

THE IMPACT OF FATHERING DAUGHTERS
ON ATTITUDES TOWARDS TRADITIONAL
GENDER NORMS

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The impact of fathering daughters on attitudes towards traditional gender norms

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Abstract

I study the impact of men parenting daughters on attitudes towards gender role norm in the Netherlands. This paper specifically focuses on attitudes towards the traditional male breadwinner norm. By using an OLS regression, this paper finds that an increase in the proportion of daughters has a negative impact on the likelihood of fathers having traditional attitudes towards gender role norms. My estimates suggest that fathers' probability to have traditional attitudes decreases by 0.04 points with every additional increase in number of daughters while controlling for total number of children. The results are robust against additional independent variables and the fertility stopping rule. These findings are consistent with interest and exposure theories. This paper highlights the influence of children on their parents' beliefs and concludes that gender norm attitudes have the potential to change throughout a man's life.

ABSTRACT	1
SECTION 1: INTRODUCTION	3
SECTION 2: BACKGROUND	4
SECTION 3: LITERATURE REVIEW	7
SECTION 4: DATA AND METHODOLOGY	9
4.1 THEORETICAL FRAMEWORK	9
4.2 DATA	11
4.3 MEASURES	12
4.4 EMPIRICAL STRATEGIES	12
4.5 ASSUMPTIONS	15
SECTION 5: RESULTS AND ROBUSTNESS CHECKS	15
5.1 RESULTS	15
5.2 ROBUSTNESS CHECKS	17
SECTION 6: DISCUSSION AND CONCLUSION	21
REFERENCE	24

Section 1: Introduction

Norms can be defined as a ‘collective definition of socially approved conduct’ (Pearse & Connell, 2016, p.31). The term can refer to values, rules, attitudes, beliefs, traditions, customs and cultures. In brief, norms specify an accepted way of behaving. Gender norms can be defined as ‘the beliefs and rules, in a given community or institution, about the proper behaviour of men and women’ (Connell, 2014, p.7). Attitudes towards gender roles are the beliefs about how family and work roles are differentiated between men and women (CCorrigall & Konrad, 2007). Attitudes can range from traditional to non-traditional views (Harris & Firestone, 1998). Traditionally, men are expected to be the breadwinner and women are expected to be the caretaker (Connell, 2014). Therefore, non-traditional gender roles would be anything that does not follow this model. Egalitarian individuals believe that men and women should both contribute financially to their family and participate somewhat equally in childcare and household tasks (Corrigall & Konrad, 2007)

Attitudes towards gender roles are established early in life and can remain stable thereafter. Children are taught gender roles by numerous socializing agents like their parents, peers, and the media. As children grow up, they start to adopt the gender role norms. Then, as adults, they act according to gender norms and teach their own children these same ideas (Connell, 2014; Pearse & Connell, 2016). As a result, gender norms have persisted over time. Although gender norms may be persistent, they are not unchanging. Change can result from external forces which cause people to adapt and shift their attitudes. For instance, changes in economic circumstances, technological development, and social movements (Connell, 2014). Also, change can also be internal from being exposed to new ideas and personal situations. Brooks and Bolzendahl (2004) state that significant experiences in adulthood can undo early childhood socialization and enable attitudes to change during a life course. This paper evaluates the ability of adults to alter their beliefs after a change in personal circumstances by looking at significant life event –specifically, the birth of a daughter.

Changing views about the appropriate roles of women and men plays an important role in furthering effort towards gender equality. In this paper, I examine the impact that fathering daughters has on the attitudes of men towards traditional gender roles. The random assignment

of the gender of a child sets up a natural experiment. I explore the relationship between parenting a daughter and the impact that may have on a father's view on gender roles using the exposure and interest theory, both of which I expand on below. The results of the experiment demonstrates that parenting daughters decreases the likelihood of fathers holding traditional gender ideologies. Also, the results show that the proportion of daughters is correlated with the likelihood of holding non-traditional beliefs.

