market. In the following two columns, I assign individuals who are out of the labor force to a separate occupation. Thereby, these individuals are included in the analysis sample. Most importantly, female homemakers in the parental occupation are then included in the analysis. Finally, I exclude individuals who are classified in residual occupations. The reason for this is twofold. First, the residual occupations may contain occupations with different sex compositions, introducing measurement error in the outcome variable for individuals in these occupations. Second, the use of these residual categories decreased between the two generations.

From these robustness tests, I see that that the associations between the fraction of women in children's and their same-sex parent's occupation vary slightly in magnitude with the variable definitions and sample restrictions, but are otherwise robust. The associations between the fraction of women in children's and their opposite-sex parent's occupation appear to be less robust. In particular, when excluding farmers and farmwives or individuals who have at least one parent born before 1918, neither the father-daughter nor the mother-son associations are significant. In addition, the father-daughter association is no longer significant when measuring occupation at age 35 or when excluding individuals in residual occupations.

4.5.3 Spline Regressions

I will now investigate whether the relationships between the fraction of women in children's and parents' occupations are linear. I do this by allowing the slope coefficient to vary with the fraction of women in the father's or mother's occupation. I focus on the father-son and mother-daughter associations because these relationships have so far proven to be the strongest and most robust. I run spline regressions, allowing the relationship between the fraction of women in fathers' and sons' (mothers' and daughters') occupations to vary with the fraction of women in the father's (mother's) occupation. The slope is allowed to take on three different values: One if the father (mother) is in a male occupation, one if the father (mother) is in an integrated occupation, and one if the father (mother) is in a

female occupation.[22]

The results are presented in Appendix Table A.4. The father-son association is 0.262 if the father is in a male occupation, 0.031 if he is in an integrated occupation, and -0.127 and not significantly different from zero if he is in a female occupation. These results suggest that the father-son association is non-linear, and that it is strongest when the father is in a male occupation.[23] Since the vast majority of all fathers (88 percent) are in male occupations, this means that the baseline father-son association of 0.100 underestimates the father-son association for most fathers and sons in the sample.

Next, I turn to the relationship between the fraction of women in mothers' and daughters' occupations. The mother-daughter association is 0.127 if the mother is in a female occupation, 0.008 and not significantly different from zero if she is in an integrated occupation, and 0.083 if she is in a male occupation. These results suggest that the mother-daughter association may also be non-linear, and that it is stronger for mothers in female or in male occupations, than for mothers in integrated occupations.[24] Although the results for mothers and daughters show partly a different pattern than those for fathers and sons, they are similar in that they suggest that the association from the OLS regression underestimates the mother-child association for a substantial share of mother-daughter pairs. Recall that more than half of the mothers (56 percent) for whom there is occupation data are in female occupations. Consequently, the baseline mother-daughter association of 0.041 obtained from the OLS regression underestimates the mother-daughter association for the majority of mothers and daughters in the sample.

To summarize, for fathers working in male occupations and for mothers working in female occupations, the associations obtained from OLS regressions are substantially weaker than those obtained from spline regressions. Since most parents have occupations typical

[22] I define an occupation as *male* if the fraction of women in the occupation is below 0.20, as *integrated* if the fraction of women in the occupation is between 0.20 and 0.80, and as *female* if the fraction of women in the occupation is between 0.80 and 1.

[23] The coefficient for fathers in male occupations is significantly different from that for fathers in integrated ($p < 0.01$, two-tailed F-test) or female occupations ($p < 0.01$, two-tailed F-test). The coefficient for fathers in integrated occupations is however not significantly different from that for fathers in female occupations ($p = 0.102$, two-tailed F-test).

[24] The coefficient for mothers in female occupations is significantly different from that for mothers in integrated occupations ($p < 0.01$, two-tailed F-test), and the coefficient for mothers in male occupations is marginally signficantly different from that for mothers in integrated occupations ($p < 0.10$, two-tailed F-test). However, the coefficients for mothers in female and male occupations are not significantly different from each other (p=0.243, two-tailed F-tests).

for their sex, this means that the associations from the OLS regressions may underestimate the father-son and mother-daughter associations for most children in the sample.[25]

4.5.4 Differences in the Occupational Classification between Male and Female occupations

As a last robustness check, I investigate the consequences of differences in the occupational classification between male and female occupations. Traditional male occupations are more finely classified than traditional female occupations (Löfström 2004). The fact that female occupations are grouped together may cause a measurement error in the fraction of women in these occupations. We expect this measurement error to affect women more than men since women work in these occupations more often than men do. In this section, I investigate if the potential gender difference in this measurement error explains why the father-son association is stronger than the mother-daughter association.

