

**Title:** Can Social Norms Explain Gender Differences in Educational Aspirations?

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# **Can Social Norms Explain Gender Differences in Educational Aspirations?**

**Kristin J. Kleinjans\***

Despite a narrowing of the wage gap in the last decades, women still earn less than men (Francine D. Blau and Lawrence M. Kahn 2000). Part of this can be explained by different occupational choices. Although women face different real and perceived costs and benefits of educations (and, closely related, of occupations) than men, we do not know much about the reasons why women's choices are different, both with respect to the field of study and the length of education. Social norms are a possible (partial) explanation for these differences. In this paper, I investigate the impact of gender on fulfilling one specific social norm: to achieve a higher socioeconomic status (SES) than one's parents. Using a unique data set on educational aspirations of young adults from Denmark, I explore how the aspiration to fulfill this social norm differs by gender and parental SES. I find that at a lower parental SES, women are more likely to aspire to fulfill this social norm than men. At a higher parental SES, they are less likely to do so.

## **I. Conceptual Framework**

Educational and occupational choices of parents and their children are highly correlated. Both nature and nurture seem to be involved in this (see Thomas Piketty 2000 for an overview), but the degree to which the link is causal remains controversial (see, e.g. Sandra E. Black et al. 2005). Social norms might be able to shed some light on the mechanisms through which nurture affects intergenerational correlation of education (and of SES), while at the same time explain some of the gender differences that have been found (Arnaud Chevalier 2004).

Consider a simple model where a career aspiration is chosen to maximize expected utility. Utility is composed of two parts: the individual utility of the choice (called private utility) and the utility of following the social norm (social utility). This set-up follows loosely the literature on social interaction (e.g., Steven N. Durlauf and H. Peyton Young 2001).

Women and men make different choices if there are differences in their private or social utility. Private utility depends on individual preferences, but also on the potentially different costs and benefits of a choice. Social utility differs if social norms or the utility of fulfilling them are different. The interpretation of social norms is kept simple, consisting of only one parental norm: I assume that parents want their children “to have it better” than themselves, which is interpreted as parents preferring their children to have a higher SES than they have. Social utility arises from aspiring to an educational level compliant with this social norm.

This social norm might not hold to the same degree for daughters and sons - it might be less strict for daughters. This could result from less rigid gender roles for girls. As a consequence, girls might have more freedom in their choices (Virginia Valian 1999, Ch. 3). While a girl may, for example, play with both toy trucks and dolls, a boy is likely to be discouraged to play with dolls. In the context of the social norm as the wish of parents for their children to move up the social ladder, less rigid gender roles imply higher tolerance for daughters achieving a lower SES than their parents. A weaker social norm for daughters could also be the result of traditional gender roles. If parents (and daughters) expect that women perceive it as less important to fulfill this social norm or believe that they can do so by “marrying up”, then expectations of educational achievement might be lower. Another explanation could be that women have lower returns to education than men. This would lead to lower educational achievements of women, and could, therefore, appear as if women face weaker social norms. In this context, this is not likely for two reasons: first, in the sample used, women’s aspirations are generally not lower than men’s; and second, the data used stems from Denmark, a country where the percentage of women and men who are working or under education is within one to two percentage points of each other (at about 80%). Contrary to other countries, the share of women working part-time is also relatively small: 15% of working women are working part time, versus

10% of working men.<sup>1</sup> In addition to facing weaker social norms, it is also possible that the utility from fulfilling a given social norm is higher for women, since there is evidence that it is more important to conform to societal and parental expectations for women than for men (Valian 1999).

I estimate the effect of gender on fulfilling the social norm of aspiring to a higher SES than their parents using a probit model, controlling for other factors that might influence this choice. Besides including demographic controls, I capture some aspects of private utility with dummies for having high expectations for the future and having high self-confidence. I control for aptitude by using a reading score from the Organization for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) and a dummy if the young adult owns more than ten books. This is important since in our data women have higher reading scores, which could reduce the costs of achieving more education. Since parental influence might also differ depending on the birth order of their children, I include dummies for the firstborn of several children and for being an only child. If women indeed gain a higher utility from fulfilling a given social norm, the marginal effect found in the estimated model would lead be downward biased. There is also a potential issue of separating the effects of gender on private versus social utility, which I will address in the discussion of the results in Section III.

## **II. Data and Descriptive Statistics**

The data used in this study consists of three different combined data sets from Denmark. The parental and family information is drawn from registry data for the year 1998. This information is matched to children who participated in the 2000 OECD PISA of nationally representative ninth graders. From this data, a standardized reading score is obtained. The third data source is a 2004 follow-up survey of these PISA respondents on values and career aspirations, from which the

survey measures are obtained.<sup>2</sup> This data is especially well suited for this type of study, because it combines the advantages of registry data (low measurement error of parental SES) and survey data (subjective information). In addition, as mentioned before, Denmark's high female labor force participation reduces the effect of potentially lower returns to education for women because women in Denmark have a high attachment to the labor force.

