Intergenerational transmission of gender segregation

Parents’ Roles in Shaping Children’s Occupational Aspirations

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Abstract

Most men and women are employed in occupations largely dominated by people of their own sex. Since occupational aspirations have proven to predict future labor market behavior it is of importance to study young boys’ and girls’ occupational preferences. With the use of a survey based on Swedish 15-year-old children this study examines the association between the gender composition of parent’s occupation and the gender composition of children’s most preferred occupation. Drawing from the sex-role model that emphasizes the importance of the same-sex parents in forming children’s preferences, this study has investigated whether the gender composition of mothers’ (fathers’) occupations has an impact on the gender composition of girls’ (boys’) occupational aspirations. In line with previous research, the sex-role model received support for girls. But the observed association between fathers and sons disappear upon adding control variables. It was also hypothesized that the mothers’ generation entry into high status occupation would make children more likely to also regard their opposite sex parents as a role model. However, this hypothesis did not receive support. The result for girls can be interpreted as a sign that sex-role modeling some extent can be one reason behind the persistent sex segregation in the labor market.

Keywords

Occupational preferences, occupational aspirations, sex-role model, gender socialization, occupational gender segregation, intergenerational transmission
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Introduction

Even if women have entered previously male dominated high skilled sectors over the past half-century, the Swedish labor market, as well as those in other Western countries, remains highly gender segregated (i.e. there is an unequal distribution of men and women across occupations) (Halldén, forthcoming; Nermo, 1996). This is problematic for several reasons. Female-dominated jobs are valued lower than male jobs with comparable level of education and skills (e.g. England et al, 2000). Also, if only half of the population considers some occupations to be possible options shortages of qualified personnel can be exacerbated (Charles and Bradley, 2009). For example in Sweden the need for workers within the female-dominated care sector will increase over the next ten years. Therefore the Swedish Association of Local Authorities and Regions (SKL) (2014) stresses the importance of increasing the interest among young men for this kind of work.

Occupational aspirations formed in childhood and youth have been shown to have long-term effects on people’s later labor market behavior (Okamoto and England, 1999; Polavieja and Platt, 2014). Thus, boys’ and girls’ preferences for doing different types of work will contribute to the segregated labor market (Charles and Grusky, 2004). Early life experiences are of great importance for determining occupational aspirations (von Otter, 2014a). According to socialization theories, parents are seen as the most important influences on children’s aspirations. The sex-role model argues that children regard their same-sex parent as a role model, which affects decisions and plans about a future occupation (Marini and Brinton, 1984; Korupp et al., 2002; Boyd, 1989). Having a mother employed in a female dominated occupation might thus make a girl more likely to prefer a gender typical occupation, while having a father employed in a female dominated occupation would make a boy more likely to consider a gender atypical occupation (and vice versa).

The study at hand examines a supply side determinant of occupational gender segregation: the intergenerational transmission of the gender composition of occupations. The aim is to investigate the link between the gender composition in Swedish children’s preferred occupation and the gender composition in the parents’ occupation. Children’s occupational

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1 In this study the gender composition of an occupation is defined as the percent of women who works in a particular occupational group.
preferences (instead of their actual labor market behavior) are particularly well suited for evaluating the role of parental employment patterns. This is because childhood views about different occupations are less determined by opportunity structures in terms of educational possibilities and labor market demand for example, than are their actual occupational outcomes (Schoon and Parsons, 2002).

To my knowledge, there is only one recent study that investigates the association between the gender composition of parent’s occupation and children’s occupational aspirations, using British data (Polavieja and Platt, 2014). The main contribution of the present study is the use of Swedish data and a young cohort, children in the ninth grade of compulsory school\(^2\). Sweden today is a particularly interesting case because of the long history of female labor force participation and the high degree of women in high skilled occupations (Magnusson, 2009). The data that will be used are the Swedish part of the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU). This data are a unique large scale national representative longitudinal cohort study that have been collected in three waves, in 2011 when the children were in 8\(^{th}\) grade, in 2012 when the children were in 9\(^{th}\) grade, and in 2013, when most had entered upper secondary school.

# Background and previous research

The background chapter is structured in the following way. First, I will briefly describe the Swedish labor market, focusing on gender segregation by occupation. The next section focuses on occupational aspirations. Thereafter, theories regarding gender differences in children’s aspirations are reviewed. Next, I discuss how status and gender are both important determinants of children’s aspirations. Lastly, I review previous research that focuses on the link between the gender composition of parents’ occupation and the gender composition of children’s actual or preferred occupation.

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\(^2\) Most of the children are born in 1996 and are around 15-years-old when the question about their occupational aspiration was asked. (In some cases information about their occupational aspiration in the ninth grade was missing, if so this information was collected one year later if available.)
Gender segregation by occupation in Sweden

In 1960 female labor force participation was low and women who did work were often employed as office clerks or domestic servants (Nermo, 1996). Since then changes have occurred and today the Swedish labor market is characterized as having one of the highest rates of female participation in the world (Boye and Evertsson, 2014). New female-labeled occupations within the public sector emerged in the 1970s and the expansion of provisions such as publicly provided childcare made it easier for women to combine work and family life (ibid). During the last decades Swedish women’s labor force participation has continued to grow and today about half of the Swedish labor force consists of women. In 2014 77 percent of all women and 83 percent of all men between the ages of 20-64 were employed (Statistics Sweden, 2014). Women work on average 35 hours per week, while men on average work 40 hours (Boye and Evertsson, 2014).

But women have not only entered female dominated occupations. The inroads women have made into previously male-dominated highly skilled occupations have also been important (Nermo, 1996). Previously, mainly men occupied high status jobs while both men and women occupied low status jobs, but in different sectors. Today, in Sweden as well as in many other Western countries, women have a higher level of education than men (Charles and Bradley, 2009) and have entered high status occupations (e.g. England, 2010). High-prestige occupations in Sweden (often jobs with high educational requirements and high wages) are also the most gender-integrated occupations, while occupations with lower prestige are much more gender segregated (Magnusson, 2009). Thus, to some extent the labor market has become more gender integrated, especially in high skilled occupations. But men are still overrepresented in top wage positions (Bihagen et al, 2014) and earn, on average, more than women (Boye et al, 2014). Further, men and women still largely work in different occupations. While women work in the public health care industry and social services, men to a large extent work in the private manufacturing industry (Löfström, 2004).

There are several reasons for why the horizontal gender segregation (meaning that men and women sort into different occupation) is persistent. Explanations can be divided into supply-side and demand-side factors. Demand-side explanations focus on labor market constraints, such as different types of discrimination by employers. For example, an employer might chose to hire a man rather than a woman as a truck driver due to a belief in natural characteristics the man is assumed to possess (e.g. that he is better at driving a truck) (Charles
and Grusky, 2011). Demand-side factors are important, but the ratio of qualified men and women available for an occupation is another important factor. Supply-side explanations therefore instead turn the focus on the employees. Men and women choose different educations and prefer different occupations. This is a very important reason why men and women largely work in different occupations (ibid). In the next section I will turn to the focus of this study, occupational aspirations and describe how occupational aspirations can be understood, and summarize empirical studies of how boys and girls occupational aspirations differ.

**Occupational aspirations**

In this section I will discuss the concept occupational aspirations. I will also describe gender differences in occupational aspirations among Swedish children. Occupational aspirations can be defined as “point in time expressions of occupational goals” (Johnson, 1995). In the present study occupational aspirations is measured as the occupation that children report as their most preferred one when they are around 15 years old (see a detailed description in the data and sample section).

The distinction between occupational expectations and occupational aspirations (also called occupational preferences here) is important. Expectations refer to the occupation the child believes s/he will achieve, while occupational aspirations or preferences refer to the child’s most preferred occupation. Thus, aspirations are not as affected by various constraints as expectations (Rudolphi 2014:149). To exemplify, let's say that a boy’s most preferred occupation is to be an engineer. But due to e.g. low support from home, low grades, etcetera he might conclude that this is too hard for him to attain, and therefore opt for a career he finds to be the most realistic one for his own ability, e.g. as a construction worker. There is only information about children’s aspired occupation in the dataset used for this study. It is possible that there exists a gap between the occupation children believe that they will achieve and the occupation they would prefer the most. However, children’s occupational aspirations are relatively realistic and close to the occupation that they will be able to achieve around the age of 14 (Gottfredson, 1981). In regard to educational aspirations, Rudolphi (2014) for example shows that the match between the children’s aspired and expected highest education is high.

3 Or idealistic aspirations and realistic aspirations, as Gottfredson (1981) define it. See her model below.
In the introduction I argued that children’s occupational preferences are more useful than actual labor market behavior when the interest lies in evaluating the impact that parents have on children’s aspirations. This is because childhood views about different occupations are less determined by opportunity structures in terms of educational possibilities and labor market demand for example, than are their actual occupational outcomes (Schoon and Parsons, 2002). However, occupational aspirations are also likely to some extent to be affected by labor market constraints; such as assumed discrimination and the perceived chances of getting a job in the aspired occupation (von Otter, 2014b). Previous research also shows that, even if children often do not end up in the exact same occupation they aspired to when being young, aspirations tend to “…mirror broad occupational paths that children will choose later in life” (von Otter, 2014b:6). This has been shown to be true especially in regards to the gender composition of their aspirations (Okamoto and England, 1999; Polavieja and Platt, 2014; von Otter, 2014b).

Gender differences in children’s occupational aspirations show similarities to the gender segregation in the labor market described above. Research from the ’80s and earlier show that boys on average preferred jobs with higher status than girls (for a review see Marini and Brinton, 1984). However, more recent research shows that this is no longer the case. Today girls tend to aspire for occupations with somewhat higher status than boys (Sikora and Pokropek, 2011; Polavieja and Platt, 2014). Konrad et al. (2000) studied gender differences in preferences for different occupational attributes in 242 samples collected in the United States between 1970 and 1998 in a meta-analysis. They showed that gender differences in attributes associated with high status occupations (such as preferences for power, prestige, using one’s abilities etc.) have disappeared over time due to girls’ higher valuation of such attributes in the younger cohorts.