To explore this issue I study occupation groups (two-digit codes) instead of occupations (three-digit codes). If the difference in detail between male and female occupations is smaller at the occupation group level than at the occupation level, and if the difference in detail between male and female occupations causes the difference between the father-son and the mother-daughter association, I would expect the difference between the father-son and the mother-daughter association to be smaller at the occupation group level than at the occupation level.

The results, presented in Appendix Table A.5, show that the difference between the father-son and the mother-daughter association is not smaller at the occupation group level than at the occupation level. If the difference in detail between male and female occupations is smaller at the occupation group level, these results suggest that the difference between the father-son and the mother-daughter association cannot be explained by the fact that traditional female occupations are less finely classified than traditional male occupations.

[25] An alternative way of investigating non-linearities is to include higher order polynomials in the fraction of women in parents' occupations in the estimating equations. Including quadratic and cubic terms, I reach the same conclusion as above. These results are not included in the paper.

5 Summary and Concluding Comments

Occupational segregation by sex is a persistent labor market phenomenon that accounts for a substantial part of the gender pay gap (Anker 1998, Blau et al. 2009). In this paper I address the question of why men and women continue to choose different jobs by investigating the intergenerational transmission of the sex composition of occupations. Using Swedish register data, I examine how the fraction of women in children's occupations is related to the fraction of women in their parents' occupations.

I find positive associations between the fraction of women in fathers' and sons' occupations and between the fraction of women in mothers' and daughters' occupations. I also find negative, and smaller, associations between the fraction of women in mothers' and sons' and fathers' and daughters' occupations. I conclude that the more sex-stereotypical the occupations of parents are, the more sex-stereotypical the occupations of their children will be.

There is little research on the persistence of the occupational segregation by sex, but one suggested explanation is the tipping phenomenon (Pan forthcoming, England et al. 2007) implying that the increase of the fraction of women in some occupations is sharp and discontinuous once the fraction of women reaches a certain threshold level. Thus, when women enter predominantly male occupations, these occupations may eventually tip and become predominantly female. This paper suggests that another possible contributor to the persistence of the occupational sex segregation is that children follow the sex-stereotypicality of their parents' occupations. This mechanism may be relevant as long as the parents' labor market is segregated by sex.

In comparison to intergenerational associations in other labor market outcomes, the estimates in this paper are generally smaller. For instance, for education, Björklund et al. (2007) find a father-son (mother-daughter) transmission that is two (three) times larger than that reported here. The finding that the magnitude of the intergenerational associations is larger between children and their same-sex parent than between children and their opposite-sex parent is in line with two recent Scandinavian studies on the intergenerational transmission of entrepreneurship (see Lindquist et al. (forthcoming) and Hoffmann et al. (forthcoming)).

I also find that the intergenerational associations are stronger for sons than for daughters: The father-son association is stronger than the mother-daughter association, and the mother-son association is stronger than the father-daughter association. This result is in line with previous studies showing that daughters' income mobility is higher than that of sons (see e.g Holmlund (2006)). It is also consistent with recent research showing that men have entered female jobs to a lower extent than women have entered male jobs (Blau et al. 2013). That is, the decrase in occupational segregation by sex has been driven by women entering previously male dominated jobs, not by men entering female dominated jobs.

I also use the data at hand to investigate how the associations vary with family structure. I show that the associations do not vary with birth order or the sex composition of siblings. Moreover, I find that the association between sons and their biological father is lower if the son lived only with his mother or with his mother and a stepfather, than if he lived with both biological parents. This result suggests that the association between sons and their biological father cannot only be explained by genetic factors. No other parent-child associations are affected by whether the parent and the child lived together.

Exploring potential mechanisms behind the intergenerational associations in the sex composition of occupations, I find that the positive associations between the fraction of women in fathers' and sons' and in mothers' and daughters' occupations are partly driven by children choosing the same occupation or occupation group as their same-sex parent. The intergenerational associations in the sex composition of occupations may also arise because of intergenerational associations in other demographic or geographic factors influencing the sex composition of an individual's occupation. Controlling for education level and municipality of residence in both generations, I can account for all of the association between children and their opposite-sex parent and about half of the association between children and their same-sex parent. One explanation for the remaining part of the father-son and mother-daughter associations may be that the controls are imperfect proxies for the underlying mechanisms. Another possibility may be that other mechanisms than those I investigate are involved in generating the associations in the sex composition of occupations between children and their same-sex parent.