The final sample size is 2,584, after the dropping of 870 observations of individuals who did not participate in the follow-up survey; 56 observations with missing information on the reading score, both parents, education level, educational aspirations, or siblings; and 439 observations where the stated educational aspirations seemed misleading.<sup>3</sup>

Educational aspiration is defined using answers to the questions whether further education is planned and if so, which one. For those who did not plan a further education or who did not know, the education currently undergone is used (if any) or otherwise the highest completed education. I distinguish five educational levels, according to the Danish educational system: High School or less, vocational training, short-cycle education, medium-cycle education, and some College or more.<sup>4</sup> Parental SES is defined as the maximum of a) the highest educational level of the parents and b) the income quintile in the sample. The upward correction is used to take into account positive effects of income on parental SES. The young adult is assumed to aspire to fulfill the social norm if the aspired educational level leads to a higher SES than that of her parents or to the same if the parents are in the highest SES. An additional dummy is included in the estimation, which is equal to one for "don't know" answers in any of the two educational aspiration questions. Table 1 explains the variables used in the analysis and shows summary statistics separately for women and men.

### III. Results

The marginal effects from the probit estimation of fulfilling the social norm are shown in Table 2 for three different specifications: First, without controlling for parental SES; second, with parental SES as control; and third, with parental SES and an added interaction term of being a woman and parental SES. Gender matters only in the third specification. Here, women are much more likely (15%) to fulfill the social norm than men. The marginal effect of the interaction term of being a women and parental SES is negative. The inclusion of dummies for parental education changes the results only to a small degree. Higher parental SES reduces the likelihood of fulfilling the social norm, which could be related to the greater difficulties of doing so at higher levels of parental SES. Respondents with higher expectations for the future and higher ability scores are more likely to fulfill the social norm, as are single children and oldest siblings whose parents might have stronger feelings about its importance. Including dummies for parental education changes the results only very slightly (results omitted).

Since interaction terms in probit models are not easily interpretable (Chunrong Ai and Edward C. Norton 2003), I conducted the probit regression of the first specification separately by parental SES.<sup>5</sup> Table 3 shows the effect of being a woman (effects of other covariates are omitted). Interestingly, I find that for lower parental SES, daughters are about 10% more likely to fulfill the social norm, while they are less likely to do so at higher parental SES. I find no effect for the lowest level of parental SES, which might be related to its small sample size. These results need further investigation, but one could speculate that they might result from different gender roles in families with different parental SES. The results are consistent with the notion that conforming to expectations is more important for women (relative to men) in families with lower parental SES. They are also consistent with less rigid gender roles

for women from a higher parental SES, and with the idea that for these women “marrying up” is a more likely option.<sup>6</sup>

To check if the effects found might stem from different a) preferences for specific job characteristics (safe jobs or more convenient work hours), b) effects of reading aptitude or c) ambition, I included measures for these in the specifications above (including the separate regressions by parental SES). I found no significant differences in the marginal effects of gender. This, together with the lack of evidence that returns to education for women compared to men are higher at lower parental SES levels and lower at higher parental SES levels, suggests that the results are not solely driven by differences in private utilities of women and men.

#### **IV. Discussion**

This paper investigates the gender differences in the relation between aspirations of young adults of educational length and fulfilling the social norm of achieving a higher SES than their parents. I find that the effect of being a woman on fulfilling the social norm is positive for lower parental SES and negative for higher parental SES compared to men. I speculate that this could be explained by less rigid social norms for women of higher parental SES. The fact that these results do not change when dummies for parental education are included suggests that parental SES by itself has an impact above and beyond the effects of parental education.

The findings suggest that social norms contribute to the different educational choices of women and men. Therefore, incorporating social norms as an additional feature into a more comprehensive model of educational choice, which allows for the separate identification of the effects of differences in private and social utility, might be a promising area of future research and help understand the gender differences in educational and occupational choices. The findings also emphasize that including social factors might be a fruitful addition in the explanation of gender differences in economic choices.