Even if there are rather small gender differences in aspirations of occupational prestige today, there is evidence that boys and girls still tend to prefer different occupations according to gender composition. Using data from the 2006 PISA study, Sikora and Pokropek (2011) show that 15-year-old girls in most included countries on average expected to work in occupations with higher prestige than boys did. However, the occupations boys and girls reported differed to a large extent. This is also indicated by a Swedish Government Official Report (SOU) from 2004 where the authors show that when young boys and girls were asked to report the occupation they would prefer as adults, boys reported typical male occupations while girls reported typical female occupations. Polavieja and Platt (2014) further show that English
children, particularly boys, still tend to prefer occupations that are mainly occupied by people of their own gender.

**Theoretical perspectives**

As described above, there are different types of explanations to why the labor market is gender segregated. This thesis takes a supply-side perspective by testing the importance of socialization through intergenerational transmission of the gender composition in parent’s occupation to the composition in children’s aspirations. In this section this perspective will be described in more detail. I will also briefly describe how it differs from other supply-side perspectives commonly used to explain gender differences in occupational preferences\(^4\). Common criticisms of the socialization perspective will also be discussed. Further, by relating socialization to structural perspectives, I show how socialization can be seen as one of the mechanisms that uphold the social structure of gender (Risman, 2004).

Neoclassical economic theories have often been used to explain why men’s and women’s work preferences differ. According to Becker (1981), the family acts as one unit and the members of the household have a common goal to maximize the family’s welfare. This is achieved through specialization. Men are more successful in paid work (i.e. they earn more) and will therefore specialize in paid work and invest more in human capital, such as education. Women, on the other hand, take time off of paid work because of childbearing, and specialize on the home front. According to a related hypothesis, women will choose female dominated occupations since those occupations have lower degree of depreciation in earnings from times of absence (for taking care of children), compared to male dominated occupations (Polachek, 1981).

However, when it comes to explaining why boys and girls prefer different occupations today those theories fall short. First of all, the idea of specialization can be questioned today because

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\(^4\) There are numerous theories that are used to explain how gender differences in boys’ and girls’ preferences for different occupations occur (and why there exists variations among different boys’ preferences and variations among different girls’ preferences for different occupations). The aim of this section is not to summarize them all but to provide a background for the focus of this thesis. For summaries of other perspectives and more in-depth descriptions of the perspectives presented in this section see for example 1) England (1992) for descriptions of supply-side theories explaining gender differences in the labor market; 2) Hakim (1996) for a review of economic and socialization perspectives and a presentation of her preference theory; 3) Jonsson (1999) who shows how a rational choice model can be applied to understand gender differences in educational choices; 4) Marini and Brinton (1984) or Ryle (2012) for a summary of how different socialization theories explain how gender differences in occupational preferences occur or 5) Heppner (2013) for a summary of how gender is incorporated in theories of career development.
for example 1) women’s level of education is higher than men’s (i.e. it seems irrational to invest in this type of human capital if they will not use it), 2) women are no longer on average to a greater extent employed in occupations with lower prestige, and 3) women participate in the work force to almost as high an extent as men (Oppenheimer, 1997). Further, female dominated occupations have not been shown to give a higher lifetime earning in combination with childbearing than male-dominated occupations (e.g. England, 1982; Okamoto and England, 1999). It is thus likely that other factors than boys and girls different plans for work life and family life explains why they still prefer different occupations.

Many instead point to gender socialization as the main explanation for why boys and girls sort into different occupations (Marini and Brinton, 1984). Gender socialization can be defined as “…the process through which individuals learn the gender norms of society and develop an internal gender identity” (Ryle, 2012:98). The process of internalization is important in socialization, meaning that we adopt the (gender) values and norms of a certain culture and regard it to be part of ourselves (Ryle, 2012:120). According to socialization theories, a person’s identity is the result of a lifelong process and can be divided into two different stages: primary socialization and secondary socialization. Primary socialization is the most important stage and happens during the first years of a child’s life. The family, and particularly the parents, is regarded as having the most important influence. Children learn the appropriate values, attitudes and actions for their gender by observing that their mother and father are employed in different occupations, do different things at home, and have different interests (Marini and Brinton, 1984). By doing so, young boys and girls develop different preferences and skills that are appropriate for their gender in a given culture, such as preferences for performing different types of tasks. Secondary socialization is the process that continues all through life, where people’s identities developed during primary socialization can both change and become more cemented (Ryle, 2012).

According to a relating model, the sex-role model, boys identify with their father and act as their fathers do, while girls identify with and imitate their mothers (Boyd, 1989; Korupp et al., 2002; Marini and Brinton, 1984). When regarding the gender composition of children’s occupational preferences it is hypothesized that the gender composition of the same sex parent’s occupation is an important determinant of the gender composition of the same sex child’s occupation (Corcoran and Courant, 1987). Having a (same sex) parent employed in a gender typical occupation will make the child more likely to him/herself also prefer a gender typical occupation, and having a (same sex) parent employed in a more gender atypical
occupation will make the child more likely to also consider such an occupation. This hypothesis can thus be used to understand the persistence of the horizontal gender segregation.

One influential critique of the socialization perspective is the *doing gender* approach introduced by West and Zimmerman (1987). They argue that gender identity is not internalized in the individual, but a social construct that we perform and reproduce in everyday interaction. Relating this to the labor market it can be argued that when a carpenter is building a wall and when a health care assistant is taking care of a patient they are not just performing their work but also 'doing gender'. Deviating from one's gender category is costly for individuals, a woman working as a carpenter is for example at risk of being regarded as manly. Most people will avoid the stigma associated with deviating from one's gender.

However, it has also been argued that instead of putting this interactional understanding of gender in opposition to the socialization perspective, both perspectives are relevant when gender is understood as a social structure. Risman (2004) describes gender as a social structure containing three different dimensions: the *individual dimension* (characterized by the socialization approach), the *interactional dimension* (e.g. the doing gender approach) and the *institutional domain* (e.g. ideology, legal regulations and distribution of resources) (ibid.).

*Gender essentialism* is one example of an ideology that upholds gender (Ridgeway, 1997; Risman, 2004). Gender essentialism refers to the beliefs that men and women act differently; have different interests; and are good at doing different things because of natural biological differences between men and women (Charles and Grusky, 2011). These taken-for-granted beliefs result in *gender stereotypes* about male and female characteristics (Konrad et.al. 2000). Men are assumed to be more interested in technical tasks and more suitable for physical hard work. Women are on the other hand assumed to be well suited for care work due to gender stereotypes of women as having natural caring and serving abilities. Gender essentialist ideas are reinforced both by processes in the individual and interactional dimensions (Risman, 2004). An example of the interactional level can be found in the “stereotype threat” literature. When applied to a gender difference in occupational aspirations, it has been shown that boys' and girls' assessments of their competence in different areas are affected by gender stereotypical beliefs, and that their own assessments affect their preferences for different type of work (Correll, 2001). From the individual dimension, socialization is seen as an important mechanism in internalizing gender stereotypical ideas among boys and girls, affecting their occupational aspirations, as argued above.
When understanding gender as a social structure, it is easier to understand how changes come about (Evertsson, 2010:59). Structures can become internally contradictory, which can lead to them also being questioned (Evertsson, 2010; Risman, 2004). As an example Evertsson (2010) points out the changes that have happened to the division of labor in Sweden since the '70s, when women entered paid work and new highly skilled occupations to a greater extent. When women’s labor market participation increased, more people started to question why women should do the lion's share of the work in the household and why men should occupy leading positions to a greater extent than women (Evertsson, 2010). Even so, the labor market remains segregated. Socialization theory thus provides us with a useful framework for understanding the persistence of this labor market structure. If boys and girls prefer occupations similar to those of their same sex parent, this points to a slow change in the structures of the labor market.

Before reviewing previous studies on the topic, I turn to a key factor when studying the correlation between the level of gender segregation in mothers’ and fathers’ occupations, and the level of gender segregation in children’s aspirations; that is, parents’ socioeconomic position.

**Class position and gender**

This study focuses on the importance that the gender composition of parents’ occupation has for the gender composition of children’s aspiration. The gender composition in the child’s occupational preference is also likely to be related to their parents’ socio economic status and educational attainment and this section will therefore discuss this topic.

Parents’ socioeconomic status influences their children’s occupational achievement and educational level (for a review of previous research on the topic see Breen and Jonsson, 2005). Parents who have a high level of education and who are employed in skilled occupations have cultural, social and economic capital that their children benefit from (ibid). To some extent this relationship is due to the fact that children from more privileged backgrounds on average succeed better in school (i.e. get better grades), but even when controlling for such factors there is a positive relationship between parental background and children’s own achievements (ibid). According to the status maintenance mechanism, the reason for this relationship is that children try to avoid downward mobility, and strive for an
occupation with at least as high a skill level as their parents’ - or higher (Breen and Yaish, 2006).

According to Jonsson et al. (2011) a part of the intergenerational (im)mobility can be accounted for by taking into account the intergenerational transmission of specific occupations between children and their father's or mother's occupations. Thus, children often end up in the exact same occupation as their parent. According to this micro class perspective it is occupational (and not class-) specific skills, networks, etc., that are transmitted from parent to child and thus make them likely to choose the exact occupation as their parents’ (ibid).

England (2010) and Gottfredson (1981; 1996) argue that children (mainly girls in England’s case) prefer high status occupations, but argue that what is even more important is the gender composition of occupations. According to those authors, gender is the most important part of individuals' identities.

Figure 1. Gottfredson’s cognitive map of occupations


According to Gottfredson (ibid) all individuals in a society share a common “cognitive map of occupations”. This map has a vertical dimension according to occupational prestige (the overall desirability for different occupations) and a gender dimension: masculinity-femininity. Occupations with high prestige require high intelligence and high effort in order to be attained. Thus, in this map occupations are seen as more or less male or female and more or less prestigious. When children reach about age 14, they will have short-listed acceptable occupations based on perceived effort, prestige and gender, which Gottfredson describes as
the zone of acceptable occupations. Within this zone lie occupations that the child believes are not too hard to attain, but still not with too-low status, and not too masculine or not too feminine (ibid).

But some occupations within the zone of acceptable occupations might be impossible for the child to attain. As mentioned above, children might have to give up their favorite alternatives for less attractive but more accessible ones. However, children are more likely to compromise on prestige rather than to adjust along the gender dimension if the most desired occupation is unavailable (ibid).