There are several other potential mechanisms. First, there may be a causal effect

of the sex composition of parents' occupations on that of children's occupations through role modeling or the acquisition of social norms. It has been shown that children view their same-sex parent as a role model and imitate his or her behavior (Maccoby 1992, Hetherington 1965). Children may therefore imitate the sex composition of their same-sex parent's occupation. It has also been shown that social norms about what is appropriate for men and women to do induce occupational sex segregation (Akerlof & Kranton 2000, Altonji & Blank 1999). Suppose children partly learn what men and women should do by observing the sex composition of their parents' occupations. If parents work in sex stereotypical occupations, children learn that men should work with men and women with women. As a result, children may also choose occupations stereotypical for their sex.

Second, there may be a transmission of skills, networks or preferences for job characteristics from fathers to sons and from mothers to daughters influencing the sex composition of individuals' occupations. One reason to expect a transmission of skills along gender lines is that parents invest more in their same-sex children than in their opposite-sex children (Thomas 1994). It has also been shown that paternal networks are more important for sons while maternal networks are more important for daughters (Kramarz & Skans forthcoming).

Third, parents may transmit gender-role attitudes influencing the sex composition of individuals' occupations to their children. Suppose individuals with more conservative gender-role attitudes work in more segregated occupations. If parents transmit their gender-role attitudes to their children, then parents and children in conservative families will work in more segregated occupations than parents and children in more liberal families. As a result, we will observe a positive association between the fraction of women in fathers' and sons' occupations and between the fraction of women in mothers' and daughters' occupations.[26]

The above potential mechanisms are not possible to test using the data at hand, but are important for future research. In particular, it would be interesting to investigate the degree to which the reported intergenerational associations can be interpreted as causal

[26]Gender role attitudes have been shown to be transmitted from mothers to children (Thornton et al. 1983, Farré & Vella 2013) and women's gender role attitudes have been shown to be related to their labor market outcomes (Fortin 2005, Farré & Vella 2013, Thornton et al. 1983). I am however not aware of any studies investigating the transmission of gender role attitudes from fathers to children or the association between men's gender role attitudes and their labor market outcomes.

effects. Such knowledge is crucial to determine whether an intervention affecting the occupational sex segregation of the parental generation would propagate to the next generation.

One limitation of the present study is that occupation data is missing for a large share of mothers. In future research, it would be interesting to investigate if the results hold for more recent cohorts of children growing up in a society with a substantially higher female labor force participation.

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Table 1: Descriptive Statistics

	All children	Sons	Daughters
number of observations	440,384	229,744	210,640
(%)	100.0	52.2	47.8
year of birth	1947	1947	1947
	2.8	2.8	2.8
father's year of birth	1916	1916	1916
	6.6	6.6	6.6
mother's year of birth	1919	1919	1919
	6.2	6.2	6.2
fraction of children...			
... missing data on father's occupation	0.02	0.01	0.02
... missing data on mother's occupation	0.59	0.59	0.58
fraction of women...			
... in child's occupation	0.48	0.22	0.75
... in father's occupation	0.09	0.09	0.09
... in mother's occupation	0.77	0.78	0.77
fraction of children...			
... in male occupation	0.34	0.61	0.05
... in integrated occupation	0.33	0.35	0.32
... in female occupation	0.32	0.05	0.63
fraction of fathers...			
... in male occupation	0.88	0.88	0.88
... in integrated occupation	0.12	0.12	0.12
... in female occupation	0.01	0.01	0.01
fraction of mothers...			
... in male occupation	0.08	0.08	0.08
... in integrated occupation	0.36	0.36	0.37
... in female occupation	0.56	0.56	0.56
fraction of children...			
... in same occupation as father	0.05	0.08	0.02
... in same occupation as mother	0.03	0.01	0.04
... in same group of occupations as father	0.08	0.12	0.03
... in same group of occupations as mother	0.05	0.03	0.08

Percent or standard deviation in parenthesis. I define an occupation as male if the fraction of women in the occupation is in [0,0.20), as *integrated* if the fraction of women in the occupation is in [0.20,0.80), and as female if the fraction of women in the occupation is in [0.80,1].

Table 2: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations.