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**Table 1 –Selected Summary Statistics**

Variable	Explanation	Means <sup>a</sup>	
		Women	Men
<b>Educational Aspirations</b>	= 1 if High School or less	0.12	0.13
	= 2 if vocational	0.38	0.48
	= 3 if short-cycle	0.05	0.07
	= 4 if medium-cycle	0.22	0.08
	= 5 if some College or more	0.23	0.23
<b>Education dk</b>	= 1 if answered don't know to either aspiration or type of aspiration	0.07	0.08
<b>High expectations</b>	= 1 if "You have high expectations" to a high or very high extent	0.79	0.70
<b>Self confidence</b>	= 1 "You are sure you can handle it" to a high or very high extent	0.76	0.82
<b>Reading Score</b>	PISA Reading Score (wleread)	511.41 (92.18)	488.80 (99.09)
<b>Owns more than 10 Books</b>	= 1 if owns > 10 books	0.60	0.43
<b>Education mother</b>	Education mother	2.10	2.23
		(1.25)	(1.27)
<b>Education father</b>	Education father	2.11	2.28
		(1.25)	(1.31)
<b>Income</b>	Average gross family income per parent in 1998 Danish crowns	259,388 (128,426)	264,081 (115,049)
<b>SES</b>	Maximum [education parents, income quintile]	3.26 (1.29)	3.36 (1.26)
<b>Only child</b>		0.05	0.06
<b>Oldest child</b>	Oldest child of several children	0.35	0.36
<b>N<sup>b</sup></b>		1282 <sup>b</sup>	1302 <sup>b</sup>

<sup>a</sup> Standard deviations in parentheses except for dummies. <sup>b</sup> slightly lower number of observations

(less than 30 each) for education of mother and father.

Variables used in the estimation which are not shown include dummies for living in a rural area,

having an absent mother, having an absent father, and mother's and father's age.

**Table 2 – Marginal Effects on Fulfilling the Social Norm (Probit)**

	A	B	C
Female <sup>a</sup>	0.02 (0.02)	0.01 (0.02)	0.15*** (0.06)
SES		-0.10*** (0.01)	-0.08*** (0.01)
SES*female			-0.05*** (0.02)
Education don't know <sup>a</sup>	-0.29*** (0.02)	-0.30*** (0.02)	-0.30*** (0.02)
High expectations <sup>a</sup>	0.08*** (0.02)	0.09*** (0.02)	0.09*** (0.02)
Reading Score	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Owens more than 10 Books <sup>a</sup>	0.13*** (0.02)	0.15*** (0.02)	0.15*** (0.02)
Only child <sup>a</sup>	0.11** (0.04)	0.11** (0.05)	0.12*** (0.05)
Oldest child <sup>a</sup>	0.05** (0.02)	0.07*** (0.02)	0.08*** (0.02)
Pseudo R2	0.10	0.15	0.15

<sup>a</sup> Effects are for a discrete change of a dummy variable from 0 to 1. Robust standard errors are given in parentheses. \*\*\* and \*\* represent statistical significance at the 1-percent and 5-percent level, respectively. Also included are dummies for absent father, absent mother, age of father, age of mother, and dummies for high self-confidence and living in a rural area (both not statistically significant). Number of observations: 2,584.

**Table 3 – Effect of Gender on Fulfilling the Social Norm (Probit) by Parental SES**

	A	B	C	D	E
	SES=1	SES=2	SES=3	SES=4	SES=5
Female <sup>a</sup>	-0.01 (0.04)	0.11*** (0.04)	0.09* (0.04)	-0.06* (0.03)	-0.09** (0.05)
No. of obs.	180	699	438	669	562
Pseudo R2	0.25	0.15	0.17	0.17	0.19

<sup>a</sup> Effects are for a discrete change of the dummy variable from 0 to 1. Robust standard errors are given in parentheses. \*\*\*, \*\*, and \* represent statistical significance at the 1-percent, 5-percent, and 10-percent level, respectively. The same additional covariates are included as reported in Table 2.

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<sup>1</sup> Own calculations for population aged 16 to 66, using data from Statistics Denmark for 2005.

<sup>2</sup> The follow-up survey is entitled “Young people in job or education: Values, choices, and dreams for the future”.

<sup>3</sup> These are young adults who stated High School as their aspired educational level, but in an answer to another question indicated that they aspire to an occupation requiring a higher educational level.

<sup>4</sup> Short cycle-education is typically an additional training for individuals who have completed vocational training, and leads to qualifications such as laboratory technician. Medium-cycle education typically requires a high School degree and leads to qualifications such as librarian, midwife, and social worker. Some types of specialized high school degrees, which enables graduates to immediately start working in a certain profession, are classified as vocational training in the analysis.

<sup>5</sup> This specification did not allow to control for parental education because of the high degree of collinearity of SES and parental education.

<sup>6</sup> Estimating the impact of gender on absolute deviation from parental SES gave the same qualitative results, which suggests that they are likely to be driven by the positive deviations.