England (2010) similarly argues that high status is important for girls as they compare themselves to their mothers and want to end up in an occupation with higher status than them. Girls will, however, only choose gender atypical occupations if it is the only way for them to achieve upward mobility. In the past, when a larger number of high status occupations were male dominated, striving for upward mobility was more likely to be associated with striving for a more gender-atypical occupation for girls. For a Swedish cohort born in 1953, who grew up during a time where most high status occupations were male dominated, von Otter (2014b) shows that girls who came from families with high socioeconomic status were more likely to have gender atypical occupational preferences than other girls. She further shows that this was partly because they more often strived for occupations with higher status than other girls, and to achieve upward mobility they had to opt for male dominated occupations. Looking at today's labor market, then, this is likely to be one explanation for why high status occupations are gender integrated whereas lower status occupations are gender segregated. If the gender composition of occupations and upward mobility are among the most important factors children take into account when forming their occupational aspirations, their incentives for preferring gender atypical occupations with lower status are low. Today, when most high status occupations are gender integrated and occupations with low status are more gender segregated, high status preferences are likely to be related to having less gender-typical preferences, both for boys and for girls.

Above I have argued that children consider both the gender composition and the status of occupations when forming their occupational preferences (England, 2010; Gottfredson, 1996). In the previous section the sex-role model was presented, according to which children are

5 A gender atypical occupational preference was defined as occupations where less than 30 percent employed in the occupation were female. Further, the girls in her sample were 13 years old at the time they answered questions about their occupational preferences.
more likely to prefer a gender typical occupation if his/her same sex parent is employed in such an occupation. According to the sex-role model, children are likely to follow their same sex parent’s labor market behavior. The next section turns to previous studies that investigated the link between the gender composition of parent’s occupation and the gender composition of children’s (aspired or actual) occupations.

**Empirical research**

The focus of this study is on children’s occupational aspirations, or more specifically on the gender composition of children’s occupational aspirations. To my knowledge there are few studies that investigate the association between the gender composition of parents’ occupation and the gender composition of children’s occupational aspirations. There are more studies that focus on children’s actual occupation as the outcome. I will begin with a review of studies where the outcome is actual occupations, and then turn to studies where the outcome is occupational aspirations.

I have found four previous studies that investigate the association between the gender compositions of children’s occupation and the gender compositions of their parent’s occupation (Corcoran and Courant, 1987; Hederos, 2014; Korupp et al., 2002 and Okamoto and England, 1999). They all use the percent of females occupied in a given occupational group as their outcome. Further, all use data from nationally representative surveys (with the exception of Hederos (2014) who uses a random sample drawn from Swedish register data). I will shortly describe their findings below.

Corcoran and Courant (1987) use American data consisting of girls and look at the association between the gender composition of girls’ and their mothers’ occupations (but not fathers’). They find a positive and significant correlation between the gender composition of girls’ occupation (in 1980, when the respondents were between 25-30 years old) and their mothers’ occupation. They conduct separate OLS regressions for “non-black” and “black” American girls. Net of controls\(^6\), they find that 1 percent change in the gender composition of mother’s occupation is associated with 0.14 percent change in the gender composition of “non-black” girls’ occupations, and 0.25 percent change in the gender composition of “black” girls' occupations.

\(^6\) They control both for the girls’ and their parents’ education, family income, number of siblings and whether the girls only grew up with their mothers or not.
Korup et al. (2002) point to similar results in the Netherlands. Their outcome is the gender composition of men’s and women’s (cohorts born between 1927 and 1975) first occupation after finishing school. Using a structural equation model, they find that the gender composition of both men’s and women’s first occupation is positively and significantly correlated with the gender composition of the same sex parent’s occupation. In other words they found that the likelihood of a son to choose a male dominated occupation was higher if his father worked within a more male-dominated occupation, and vice versa for daughters and their mothers\(^7\). They do not find any significant association between the gender composition of daughter’s and father’s occupation, or between son’s and mother’s occupation. They confirm the sex-role model, but note that the correlation is rather weak. Further, they show that the association between the gender composition of daughters’ and their mothers’ occupation has become stronger over time, i.e. the association is strongest for the youngest cohorts. They do not find any change over time regarding the association between sons’ and their fathers’ occupation (ibid).

Similar results have also been found in Sweden. Conducting OLS regressions separately for men and women Hederos (2014) finds a positive and significant association between the gender composition of parent’s occupation and the same sex child’s occupation\(^8\). Hederos finds that one percent increase in the percent of women employed in mother’s (father’s) occupation was associated with 0.03 (0.07) percent increase in the percent of women employed in the daughter’s (son’s) occupation. There is no significant association between girls and fathers, but she finds a positive significant (although very weak) association between boys and their mothers.

Okamoto and England’s (1999) result differs from the three studies above in that they do not find support for the sex-role model when looking at the correlation between the gender composition of mothers’ and daughters’ occupation. They conduct OLS regressions (separately for boys and girls). Gender composition of children's occupation is measured in 1993 when the respondents were 28 to 35 years old. They found no significant correlation between the gender composition of girls’ occupations and mother's or father's occupation. For boys, however, both the percent of females employed in mothers’ occupations and the percent

\(^7\) In the models they control for if the mother is a homemaker, mother’s and father’s occupational status and mother’s and father’s education.

\(^8\) In the models she controls for mother's and father's education and the child's municipality of residence while growing up. Her sample is restricted to individuals born between 1943 and 1952 and the occupation is measured when the child was 40 years old.
females in fathers’ occupations had a positive significant effect on the percent females employed in the son’s occupation. Net of controls, they find that a 1 percent change in the gender composition of fathers’ (mother’s) occupation is associated with a 0.09 (0.05) percent change in the gender composition of son’s occupation. The authors conclude that this indicates that both mothers’ and fathers’ may act as role models for their sons.

The studies above investigate the correlation between the gender composition of parents’ occupation and the gender composition of the occupation that children are employed in as adults. The focus in the present study is, however, children’s aspirations, and not their actual occupations as adults. I have found two studies on this topic, Shu and Marini (1998) and Polavieja and Platt (2014). They base their results on nationally representative surveys conducted in the United Kingdom (Polavieja and Platt, 2014) and the United States (Shu and Marini, 1998).

Using OLS regressions, Shu and Marini (1998) investigate the correlation between the percent of women employed in parent’s occupation and the percent of women employed in the occupation that children (aged 14 to 22) wanted to have when by age 35. The American survey data are based on two different cohorts, the first born between 1944 and 1954 and the second born between 1957 and 1965. The authors conducted separate analyses for each cohort, boys and girls, and black and whites. They found a positive and significant correlation between the gender composition of girls’ aspirations (both black and white) with the gender composition of their mothers’ occupation, but only for the youngest cohort. For boys, Shu and Marini (1998) found a positive and significant association between black boys (but not white boys) and their fathers’ occupations for both cohorts.

Polavieja and Platt (2014) use British survey data based on younger cohorts than Shu and Marini. The authors conducted logistic regressions where the outcome was “sex-typed occupational aspirations”11. The level of gender segregation in the mother’s and father’s occupation was measured with a three-category variable: sex-atypical occupations, intermediate occupations and sex-typed12. In logistic regression models they show that girls

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9 In the regressions they controlled for mothers and fathers socioeconomic status (occupational prestige); the number of siblings, type of community of residence (rural or not) age of the respondent and if the respondent had entered the labor market at the time when they answered the question about their preferred occupation.
10 The respondents in their sample were born 1979 – 1987 and were 11-15 years old at the time when they answered the survey question about what occupation they would like to have as adults.
11 See the next footnote.
12 Sex-typed occupation is defined as occupations where >30% of persons own gender is employed. Intermediate occupation is defined as occupations where 30-70 % of persons own gender is employed. Sex-atypical occupation is defined as occupations where <30% of persons own gender is employed.
whose mothers have a gender atypical job are significantly less likely to aspire to a gender typical occupation than girls whose mothers have gender intermediate occupations (the reference category). Neither having a mother employed in a gender typical occupation compared to intermediate occupation, nor the gender typicality of father’s occupation, has a significant effect on the girls’ aspiration for a gender typical occupation. For boys, having a father who works in a gender typical occupation had a positive and significant effect on boys’ aspirations of gender typical occupations. Having a father employed in a gender atypical occupation, or the gender typicality of mother’s occupation has no significant effect on boys’ aspirations for a gender typical occupation.

Table 1. Summary of previous result

<table>
<thead>
<tr>
<th></th>
<th>Same sex association</th>
<th>Opposite sex association</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mother-Daughter</td>
<td>Father-Son</td>
</tr>
<tr>
<td>Occupation as the outcome</td>
<td>Korupp et al. (2002)</td>
<td>Yes</td>
</tr>
<tr>
<td>Hederos (2014)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Corcoran and Courant (1987)</td>
<td>Yes</td>
<td>Not tested</td>
</tr>
<tr>
<td>Okamoto and England (1999)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Aspirations as the outcome</td>
<td>Shu and Marini (1998)</td>
<td>Yes (for 1 of the 2 cohorts)</td>
</tr>
<tr>
<td>Polavieja and Platt (2014)</td>
<td>Yes (some support)</td>
<td>Yes (some support)</td>
</tr>
</tbody>
</table>

Table 1 summarizes the results from previous research. The findings are to some extent in line with the sex-role model's prediction, that there exists an association between the gender composition of parents’ occupation and the gender composition of their same sex children’s occupation. The exception is Okamoto and England (1999), who did not find an association between the gender composition of mother's and daughter's occupation. The results regarding occupational aspirations are less clear; both studies found some support regarding the association between mothers-daughters and fathers-sons (Polavieja and Platt, 2014 and Shu and Marini, 1998).

Three of the five studies that also investigated the link between the gender composition between fathers-daughters and mothers-sons did not find any association (Korupp et al., 2002; Polavieja and Platt, 2014 and Shu and Marini, 1998). Two studies found that the gender composition of mother’s occupation was positively related with the gender composition of

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13 Controlling for age, absent father, parental education, if the child aspires for the same occupation as his/her parents, division of housework between the parents, log of hourly wage in aspired occupation etc.
boys’ occupation, although the effect was weaker than that between boys and their fathers (Okamoto and England, 1999; Hederos, 2014).