Dependent variable: Fraction of women in child's occupation.						
	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters
fraction of women in father's occ.	0.110 (0.003)***	-0.015 (0.003)***			0.100 (0.004)***	-0.010 (0.005)**
fraction of women in mother's occ.			-0.027 (0.003)***	0.040 (0.003)***	-0.020 (0.003)***	0.041 (0.003)***
R^2	0.013	0.001	0.007	0.004	0.014	0.004
N	226,337	207,394	94,529	88,148	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 3: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations. Separate regressions for children who have entered a different occupation or a different group of occupations than their same-sex parent.

Dependent variable: Fraction of women in child's occupation.			
Sons	(1) *baseline*	(2) *same occupation excluded*	(3) *same occupation group excluded*
fraction of women in father's occ.	0.100 (0.004)***	0.073 (0.004)***	0.056 (0.005)***
fraction of women in mother's occ.	-0.020 (0.003)***	-0.031 (0.003)***	-0.033 (0.003)***
R^2	0.014	0.013	0.012
N	91,122	82,624	79,719
birth year controls	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Daughters	(1) *baseline*	(2) *same occupation excluded*	(3) *same occupation group excluded*
fraction of women in father's occ.	-0.010 (0.005)**	-0.013 (0.005)**	-0.016 (0.005)***
fraction of women in mother's occ.	0.041 (0.003)***	0.023 (0.003)***	0.011 (0.003)***
R^2	0.004	0.003	0.002
N	84,902	81,323	78,263
birth year controls	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 4: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations, controlling for parents' and children's education level and municipality of residence.

Dependent variable: Fraction of women in child's occupation.

Sons	(1) *baseline*	(2)	(3)
fraction of women in father's occ.	0.100	0.065	0.055
	(0.004)***	(0.004)***	(0.004)***
fraction of women in mother's occ.	-0.020	-0.004	-0.002
	(0.003)***	(0.003)	(0.003)
R^2	0.014	0.091	0.114
N	84,179	84,179	84,179
birth year controls	Yes	Yes	Yes
education level controls	No	Yes	Yes
municipality controls	No	No	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Dependent variable: Fraction of women in child's occupation.

Daughters	(1) *baseline*	(2)	(3)
fraction of women in father's occ.	-0.008	0.008	0.007
	(0.005)*	(0.005)*	(0.005)
fraction of women in mother's occ.	0.041	0.027	0.023
	(0.003)***	(0.003)***	(0.003)***
R^2	0.004	0.058	0.081
N	78,570	78,570	78,570
birth year controls	Yes	Yes	Yes
education level controls	No	Yes	Yes
municipality controls	No	No	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 5: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations. Investigating the roles of birth order and the sex composition of siblings.

Dependent variable: Fraction of women in child's occupation.

	baseline					
	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters
fraction of women in father's occ.	0.100	-0.010	0.096	-0.001	0.094	-0.013
	(0.004)***	(0.005)**	(0.006)***	(0.007)	(0.006)***	(0.006)**
fraction of women in mother's occ.	-0.020	0.041	-0.017	0.040	-0.012	0.041
	(0.003)***	(0.003)***	(0.004)***	(0.004)***	(0.003)***	(0.004)***
firstborn			0.017	-0.007		
			(0.005)***	(0.006)		
firstborn X fraction of women in father's occ.			-0.009	-0.013		
			(0.008)	(0.010)		
firstborn X fraction of women in mother's occ.			0.004	0.001		
			(0.006)	(0.006)		
all siblings of same sex					0.014	0.004
					(0.005)***	(0.006)
all siblings of same sex X fraction of women in father's occ.					-0.006	0.014
					(0.009)	(0.010)
all siblings of same sex X fraction of women in mother's occ.					-0.008	-0.005
					(0.006)	(0.007)
R^2	0.014	0.004	0.021	0.005	0.020	0.005
N	91,122	84,902	91,122	84,902	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes
controls for no. of children	No	No	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table 6: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations, by presence of parents.

Dependent variable: Fraction of women in child's occupation.