**Hypotheses**

The aim of this study is to provide an empirical investigation on how the level of gender-segregation of parents’ occupation correlates with children's occupational aspirations. Most previous research does find an association between the gender segregation in children’s and their same sex parent's occupation. Since few studies look at children's aspirations, and only one uses up-to-date data, it is of great importance to test this association in contemporary Sweden. According the sex-role model children regard their same sex parents as role models. The first hypothesis is:

**Hypothesis 1:** Net of controls, there is a positive and significant relationship between the gender composition of children's occupational aspirations and their same-sex parents’ occupation.

As noted by Okamoto and England (1999) mothers might act as role models also for their sons. Since both women and men can be found in high skilled occupations today, perhaps boys and girls would regard both of their parents as role models. Sweden is a particularly good context to study since the female labor force participation is, and has for a long time been, high. Women’s strong labor market attachment, including in high skilled occupations, may lead to socialization via both parents being a more likely scenario. Therefore, the second hypothesis is that:

**Hypothesis 2:** Net of controls, there is a positive and significant relationship between the gender composition of children’s occupational aspiration and the gender composition in their opposite-sex parents’ occupation.

**Data and method**

**Data and sample**

The data that will be used in this thesis comes from the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU). This is a large-scale cohort survey that has
been conducted in four countries (Sweden, Netherlands, Germany and United Kingdom). In this study only data from the Swedish part of the survey will be used (I only had access to the Swedish part of the survey).

The survey is designed to be nationally representative, with an oversample of schools with a higher proportion of students whose parents come from non-Western countries.¹⁴ The population for the first survey was Swedish children in eighth grade (most children were born in 1996 and were around 14-year-old). Before the sampling, the schools were divided into four different strata on the basis of the percent of pupils in each school with immigrant background, and schools with less than 10 percent pupils with immigrant background¹⁵ were given a lower probability of being selected (see CILS4EU, 2014 for details). The sampling process used a two-stage stratified cluster design. In the first stage the unit was schools that were sampled from a national list of all schools with eight grade classes. The schools were drawn with probabilities proportional to the size of the school (PPS) (ibid.). In the second stage, after the schools were selected, two eighth grade classes from each school were selected (or one if there was only one class). In cases where there were more than two eighth grade classes, two were randomly selected.

The survey has been conducted in 3 waves. The first wave consisted of a paper survey that was filled out by the students in their classrooms when the children were in eighth grade. One year later, when the children were in the ninth grade (age 15), the same classes participated in the follow up survey, again conducted in classrooms. The third wave was conducted one year after the second wave when most children had proceeded to upper secondary school. The third wave consisted of an Internet survey. All the students that had participated in wave 1 and/or wave 2 were sent a letter with information about how to access the survey, and in cases we had their email address (selected from previous surveys) they were also sent an email. The first wave was conducted in 2010-2011, the second wave was conducted in 2011-2012 and the third wave was conducted in 2013. In the first wave the total sample consisted of 251 participating classes (5,834 pupils) and the response rate was 86 percent (5,025 persons). In the second wave the total sample consisted of the same 250 classes¹⁶ (5,877 pupils) and the

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¹⁴ Non-western countries are defined as countries other than Australia, Belgium, Canada, Denmark, Faroe Islands, Finland, France, Germany, Greenland, Ireland, Iceland, Liechtenstein, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Austria, Sweden, Switzerland, United Kingdom, United States, i.e., Western Europe (excluding South and East Europe), the U.S., Canada, New Zealand, and Australia.

¹⁵ Immigrant background is defined as children who themselves are born in Non-western countries, or have at least one parent who are born in a Non-western country.

¹⁶ One class dropped out of the study.
response rate was 81 percent (4,804 persons). The sample in the third wave consisted of children who had participated in wave 1 and/or wave 2 (5,721 persons). The response rate was 50.5 percent (2,094 persons).

Information about parents’ occupation was only collected in wave 1 and questions about children’s preferred occupation was not asked in wave 1, but only in wave 2 and wave 3. To be able to include the respondents in the study they will need to have responded to both the first wave and a later wave, this gives me totally 4,492 respondents. After excluding respondents with missing information on any of the variables used in this study (due to item-non response, or due to the respondent giving an non-encodable answer), the sample used for the analysis in this study consists of 2,494 children (1,301 girls and 1,193 boys). The quite large unit non-response might create biased result and this should be kept in mind when interpreting the results.  

The sampling process has implications for the generalizability of the results to the population (i.e. Swedish children born in 1996) for two reasons. First of all, the sampling design results in varying selection probabilities among students, since students in schools with a high proportion of children with immigrant parents have a larger probability of being selected than students in schools with a lower proportion. Since the sample consists of an oversampling of immigrant children, the summary statistics will be weighted with a weight constructed to control for this (see CILS4EU, 2014 for further details). In the regressions weights will not be used. I will instead control for school stratum with three dummy variables, leaving School stratum 1 (schools with 0-10 % immigrants) as the reference category (see e.g. Parameshwaran (2014) who uses the same method on the same data as I use here).

Second of all, an assumption in OLS regression is that the units of analysis should be independent from each other in order for the data to be generalizable to the entire population from which it has been drawn (Angrist and Pischke, 2009:293). This assumption is validated due to the selection process where the units were not individuals, but schools in the first stage, and then classes. This is problematic since children in the same school might share similar background characteristics or be influenced by each other, or by the same teacher. Angrist and Pischke (2009:294) call this the clustering problem. One common way to deal with clustering

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17 In particularly the question about children’s occupational aspirations (that is used to create the outcome variable) force me to remove a lot of respondents (25%) due to them giving non-encodable answers. For an analysis relating to this see Appendix 1.

18 In regression analyses not presented here the regression models were weighted (excluding the controls for stratum), but this did not change the result to any larger extent. The result did not either change to any larger extent when using the other school stratum as reference categories in the regression analyses.
problems is to use clustered robust standard errors in the regression models (ibid). This has been implemented in the regression analyses.

Variables

This section describes each of the variables included in the analyses.

Dependent variable

The key outcome in the regression analyses is the *percent female employed in child’s aspired occupation*. This is a continuous variable and range from 1 to 100, indicating the percent of women employed in the child’s preferred occupation (in 2012, according to Statistics Sweden. See below for more information).

The question about the respondent’s most preferred future occupation was asked in the second and the third wave (at ages 15 and 16). This was done with the open question; “*What occupation would you like to have as an adult*”. It was also possible to tick an “I don’t know” box. I coded the open answers into the occupational classification codes using the four digits International Standard Classification of Occupation 08 system (ISCO-08). (For more information about ISCO08 see for example International Labour Organization (ILO)).

Using information on the number of men and women employed in each occupation I created the variable for the percentage of women employed in each occupational group. Information about the number of men and women employed in each occupation (according to four digit Standard för svensk yrkesklassificering (SSYK96)) is available on Statistic Sweden’s homepage; Statistic Sweden, Employment in Sweden). I used information about the number of men and women employed in each occupation in 2012, the year when the second wave was collected.

For boys 140 different occupations were coded and for girls a total of 128 different occupations were coded. Both in the second and the third wave 70 percent of the children were given ISCO08 codes and 29 percent did not know what occupation they would like to have as an adult. In both waves 2 and 3, missing or unserious/unclear answers (for example,  

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19 A key was used to transfer SSYK96 to ISCO08.
20 To investigate the stability in children’s aspirations the correlations between children’s aspirations in w2 and w3 have been tested. 1,219 respondents answered the question both w2 and w3 and the correlation between the answers when regarding percent women in the aspired occupation is rather high, 0.7.
21 The difference in the total number of occupations coded for boys and girls is likely to be a result of the fact that male occupations are classified more in detail that female occupations (Haldén, forthcoming).
‘pimp’) made up 1 percent of the sample. The responses from wave 2 were used when available. In cases where the respondent lacked an ISCO08 code from wave two, information from wave three was used when available to increase the sample size. Using this method I were able to give 76 percent of the respondents an occupational code.

The high number of children with non-encodable answers on this question can create biased results if this concerns children with certain kind of characteristics. In Appendix 1 I look at how the responses to this question differ by gender and by parental education. Girls with at least one highly educated parent were somewhat more likely to tick the “I don’t know” box and also less likely to having report an encodable answer, than girls who do not have any highly educated parent.

**Independent variables**

The variables percent of women employed in mother’s occupation and percent of women employed in father’s occupation are the most important independent variables. They are continuous variables ranging from 1 to 100, indicating the percent of women employed in the mothers’ and fathers’ occupational groups, respectively.

Information about parent’s occupation is based on children’s responses on the first wave of CILS4EU. Children answered two open questions; 1. *Think about your mother/fathers job. If he/she is not currently working, think about his/her last job. What is the name of this job?* 2. *Please describe what he/she does in his/her job.* The information was coded based on ISCO08. Then variables were created measuring the percent of women employed in the mother’s and the father’s occupations, following the same procedure as above.

To collect information about parents’ occupation from their children might be problematic since many might not know what work their parents do. In wave 1 a questionnaire was sent out to the parents and in this questionnaire they were asked questions about their occupations. However, due to the very low response rate in this survey, the children’s answers have been used here. Previous research shows that high-school-aged children are good at reporting their parent’s occupation accurately (Looker, 1989; Jerrim and Micklewright, 2014). While it
might be hard to know the degree of parent’s education, most children know what their parents do for a living.\(^2^2\)

Some earlier studies have included a dummy to measure if the child aspires for the exact same occupation as her/his mother/father (e.g. Okamoto and England, 1999; Polavieja and Platt, 2014). As argued by Jonsson (2011) many children will end up in the exact same occupation as their parents. I will control for this to see if an eventual association is entirely driven by children aspiring for the same occupation as their parents. This will be done with the two variables *direct imitation of mother’s occupation* and *direct imitation of father’s occupation*. In cases where the child has reported the same 3 digits SSYK96 code as their parent the variables are coded as 1, in other cases the variables are coded as 0.

I also control for parents socio-economic status by including two dummy variables measuring if parents have a university degree, *mother with university degree* and *father with university degree*. Information of parent’s education comes from register data. Parents with a university degree are coded as 1, and parents who do not have a university degree are coded as 0. As discussed in the theory section parent’s degree of education can affect children’s occupational aspirations 1) through the status maintenance mechanism and 2) through affecting children’s gender egalitarian values, making children of highly educated parents more likely to prefer more gender integrated occupations.

*Grade sum* (meritvärde) is the sum of the student’s 16 best marks in ninth grade and is also included as a control variable. This variable ranges from 0 (Failed in all subjects) to 320 (Passed with distinction in all subjects). Children take their own ability into account when deciding upon a future occupation and grade sum average is included to control for this (Gottfredson 1981).

Since aspiring for a high status occupation is often correlated with aspirations for a less gender-segregated occupation (because occupations with low status are more gender segregated than occupations with high status), the variable *Prestige in aspired occupation* is included. Prestige is based on Treiman’s Standard International Occupational Prestige scale (SIOPS) for the occupation to which the child aspires. This is a continuous variable ranging from 13 to 78 in my sample.

\(^2^2\)The correlation between children and parents report of parents occupation (percent of women employed in mother’s/father’s occupation) was 0.7, both regarding the mothers’ and fathers’ occupation.
I also include the control variable *foreign-born mother/father* to control for having parents who are foreign-born. This information is self reported by the children. This variable is coded as 1 if the child has a foreign born mother or father, and 0 otherwise.

It is possible that an absent father or absent mother also can have an effect on children’s occupational aspirations, but it is also likely that they have less impact since they interact with the children to a lower extent. Therefore I include the control variables *absent father* and *absent mother* to control for whether the child does not live with his/her mother/father. The variables are coded as 1 if the child reports that s/he does not live with his/her biological or adoptive father (either full-time or part-time), and 0 otherwise.

In the regressions I control for school stratum, as described in the data section above. I also include a variable to control for if information about occupational preferences comes from wave 2 or wave 3, coded as 1 if information comes from wave 3, and 0 otherwise.

There are other factors not included in my models that are likely to be important for children’s occupational aspirations. This could lead to problems with causality if eventual factors not included in my models correlates with my independent variables. Two previous studies have included a control for occupational prestige (Korupp et al. 2002; Shu and Marini, 1998), to control for parental socio-economic background (however most previous studies only uses parental education, as I do in this study). If occupational prestige would better capture the effect of parent’s socio economic background I risk the chance of not controlling for parents socioeconomic position in a sufficient way. However, in models not shown here I also controlled for occupational prestige (measured in SIOPS) in the models and this did not change my results to any larger extent. Some of the previous studies that investigate the link between the gender segregation parent’s and children’s occupations (/aspirations) have included a covariate for weather the child live in a rural area or not (Hederos, 2014; Shu and Marini, 1998). The argument for doing this is because people living in rural areas are argued to have less gender egalitarian values and this could thus make them more likely to prefer “gender stereotypical” occupations. I do not have access to this information, I will not control for this. It is also possible that other factors relating to parents occupation would affect children’s chances of preferring the same occupation as their parent. For example, having an unemployed parent might make the child less likely to prefer an occupation with a similar level of gender segregation. But since I only have information about the parents present employment status (and not for how long this has lasted) I will not control for this.
Method

Ordinary least squares (OLS) regression is applied to estimate the correlation between the gender composition of parents’ occupation and the gender composition of children’s occupational preferences. This is a method commonly used to analyze the association between a continuous dependent variable (as here, the outcome ‘percent female employed in child’s aspired occupation’) and one or more independent variable(s) (here, percent of women employed in mother’s/father’s occupation, and the control variables described above) \(^{23}\).

Using this method it is possible to study an association net of other factors, by the use of control variables (Edling and Hedström, 2003:80). In OLS regression it is assumed that there is a linear relationship between the dependent and independent variables. A straight line between dependent variable and the independent variable is calculated by using the method of least square (that create a straight line that minimizes the sum of the squares of the errors between the observed values on the dependent variable and the independent variables) (Ibid: 88-93).

Given that the sample is randomly drawn from the population I wish to generalize the findings to, a regression analysis can also tell us how likely it is that an observed correlation also exist in the population. The regression produces a \(p\) value, which gives information about the probability of calculating the given coefficient in the OLS regression, if there is no relationship in the population from which the sample was drawn (Edling and Hedström, 2003: 137). A \(p\)-value of 0.01 for example means that there is a 1 percent chance of getting the \(b\) value in the regression even though there is no correlation in the population. The model also produces a \(R^2\) value; this is the coefficient of determination. This value describes how much of the variation in the dependent variable the regression explains, compared to only using the mean of the dependent variable (ibid: 97).

I conduct separate analyses for boys and girls. I will include control variables stepwise in four different models. Model 1 includes the percent of females in mother’s and in father’s occupation. The subsequent models (Model 2 to 4) add variables to test whether the association between the level of gender segregation in parents’ occupation and the level of gender segregation in children’s preferred occupation is mediated by other variables. In

\(^{23}\) Polavieja and Platt (2014) used a binary outcome instead: “sex-typed occupational aspiration” (defined as occupations where 70 percent or more of a person’s own sex is employed). I preferred to use percent women in the occupation as the outcome since the variable is continuous. In models not shown here, I carried out robustness checks by conducting regressions with binary outcome (as Polavieja and Platt). This did not change my results to any larger extent.
Model 2, controls for whether the mother or father has a university degree are included. In Model 3, further variables are added to control for parental characteristics: a variable indicating if mother or father is foreign born, and variables controlling for whether the child aspires to the exact same occupation as his/her mother or father. In Model 4, children’s characteristics are included: grade sum average and the prestige score of the child’s aspired occupation.

As described above the data are oversampled on schools with children who have immigrant background. To adjust for this, all models will include control for which school stratum the child comes from. A dummy variable coded as 1 if the child’s report of occupational preference comes from wave 3 (otherwise coded as 0) is also included in all models (this variable is never significant in the models and is not shown in the tables below). Further, I use clustered standard errors to control for the sampling procedure. Before turning to the result of the regression analyses I will present descriptive statistics over the included variables.

Results

The result section is divided into two parts. In the descriptive section the included variables are described, and descriptive differences between boys’ and girls’ aspirations are presented. I also illustrate the difference between the gender typicality of girls’ (boys’) aspirations and the mothers’ (fathers’) occupation in the sample in histograms and present the 15 most common occupational aspirations for boys and girls, respectively. The next section consists of regression analyses where the hypotheses are tested using OLS regression, with separate analyses for boys and girls.

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Regression diagnostic (not presented here) was performed on the models to investigate that they do not violate against assumptions of 1) a linear relationship between the dependent and independent variables 2) that there is no multicollinearity between the independent variables 3) that there is homoscedasticity (i.e. that the error terms are evenly distributed) 4) and that no influential outliers exists. The models do suffers from heteroscedasticity, the models are preformed with robust standard errors and this is a way of adjusting for this. None of the other assumptions were violated in any larger extent.
Descriptive statistics

In this section descriptive statistics of the included variables are presented. All variables are weighted to control for the sampling procedure. In the first row in Table 2 the mean value (or the percent of the sample) for each variable is presented. In the second and the third row in Table 3 the mean values of the variables are presented separately for girls and boys. The stars in the fourth row indicate if there is a significant difference in the reported mean value between girls and boys.

**Table 2.** Descriptive statistics of the included variables (mean/%)

<table>
<thead>
<tr>
<th>Variables</th>
<th>All</th>
<th>Girls</th>
<th>Boys</th>
<th>Sign. diff. boys/girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females in children’s aspired occupation</td>
<td>40.5</td>
<td>52.3</td>
<td>28.4</td>
<td>***</td>
</tr>
<tr>
<td>Children with gender atypical aspirations</td>
<td>13.5</td>
<td>22.8</td>
<td>3.9</td>
<td>***</td>
</tr>
<tr>
<td>Grade sum average</td>
<td>227</td>
<td>235</td>
<td>218</td>
<td>***</td>
</tr>
<tr>
<td>Occupational status in children’s aspired occupation</td>
<td>51</td>
<td>53</td>
<td>50</td>
<td>***</td>
</tr>
<tr>
<td><strong>Parental characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother with a gender atypical occupation</td>
<td>13.4</td>
<td>13.4</td>
<td>13.5</td>
<td></td>
</tr>
<tr>
<td>Females in mother’s occupation</td>
<td>65.3</td>
<td>65.9</td>
<td>64.7</td>
<td></td>
</tr>
<tr>
<td>Father with a gender atypical occupation</td>
<td>6.2</td>
<td>6.6</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Females in father’s occupation</td>
<td>27.5</td>
<td>27.1</td>
<td>27.9</td>
<td></td>
</tr>
<tr>
<td>Foreign born mother/father</td>
<td>26.5</td>
<td>24.6</td>
<td>28.5</td>
<td></td>
</tr>
<tr>
<td>Mother’s with university degree</td>
<td>29.4</td>
<td>29.3</td>
<td>29.6</td>
<td></td>
</tr>
<tr>
<td>Father’s with university degree</td>
<td>17.1</td>
<td>15.8</td>
<td>18.3</td>
<td></td>
</tr>
<tr>
<td><strong>Other controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct imitation of mother’s occupation</td>
<td>1.8</td>
<td>2.0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Direct imitation of father’s occupation</td>
<td>4.0</td>
<td>2.0</td>
<td>6.0</td>
<td>***</td>
</tr>
<tr>
<td>Absent mother</td>
<td>63</td>
<td>39</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Absent father</td>
<td>224</td>
<td>130</td>
<td>95</td>
<td>*</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>2,494</td>
<td>1,301</td>
<td>1,193</td>
<td></td>
</tr>
</tbody>
</table>

* *** $p<0.001$, ** $p<0.01$, * $p<0.05$

Table 2 shows that children prefer occupations with on average 40.5 percent women. There is a large difference between girls and boys. On average, girls prefer occupations with 52.3 percent females while boys prefer occupations with 28.4 percent of females. The table also shows that 13.5 percent of the children aspire to gender atypical occupations (here defined as less than 30 percent of the child’s own sex occupied in this occupation). There are large and significant gender differences in several areas. Girls are much more likely to aspire to a gender atypical occupation than boys (22.8 percent vs. 3.9 percent). Girls’ grade sum is on
average significantly higher in ninth grade than boys’, and girls aspire to occupations with higher prestige than boys (the difference is small but significant).