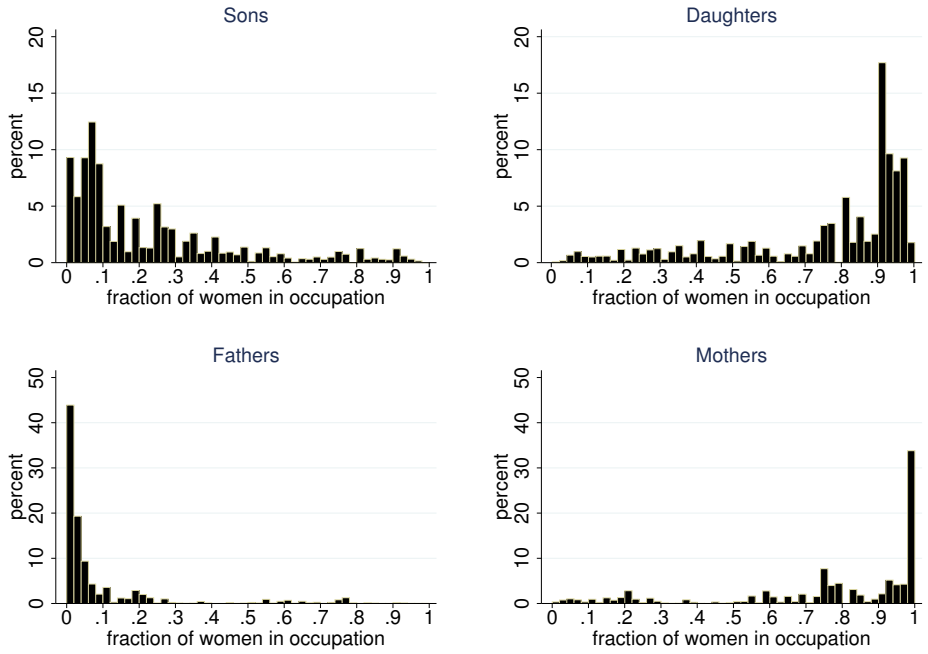
Sons	*baseline*	*parental presence at age 15*				
		mother+father	only mother	mother + step father	only father	father + step mother
	(1)	(2)	(3)	(4)	(5)	(6)
fraction of women in father's occ.	0.100	0.109	0.074	0.024	0.126	0.018
	(0.004)***	(0.005)***	(0.016)***	(0.023)	(0.036)***	(0.047)
fraction of women in mother's occ.	-0.020	-0.022	0.005	-0.003	-0.022	-0.039
	(0.003)***	(0.003)***	(0.012)	(0.016)	(0.024)	(0.031)
R^2	0.014	0.015	0.019	0.029	0.060	0.164
N	91,122	76,706	5,504	2,945	1,249	670
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Daughters	*baseline*	*parental presence at age 15*				
		mother+father	only mother	mother + step father	only father	father + step mother
	(1)	(2)	(3)	(4)	(5)	(6)
fraction of women in father's occ.	-0.010	-0.009	0.004	-0.026	-0.014	0.010
	(0.005)**	(0.005)*	(0.017)	(0.023)	(0.050)	(0.081)
fraction of women in mother's occ.	0.041	0.040	0.046	0.029	0.052	0.084
	(0.003)***	(0.003)***	(0.013)***	(0.017)*	(0.034)	(0.046)*
R^2	0.004	0.005	0.017	0.030	0.105	0.192
N	84,902	69,728	5,213	3,022	931	415
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Figure 1: Distribution of children and parents across occupations.



The histograms were created using 50 bins. Note that the y-axis is not the same for parents and children.

A Appendix

Table A.1: Regressions of fraction of women in children's occupations on fraction of women in parents' occupations. Restricted sample: Including only individuals for whom there is occupation data for both parents.

Dependent variable: Fraction of women in child's occupation.

	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters
fraction of women in father's occ.	0.104	-0.015			0.100	-0.010
	(0.004)***	(0.005)***			(0.004)***	(0.005)**
fraction of women in mother's occ.			-0.027	0.041	-0.020	0.041
			(0.003)***	(0.003)***	(0.003)***	(0.003)***
R^2	0.012	0.002	0.007	0.004	0.014	0.004
N	91,122	84,902	91,122	84,902	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table A.2: Baseline regression results, Pearson correlations and Spearman correlations.

	baseline		*Pearson*		*Spearman*	
	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters
fraction of women in father's occ.	0.100***	-0.010*	0.078***	-0.007**	0.105***	-0.014***
fraction of women in mother's occ.	-0.020***	0.041***	-0.024***	0.045***	-0.067***	0.061***
R^2	0.014	0.004				
N	91,122	84,902	91,122	84,902	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes

* < 0.1; ** < 0.05; *** < 0.01

To compute the Pearson correlations, I first regress the fraction of women in each group on birth year dummies for both generations. Thereafter, I compute the partial Pearson correlations on the residuals from these regressions. To compute the Spearman correlations, I first regress the fraction of women in each group on birth year dummies for both generations. Therafter, for each group, I create percentiles of the residuals from these regressions. I regress the percentile of the fraction of women in the child's occupation on the percentiles of the fraction of women in father's and mother's occupation. What I report as Spearman correlations in the table are the regression coefficients from these regressions.