Regarding parental characteristics, mothers on average work in occupations with 65.3 percent females while fathers work in occupations with 27.5 percent female. As Table 2 shows, girls on average are less “gender typical” in their occupational preferences compared to their mothers’ generation, while the average percent female in boys’ aspired occupation and fathers’ occupation is nearly identical.

As mentioned above, women have on average higher educational levels than men. This can also be seen when looking at the mean differences in mothers' and fathers' level of education. While 29.4 percent of the mothers have a university degree, the figure for fathers is only 17.1 percent.

The variable ‘direct imitation of mothers’ occupation’ measures whether the children aspire to the exact same occupation as their mothers’ occupation. 1.6 percent of the boys and 2 percent of the girls aspire for the same occupation as their mothers. This difference between boys and girls is not significant. Boys are however significantly more likely to prefer the same occupations as their fathers. 6 percent of the boys, but only 2 percent of the girls, prefer the same occupation as their fathers. For boys, it is much more common to prefer father’s occupation than mother’s occupation. For girls, on the other hand, it is almost equally common to prefer their mothers’ occupations as their fathers’ occupations.

Figure 2 and 3 represent the share of the parents (and children) in the sample who are employed in (or aspire to) occupations where a particular percent of women are employed. Figure 2 presents the pattern between girls and mothers in the sample, and Figure 3 presents the pattern between the boys and fathers in the sample. For example, the high increase, 25 percent, at 80-90 percent for mothers in Figure 2 above means that 28 percent of the mothers are employed in an occupational category where 80-90 percent is women.

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25 27 percent of the women and 19 percent of the men of the Swedish population in 2010 had a post-secondary education (3 years or more) (Statistic Sweden, 2012).
Figure 2. Percent females in girls’ preferred occupation and percent females in mothers’ occupation

Explanation of the figure: The x-axis represent the percent women occupied in an occupation in Sweden. The x-axis is divided into ten groups; 0-10%; 10-20%; 20-30% etc. The y-axis represents the percent of mothers (girls) in the sample who works in (prefer) an occupational group where a particular percent of women is employed.

Figure 2 shows that girls in the sample aspire to occupations with a lower share of women than in mothers’ actual occupations. Mothers are overrepresented in occupations with 80-90 percent women while girls are much more likely to prefer gender integrated and gender atypical occupations (occupations with 20-60 percent women). Figure 3 shows a rather similar pattern for boys and fathers. However, boys aspire to somewhat more gender integrated occupations than fathers. There are few girls who prefer occupations with less than 20 percent women, though not as few as boys who prefer the reverse.

Figure 3. Percent females in boys’ preferred occupation and percent females in fathers’ occupation

Explanation of the figure: The x-axis represent the percent women occupied in an occupation in Sweden. The x-axis is divided into ten groups; 0-10%; 10-20%; 20-30% etc. The y-axis represents the percent of fathers (sons) in the sample who works in (prefer) an occupational group where a particular percent of women is employed.
Table 3 below provides a description of the 15 most common occupations to which children in the sample aspire. The first column shows the occupational group according to SSYK96 (4 digit codes). The second column shows the number and percent of the girls in the sample who prefer this occupation. The third row shows the percent women employed in this occupation in the workforce. The forth to sixth row show the same thing for boys.

Table 3 shows, as expected from the figures above, that 11 out of 15 of boys’ most common occupational preferences are gender typical. Among girls the same number is only 6 out of the 15 occupations. None of the boys’ most preferred occupations are gender atypical, while 2 of the 15 most preferred occupations among girls are gender atypical (police officer and civil engineer). Thus, boys have much more “gender traditional” occupational aspirations than girls.

Table 3. The 15 most common occupational aspirations among boys and girls

| GIRLS | | BOYS |
|-------|-------------|--------|--------|-------------|--------|--------|
| Occ.group (SSYK96 4digit) | Girls sample (% in parentheses) | % female in occ. | Occ. group (SSYK96 4digit) | Boys sample (% in parentheses) | % female in occ. |
| 1 | 2221 Medical doctors | 101 (7.8) | 49 | 2142 Civil engineers | 115 (9.6) | 22 |
| 2 | 3450 Police officers | 83 (6.4) | 28 | 7139 Building finishers | 90 (7.5) | 3 |
| 3 | 2491 Psychologists | 71 (5.5) | 72 | 2419 Business prof. | 64 (5.4) | 47 |
| 4 | 2421 Lawyers | 67 (5.2) | 32 | 2131 Comp. syst. desig. | 63 (5.3) | 20 |
| 5 | 5141 Hairdressers | 62 (4.8) | 85 | 3475 Athletes etc. | 61 (5.1) | 29 |
| 6 | 2451 Authors, journalists | 52 (4.0) | 57 | 3450 Police officers | 56 (4.7) | 28 |
| 7 | 2419 Business prof. | 50 (3.8) | 47 | 2221 Medical doctors | 46 (3.9) | 49 |
| 8 | 2453 Musicians | 38 (2.9) | 54 | 7123 Carpenters | 41 (3.4) | 1 |
| 9 | 2429 Legal professionals | 38 (2.9) | 66 | 2421 Lawyers | 36 (3.0) | 32 |
| 10 | 2223 Veterinarians | 32 (2.5) | 73 | 2141 Architects | 34 (2.8) | 51 |
| 11 | 3239 Nursing prof. | 32 (2.5) | 91 | 2453 Musicians | 31 (2.6) | 54 |
| 12 | 2142 Civil engineers | 31 (2.4) | 22 | 7135 Plumbers | 28 (2.3) | 1 |
| 13 | 3471 Decorators | 31 (2.4) | 52 | 1319 Managers small ent. | 25 (2.1) | 30 |
| 14 | 2330 Primary educ.prof. | 30 (2.3) | 78 | 3143 Aircraft pilots | 24 (2.0) | 7 |
| 15 | 2492 Social work prof. | 30 (2.3) | 84 | 3121 Computer assistants | 23 (1.9) | 21 |

Explanation of the table: In cases where the occupation is also a gender typical occupation (defined as occupational preferences where 70 percent or more of the people employed in the workforce has the same sex as the respondent) this has been marked with bold text. In cases where the occupation is an atypical aspiration (defined as occupational preferences where 30 percent or less of the people employed in the workforce has the same sex as the respondent) this has been marked with italic.

Results from regression analysis

In this part of the analysis, the hypotheses are tested using multiple OLS regression. The analyses are, as described above, conducted separately for boys and girls. Table 4 presents the
results for girls and Table 5 presents the results for boys. Further, each table includes four models.

**Results for girls**

Model 1 in Table 4 shows that, without the control variables, there is a significant and positive correlation between the percent of females in mother’s occupation and the percent of females in girls’ preferred occupation. There is no significant association between the percent of women in father’s occupation and percent of females in girls’ preferred occupation. So far, the sex-role model is supported.

Table 4. Results for girls. Multiple OLS regression models. Dependent variable: % women in girls’ preferred occupation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parental characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent female in mother’s occupation</td>
<td>0.09***</td>
<td>0.09***</td>
<td>0.09***</td>
<td>0.08***</td>
</tr>
<tr>
<td>Percent female in father’s occupation</td>
<td>0.01</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Parental education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother no university degree (ref)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother with university degree</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father no university degree (ref)</td>
<td>0.01</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Father with university degree</td>
<td>0.1</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Immigrant background</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both parents born in Sweden (ref)</td>
<td>2.31</td>
<td>2.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign born mother/father</td>
<td>2.31</td>
<td>2.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct imitation of mother’s occupation</td>
<td>12.49***</td>
<td>12.11***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct imitation of father’s occupation</td>
<td>-19.77***</td>
<td>-19.8***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent mother</td>
<td>3.57</td>
<td>2.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent father</td>
<td>0.44</td>
<td>-0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Children’s characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade sum average</td>
<td>-0.05***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prestige in aspired occupation</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>School stratum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10 % immigrants (ref)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-30 % immigrants</td>
<td>-1.12</td>
<td>-0.9</td>
<td>-0.99</td>
<td>-0.79</td>
</tr>
<tr>
<td>30-60 % immigrants</td>
<td>1.22</td>
<td>1.42</td>
<td>0.92</td>
<td>1.26</td>
</tr>
<tr>
<td>60-100 % immigrants</td>
<td>0.52</td>
<td>-0.21</td>
<td>-1.89</td>
<td>-1.62</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>45.96***</td>
<td>46.89***</td>
<td>46.56***</td>
<td>59.45***</td>
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<tr>
<td><strong>Observations</strong></td>
<td>1.301</td>
<td>1.301</td>
<td>1.301</td>
<td>1.301</td>
</tr>
<tr>
<td>R²</td>
<td>0.01</td>
<td>0.02</td>
<td>0.04</td>
<td>0.05</td>
</tr>
</tbody>
</table>

***p<0.001, **p<0.01, *p<0.05 +p<0.1 (ref=reference category)

In Model 2, Table 4, a control for parental education is included. Girls who have a mother with university degree prefer an occupation with on average 3.6 percent fewer women
compared with girls whose mothers do not hold a university degree, and this is significant on a 95 percent level. Including parental education in the model does not, however, change the significant association between the level of gender composition of mothers’ occupation and girls’ preferred occupation.

In Model 3, Table 4, I include a dummy for whether parents are foreign born and two variables controlling for whether the girl aspire for the exact same occupation as her mother or father. The b-value for the variable Percent female in mother’s occupation does not change when including these controls. Thus, even when accounting for imitations of the exact same occupation as one’s mother, the percent of females in mother’s occupation has a positive and significant effect on girls’ occupational aspirations.

Adding controls for children's degree in ninth grade and the prestige of the aspired occupation in Model 4 slightly decreases the b value for percent females in mother’s occupation from 0.09 to 0.08, although it is still significant at the 99 percent level. Net of controls, a 1 percent change in the gender composition of mother’s occupation is associated with a 0.08 percent change in the gender composition of girls’ preferred occupation. Girls’ grade sum average is negatively related to the gender composition of the occupation to which they aspire, but the prestige in their aspired occupation has no effect on the percent of females in their aspired occupation.

Results for boys

Table 5 presents the corresponding analyses for boys. Model 1 in Table 5 shows that, when not adding any control variables, there is a positive and significant association between the percentage of women in father’s occupation and the percentage of women in boy’s preferred occupation. One percent change in the gender composition of father’s occupation is associated with 0.12 percent change in the boys’ preferred occupation. The percent of females employed in mother’s occupational group is not significant in this model. When only including the gender composition in mother’s and father’s occupation then there is a clear pattern of sex-role modeling for boys.

The variable measuring whether the father has a university degree (Table 5, Model 2) slightly mediates the effect of females employed in father’s occupation. The b value for percent females in fathers’ occupations decrease from 0.12 to 0.09 but is still significant on a 99 percent level. Children with a high-educated father on average aspire for occupations with 6.67 percent more females, compared to children whose fathers do not have a university
degree. According to the status maintenance mechanism, children often aspire to occupations with the same or higher status than their parents. Since most high status occupations are gender integrated while low status occupations are gender segregated, the significant positive b value is what I would expect. The model shows no significant association between mother’s educational level and percentage female in boys’ preferred occupations, and the gender composition of mother’s occupation remains not significant.

**Table 5.** Results for boys. Multiple OLS regression models. Dependent variable: % women in boys’ preferred occupation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parental characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent female in mother’s occupation</td>
<td>0</td>
<td>0</td>
<td>0.01</td>
<td>0.04</td>
</tr>
<tr>
<td>Percent female in father’s occupation</td>
<td>0.12***</td>
<td>0.09***</td>
<td>0.07**</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Parental education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother no university degree (ref)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother with university degree</td>
<td>2.28</td>
<td>3.09*</td>
<td>0.52</td>
<td></td>
</tr>
<tr>
<td>Father no university degree (ref)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Father with university degree</td>
<td>6.67***</td>
<td>6.4***</td>
<td>2.71</td>
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<tr>
<td><strong>Immigrant background</strong></td>
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</tr>
<tr>
<td>Both parents born in Sweden (ref)</td>
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</tr>
<tr>
<td>Foreign born mother/father</td>
<td>6.83***</td>
<td>3.25*</td>
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<tr>
<td><strong>Other control variables</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Direct imitation of mother’s occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct imitation of father’s occupation</td>
<td>20.35***</td>
<td>18.37***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent mother</td>
<td>-7.13*</td>
<td>-3.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent father</td>
<td>3.81</td>
<td>4.6</td>
<td></td>
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</tr>
<tr>
<td><strong>Children’s characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade sum average</td>
<td></td>
<td></td>
<td>0.04***</td>
<td></td>
</tr>
<tr>
<td>Prestige in aspired occupation</td>
<td></td>
<td></td>
<td>0.56***</td>
<td></td>
</tr>
<tr>
<td><strong>School stratum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10 % immigrants (ref)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-30 % immigrants</td>
<td>3.13</td>
<td>3.28</td>
<td>2.91</td>
<td>2.6</td>
</tr>
<tr>
<td>30-60 % immigrants</td>
<td>4.94*</td>
<td>5.33*</td>
<td>3.12</td>
<td>1.99</td>
</tr>
<tr>
<td>60-100 % immigrants</td>
<td>7.68**</td>
<td>8.98***</td>
<td>4.22</td>
<td>3.16</td>
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<tr>
<td><strong>Constant</strong></td>
<td>22.69***</td>
<td>21.23***</td>
<td>19.35***</td>
<td>-16.57***</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>1.193</td>
<td>1.193</td>
<td>1.193</td>
<td>1.193</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.03</td>
<td>0.05</td>
<td>0.1</td>
<td>0.23</td>
</tr>
</tbody>
</table>

*** p<0.001, ** p<0.01, * p<0.05 + p<0.1 (ref=reference category)

In Model 3, Table 5 other parental characteristics are included. In the descriptive part I showed that 1.6 percent of the boys in the sample aspired for the exact occupation as their mothers and 6 percent of the boys aspired for the same occupation as their fathers. As expected, both direct imitation of mother’s occupation and direct imitation of father’s occupation are significant in the models. The b value for the percent females in father’s education decreases from 0.09 to 0.07 in this model, but the result is still significant. Thus, the
father/son association is not entirely driven by the boys who aspired for the exact same occupation as their fathers. When controlling for foreign born mother/father and direct imitation of mother’s/father’s occupation separately (not shown here) it is shown that direct imitation of father’s occupation has a particularly strong mediating effect on the association between the level of gender segregation in father’s occupation and boys’ aspirations.

It can also be worth noting that the variable immigrant background is significant and positive. Boys whose mother/father has an immigrant background prefer occupations with 6.83 percent more women than children whose both parents are born in Sweden. When including this variable the “school stratum” variables lose their significance (only significant on a 90 percent level). This indicates that it is the parents’ background that matters for the level of gender segregation in the occupation, and not the percent of immigrant children in the boy’s school.

In Model 4, Table 5 boys’ characteristics are included. I control for the prestige of the occupation boys aspire for and also for grade sum average from the 9th grade. The variable percent females in father’s occupation is now only significant on a 90 percent level and the b value has decreased by half. Both grade sum average and prestige in boys’ aspired occupation are positive and significant in this model. Including grades and prestige separately in the model (not shown here) show that it is particularly the prestige variable that decreases the b-value and level of significance for the variable percent females in father’s occupation. This indicates that the level of gender-segregation in boys’ preferred occupation is highly correlated with the status of their aspired occupation. This seems logical since high status occupations are often gender integrated.

To sum up, when only including the gender composition of mother’s and father’s occupation (Model 1 in Table 4 and 5) the sex-role model is supported for both boys and for girls. The higher the percent of women in mother’s (father’s) occupation, the higher is the percent of women in girls’ (boys’) preferred occupation. However, there is no significant association between the gender composition in the opposite sex parent’s occupation and the gender composition for girls’ or boys’ aspired occupation. For girls, the correlation is robust, and decreases only from 0.09 to 0.08 when including controls for children’s characteristics in Model 4 (Table 4). For boys the correlation slightly decreases by the included variables in Model 2 and 3 (Table 5). When controlling for children’s characteristics in Model 4 for boys the b value decreases almost by half and the percent of females in fathers’ occupation is no longer significant.
The explained variance in the full model for girls (Table 4, Model 4) is 5 percent. This indicates that there are many other factors not included in this model that affect the gender composition of the occupations girls aspire to. The explained variance in the full model for boys (Table 5, Model 4) is 23 percent. It seems like a large part of the variances in the gender composition of boys’ preferred occupations can be assigned to their status preferences.

Summary and discussion

Most men and women are employed in occupations largely dominated by people of their own sex (England, 2010). Gender socialization is often put forth as an explanation for why men and women continue to sort into different occupations. According to the sex-role model children regard their same sex parents as role models and will imitate their behavior. Previous research finds an association between the gender segregation in children’s and their same sex parent’s occupation, but most often not between children and their opposite sex parent’s occupation. The aim of this study is to provide an empirical investigation on how the level of gender segregation of parents’ occupation correlates children's occupational aspirations today in Sweden.

The main contribution with this study is 1) the focus on children who are young today in Sweden and 2) the focus on occupational aspirations (instead of actual labor market behavior). Most of the previous research focuses on cohorts born earlier than 1970. At that time the labor market looked very different from today, more mothers were homemakers and few women occupied high status occupations. Occupational aspirations are particularly well suited when the interest lies in investigating parents’ role in children's occupational preferences as they are less affected by opportunity structures (such as discrimination) than what actual occupations are (Schoon and Parsons, 2002). I have only found two previous studies that focus on occupational aspirations in this context. Only one of them uses data on children who are young today, in a British context. This study contributes with knowledge from a Swedish context. More specifically the purpose of this study was to investigate whether there is any association between the gender composition of mother’s and father’s occupation and the gender composition of the occupations that Swedish 15-year-old boys and girls aspired to.
Before turning to the discussion of the results I will repeat two implications that should be kept in mind. The first has to do with excluded respondents. In this study (as in most survey-studies) each wave suffers from non-responding students. Additionally, as described above I had to remove respondents who did not participate in wave 1 and wave 2 or 3. In the last step, I had to exclude respondents with missing information on any of my included variables. This was particularly a problem with the question regarding children’s own occupational aspirations. I compared the non-responses by gender and social background in Appendix 1. The results showed that girls with highly educated parents more often reported non-encodable answers to the question regarding their occupational aspiration. When the excluded respondents are not random this can lead to biased results. There might be bias in the excluded respondents in ways not examined here. This problem with external validity should be kept in mind when looking at the results.

The second implication has to do with causality. Due to the design I cannot address the causality between investigated variables. However, I can be relatively sure that the potential problem does not regard revered causality (i.e. that children’s aspirations would affect parents’ occupations). Potential causality problems could instead be due to me missing out on controlling for confounding factors. Control variables were included in the regressions to control for confounding factors. But the mechanisms might not be controlled for in a sufficient way. There might also exist variables not included from the analyses that affect both the outcome (percent females in children’s aspired occupation) and the main independent variables (percent females in mother’s of father’s occupation). With this in mind, I will turn to the discussion of the results.

Two hypotheses where presented. The first was that: \textit{Net of controls, there is a positive and significant relationship between the gender composition of children's occupational aspiration and their same-sex parents’ occupation.} 

In the descriptive section I show that the boys in the sample prefer gender typical occupations to a greater extent than the girls in the sample, and at the same time that girls are much more likely to prefer gender atypical occupations. Further, the gender composition of boys' preferred occupation is quite similar to the occupations the fathers in the sample are employed in (Figure 3). Girls, on the other hand, prefer much more gender-integrated occupations than the mothers in the sample have (Figure 2). Just looking at Figure 2 and 3 then, it would seem like boys overall follow the same patterns as their fathers’, while girls deviate from their mothers’ generation and opt for more gender integrated occupations.
Unlike most previous research I do not find support for the first hypothesis for boys in the full model. The initially significant and positive correlation between the gender composition of father’s occupation and son’s occupational aspiration in the regression analysis disappear upon adding control variables. According to the micro class perspective (Jonsson et al., 2011) occupation specific skills are transferred through generations. To control for this mechanism the models included a variable indicating if the children aspire for the exact same occupation as their parents. Some of the effect is mediated by the share of boys (6 %) who aspire for the exact same occupation as their fathers. Further, boys whose fathers have a university degree aspire for occupations with a higher percent of women than boys whose fathers do not have a university degree, and this also mediates the correlation between the gender composition of fathers’ and sons’ occupation. According to the status maintenance mechanism children will opt for an occupation with at least as high status as one’s parents (Breen and Yaish, 2006). Since high status occupations are more gender integrated (Magnusson, 2009), the observed association is likely to be an effect of this.