Table A.3: Robustness tests using alternative definitions of the outcome variable and alternative sample restrictions. Regressions of fraction of women in children's occupations on fraction of women in parents' occupations.

Dependent variable: Fraction of women in child's occupation.

	baseline		*measure occ. at age 35*		*sex composition constant over time*		*active population: 20-64 years old*	
	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters	(7) sons	(8) daughters
fraction of women in father's occ.	0.100	-0.010	0.099	-0.006	0.079	-0.029	0.099	-0.010
	(0.004)***	(0.005)**	(0.005)***	(0.005)	(0.004)***	(0.006)***	(0.004)***	(0.005)**
fraction of women in mother's occ.	-0.020	0.041	-0.016	0.041	-0.022	0.059	-0.022	0.043
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.004)***	(0.003)***	(0.003)***
R^2	0.014	0.004	0.011	0.006	0.019	0.015	0.014	0.004
N	91,122	84,902	81,190	68,713	91,122	84,902	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

	exclude parents born before 1918		*exclude farmers + farmwives*		*include out of the labor force*		*exclude residual occupations*	
	(1) sons	(2) daughters	(3) sons	(4) daughters	(5) sons	(6) daughters	(7) sons	(8) daughters
fraction of women in father's occ.	0.088	-0.002	0.083	-0.007	0.081	-0.008	0.091	-0.006
	(0.006)***	(0.007)	(0.005)***	(0.005)	(0.002)***	(0.003)***	(0.006)***	(0.008)
fraction of women in mother's occ.	-0.006	0.032	-0.003	0.042	-0.023	0.036	-0.023	0.039
	(0.004)	(0.005)***	(0.003)	(0.004)***	(0.003)***	(0.003)***	(0.003)***	(0.004)***
R^2	0.013	0.004	0.014	0.005	0.012	0.002	0.013	0.006
N	40,635	38,148	62,545	59,596	243,164	233,070	51,753	44,971
birth year controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table A.4: Robustness tests using linear splines to estimate the relationship between the fraction of women in fathers' and sons' occupations and between the fraction of women in mothers' and daughters' occupations as piecewise linear functions.

Dependent variable: Fraction of women in child's occupation.

	baseline		*spline regression*	
	(1)	(2)	(3)	(4)
	sons	daughters	sons	daughters
fraction of women in father's occ.	0.100	-0.010		-0.004
	(0.004)***	(0.005)**		(0.005)
fraction of women in mother's occ.	-0.020	0.041	-0.017	
	(0.003)***	(0.003)***	(0.003)***	
fraction of women in father's occ., father in male occ.			0.262	
			(0.015)***	
fraction of women in father's occ., father in integrated occ.			0.031	
			(0.008)***	
fraction of women in father's occ., father in female occ.			-0.127	
			(0.093)	
fraction of women in mother's occ., mother in male occ.				0.083
				(0.037)**
fraction of women in mother's occ., mother in integrated occ.				0.008
				(0.006)
fraction of women in mother's occ., mother in female occ.				0.127
				(0.012)***
R^2	0.014	0.004	0.015	0.005
N	91,122	84,902	91,122	84,902
birth year controls	Yes	Yes	Yes	Yes

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

I define an occupation as male if the fraction of women in the occupation is in [0,0.20), as *integrated* if the fraction of women in the occupation is in [0.20,0.80), and as female if the fraction of women in the occupation is in [0.80,1].

Table A.5: Robustness tests using different levels of aggregation in the occupational classification. Regressions of fraction of women in children's occupations on fraction of women in parents' occupations.

Dependent variable: Fraction of women in child's occupation.

	baseline		*2 digit occ. codes*	
	(1) sons	(2) daughters	(3) sons	(4) daughters
fraction of women in father's occ.	0.100	-0.010		
	(0.004)***	(0.005)**		
fraction of women in mother's occ.	-0.020	0.041		
	(0.003)***	(0.003)***		
fraction of women in father's occ., 2 digits			0.138	-0.007
			(0.004)***	(0.004)*
fraction of women in mother's occ., 2 digits			-0.026	0.033
			(0.003)***	(0.003)***
R^2	0.014	0.004	0.021	0.003
N	91,122	84,902	91,122	84,902

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$