The status of boys’ occupational aspirations was shown to be a particularly strong mediator. When including boy’s grade sum average and prestige in aspired occupation the significant correlation between the gender composition of fathers’ and sons’ occupation disappears. The explained variance also increased from 10 to 23 percent. This indicates that the gender composition of boys’ occupational preferences is strongly connected to status preferences. Previous studies have also included measures controlling for the status in children’s aspired (or actual) occupation (e.g. Korupp et al., 2002 and Polavieja and Platt, 2014). Polavieja and Platt (2014) for example included the average income in children’s aspired occupation in the model (as described above). However, this did not affect the positive association they found for boys regarding having a father with a gender typical occupation and the outcome, having a highly sex-typed occupational aspiration. The different model specifications between their study and this study might be the reason for why our result differs.

Just as in most previous research’s findings, the sex-role model (that is tested in hypothesis 1) received support for girls. I found a robust and significant correlation between the gender composition of mother’s occupation and the daughter’s occupational aspiration. The correlation was only slightly mediated when including girls’ grade sum average in the model. Girls with higher grades were shown to prefer occupations with lower percent of women than do girls with lower grades. According to England (2010) and Gottfredson (1981; 1986) a girl is more likely to prefer a less gendered typical occupation if it is associated with high status.
Therefore we might assume that girls’ grades have an effect because girls with higher grades also prefer high status, less gender typical occupations. However, this does not seem to be the case, (or at least not the only mechanism that makes girls with higher grades prefer less gender typical occupations); an interesting finding is that (unlike the result for boys) the prestige in girls’ aspired occupation is not significant.

The correlation between the percent females in mother’s occupation and girls’ aspirations is can be seen as an indicator that girls consider the gender composition in their mother’s occupation when they develop their own aspirations. Since I only observe a correlation I cannot say exactly through which mechanism this association works (i.e. if it is a result from any type of socialization or not). I have chosen to interpret the findings as a support for the sex-role model: that girls regard their mothers as role models and therefore opt for an occupation with a similar gender composition.

Some of the previous studies also found an association between mothers and sons (see Table 1 above). England (1999) hypothesized that socialization does not necessarily need to go along gender lines, children might also consider their opposite sex parents as role models. In line with this I also hypothesized that females’ strong labor market attachment, also in high skilled occupations, may lead children (both boys and girls) to also consider their opposite sex parent as a role model. The second hypothesis was: Net of controls, there is a positive and significant relationship between the gender composition of children’s occupational aspiration and the gender composition in their opposite-sex parents’ occupation. However, this hypothesis did not receive support in any of the models.

If intergenerational transmission of gender segregation is seen as a supply side explanation to the gender segregation in the labor market, then my results imply that same-sex modeling to some small extent might help to maintain the gender segregation in the labor market. Also, since both boys and girls are likely to prefer the exact same occupation as their mother and father this might have some effects on sustaining gender segregation in the labor market. However, it should be noted that the explained variance in the model for girls is never more than 5%. This indicates that there are other factors that affect the gender composition in girls’ occupational aspirations, and further also indicate that the potential effects that this association have on the gender segregation in the labor market is weak. I did not find any association between the gender segregation in the opposite sex parent’s occupation and the gender segregation in a child’s occupation, thus my models don’t support the idea that
opposite-sex modeling as measured here would have anything to do with the gender segregation in the labor market.

When relating my results to the labor market two things should be mentioned. First all, even though children’s aspirations are relatively realistic around the age of 14, as discussed above, children’s aspirations is not the same thing as actual labor market behavior. Their preferences can change. As von Otter (2014b: 24) points out, labor market constraints might also have an effect. As employment opportunities in male dominated occupations with lower status are declining (such as jobs in the manufacturing industry) this might make boys to opt for more gender integrated occupations, if such occupations are available (as in the care sector) (ibid).

Also, even if the sex-role model received support for girls and not for boys, boys still prefer much more gender-segregated occupations. This study gives no answer to the question why boys’ status preferences seems to be so strongly related to the gender composition in their preferred occupation. Or why the boys seem to follow the pattern of their fathers’ generation in regard to the overall pattern of gender segregation, while girls deviate from their mothers. But one may assume that boys’ incentives for preferring less gender typical occupations are few. If turning to the theories of doing gender it might be associated with a higher stigma for boys than for girls to prefer gender atypical occupations.

Children (both boys and girls) is probably influenced by their parents through ways that has not been examined here. Future research could benefit from looking into this relationship more in detail. For example, by conducting more in depth interviews with children and their parents. This might enable a closer investigation of the relationship between parental influences on the gender segregation in children’s occupational preferences. Also, as discussed in the theory section, gender socialization through parents is just one pathway through which gender essentialist believes are reproduced (or questioned) (Risman, 2004). Further research could benefit from investigating the role of for example peers or teachers.
References


a Swedish cohort, pp. 1-32 in *Educational and Occupational Careers in a Swedish Cohort*. Department of Sociology, Stockholm University and Swedish institute for Social Research, Dissertation Series no. 91.


**Electronic sources:**


**Statistic Sweden, Employment in Sweden,** Page where it is possible to download information about the number of females and males employed in each SSYK group in Sweden. Downloaded 2014-04-20 from Statistic Sweden’s webpage: [http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0208__AM0208E/YR EG36/?rxid=6885942a-73e9-4546-bb25-7d0a49a15bff](http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__AM__AM0208__AM0208E/YR EG36/?rxid=6885942a-73e9-4546-bb25-7d0a49a15bff)

Appendix 1.

Analysis of non-encodable answers to the “occupational aspiration” question

Overall, it was possible to give 76 percent of the respondents an ISCO08-code. 24 percent of the respondents were non-encodable due to 1) that they ticked the “I don’t know” box 2) that they gave an (often unserious) answer or 3) not answering the question. The large percent or respondents who disappear from the analyses are problematic if the people who were not coded share similar background characteristics. This will create biased estimates in the analyses and thus make the result less representative to the population I wish to estimate the results to. In this section I take a closer look at how the responses differ by gender and social background (parental education).

Table 6. Analysis of the distribution of answers to the “occupational preference” question. Boys/girls separately. (Percent in parenthesis).

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Girls</th>
<th>Boys</th>
<th>Sign. diff.</th>
<th>Boys/girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCO08-coded</td>
<td>3,400 (76)</td>
<td>1,752 (76)</td>
<td>1,648 (75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Do not know&quot;</td>
<td>1,034 (23)</td>
<td>518 (23)</td>
<td>516 (23)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unserious/unclear</td>
<td>21 (0.4)</td>
<td>6 (0.2)</td>
<td>16 (0.7)</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>No answer</td>
<td>37 (0.7)</td>
<td>13 (0.6)</td>
<td>24 (1.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4,492 (100)</td>
<td>2,289 (100)</td>
<td>2,204 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 show that there is no significant difference in the percent of men and women who were given an ISCO08 code. Almost 2 percent of the boys’ answers were unserious or unclear, while the same number for girls were almost 1 percent. But since the number of respondents who gave unserious or unclear answers or did not answer the question at all is low this is probably not a larger problem.

I also looked at how the answers differed depending on parental education, separately for girls (Table 7) and boys (Table 8). Table 7 show that a significant larger share of the girls who do not have a mother or a father with a university degree were given an ISCO08 code, than girls whose parents have a university degree (78 percent versus 72 percent). At the same time a significant larger share of girls with a mother or a father who have a university degree did not
know what occupation they preferred (27 percent versus 21 percent). This non-random might be a bit problematic and bias the results.

**Table 7.** Analysis of the distribution of answers to the “occupational preference” question. For girls, by social class. (Percent in parenthesis).

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Mother and father no university degree</th>
<th>Mother or father university degree</th>
<th>Significant difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCO08-coded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Do not know&quot;</td>
<td>1,698 (76)</td>
<td>1,306 (78)</td>
<td>382 (72)</td>
<td>*</td>
</tr>
<tr>
<td>Unserious/unclear</td>
<td>502 (23)</td>
<td>355 (21)</td>
<td>147 (27)</td>
<td>*</td>
</tr>
<tr>
<td>No answer</td>
<td>13 (0.6)</td>
<td>10 (0.6)</td>
<td>3 (0.6)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,218 (100)</td>
<td>1,685 (100)</td>
<td>533 (100)</td>
<td></td>
</tr>
</tbody>
</table>

***p<0.001, **p<0.01, *p<0.05

Table 8 shows that when regarding boys there is no larger differences in missing information depending on their parental education. Boys with highly educated parents are significant somewhat more likely to report unserious/unclear answers. The overall number of boys with unserious/unclear answers is quite low so this is will probably not bias my results.

**Table 8.** Analysis of the distribution of answers to the “occupational preference” question. For boys, by social class. (Percent in parenthesis)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Mother and father no university degree</th>
<th>Mother or father university degree</th>
<th>Significant difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCO08-coded</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Do not know&quot;</td>
<td>1,580 (75)</td>
<td>1,193 (75)</td>
<td>387 (72)</td>
<td></td>
</tr>
<tr>
<td>Unserious/unclear</td>
<td>500 (24)</td>
<td>357 (23)</td>
<td>143 (27)</td>
<td>*</td>
</tr>
<tr>
<td>No answer</td>
<td>15 (0.7)</td>
<td>14 (0.9)</td>
<td>1 (0.2)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,115 (100)</td>
<td>1,580 (100)</td>
<td>535 (100)</td>
<td></td>
</tr>
</tbody>
</table>

***p<0.001, **p<0.01, *p<0.05