This study has important implications for informing policy development. Given that the simple matter of fathering a daughter can have a positive influence in how men in society view traditional gender roles speaks to the need to educate all men, regardless of the sex of their children on the importance of an egalitarian view towards those norms. Persisting traditional norms may have a detrimental impact on how male figures in positions of power view their female colleagues, potentially impacting the opportunities that women have to attain higher positions of power in professional environments. Acknowledging that perspectives on gender norms may differ based on the sex of one's given child may also enable policy makers to strengthen the educational curriculum regarding gender equality, enabling all children regardless of the sex of their siblings or absence of to get educated in these views.

The structure of the paper is as follows: Section 2 will provide background information. Section 3 will provide an overview of the previous literature on the topic. Section 4 will introduce the data and methodology of the paper. Section 5 will present the results and will include the robustness checks to further validate the findings. Section 6 will conclude with a discussion.

Section 2: Background

In recent times, gender equality has been a topic of great concern in society and politics. This concern has pressed governments to make significant efforts to minimize gender disparities both within and outside the labour market (Borrell-Porta, Costa-Font & Philipp, 2019). However, progress in reducing gender inequalities has slowed drastically since the 1990s and we are now

seeing a renewed interest in traditional values (EIGE, 2019; Fortin, 2005). Between 2005 and 2017, the Netherlands improved their Gender Equality Index scores, albeit at a slower rate than the EU average (EIGE, 2019). There is a growing body of research focusing on the role traditional gender norms play in the persistence of gender disparities in labour force participation (Borrell-Porta, Costa-Font & Philipp, 2019; Fortin, 2005) and in wages (Burda, Hamermesh & Weil, 2007). This paper aims to contribute to this research by addressing the susceptibility of norms to change by evaluating whether adult males change their views on traditional gender roles based on the sex of their children.

Despite significant government efforts over the past decades, policies to increase female labour participation have not been very successful (Wielers & Raven, 2011). Many countries are working to increase labour force participation of women with the aim of increasing economic growth and productivity (Bettendorf, Jorgen & Muller, 2015). Researchers have investigated the impact of gender-based inequality in employment on GDP growth per capita. Economists agree that gender equality by means of female labour force participation increases economic growth and aggregate welfare (Luci, 2009). For example, gender equality in form of female labour force participation increases household income, which in turn allows for more savings (Galor & Weil, 1996). Studies show that greater the increase in female participation in the labour force (by joining the labour force and/or increasing hours worked), the quicker a country's economy can grow (Luci, 2009). One reason for this is that gender disparities in employment, limits the talent pool of the country's labour market. Men that are potentially less qualified are being chosen over more qualified women. As a consequence, the average productivity of the available labour force is lowered, which decreases a nation's international competitiveness (Klasen and Lamanna, 2003). Moreover, studies show that gender inequality in education is negatively correlated with economic growth (Knowles et al., 2002). In cases where gender disparities in education are high, there are higher rates of return from educating women than from educating men due to decreasing marginal returns on workers (Knowles et al., 2002; Luci 2009). Increasing female education has a positive impact on economic growth in a number of ways. For instance, there is a correlation between women attaining higher levels of education and securing employment as well as higher salaries/wages. In sum, gender equality in labour market participation and education benefits women, economic growth and productivity. For this reason, countries have

developed policies focused on promoting female labour market participation, especially for mothers with young children.

Many countries are working toward gender equality within and outside the labour market because of the positive economic benefits. Countries, including the Netherlands, provide public benefits such as childcare subsidies and parental leave to new parents in order to assist women in returning to the workforce after having children (Bettendorf, Jorgen & Muller, 2015). Although the Netherlands has a comparatively high labour market participation rate, the country has a low amount of annual working hours because of the high amount of part time workers (Wielers & Raven, 2011). As shown in **Figure 1**, the Netherlands has the highest percentage of part time workers in the EU and the vast majority of which are female workers (Fouarge & Baaijens, 2006). Almost 75 percent of employed women in the Netherlands are working part time hours in 2015 (European Commission, 2018). This “femaleness of part time employment is often associated with women’s roles as housewives and mothers” (Fouarge & Baaijens, 2006, P. 156). Women are more likely to work part time hours because they often contribute in larger part to caring for their children and household tasks than men. One of the largest barriers for integrating women into the workforce is posed by the unequal burden of caretaking on women (Fouarge & Baaijens, 2006). As result, women are choosing to work part time instead of full times hours in order to balance work and family care.

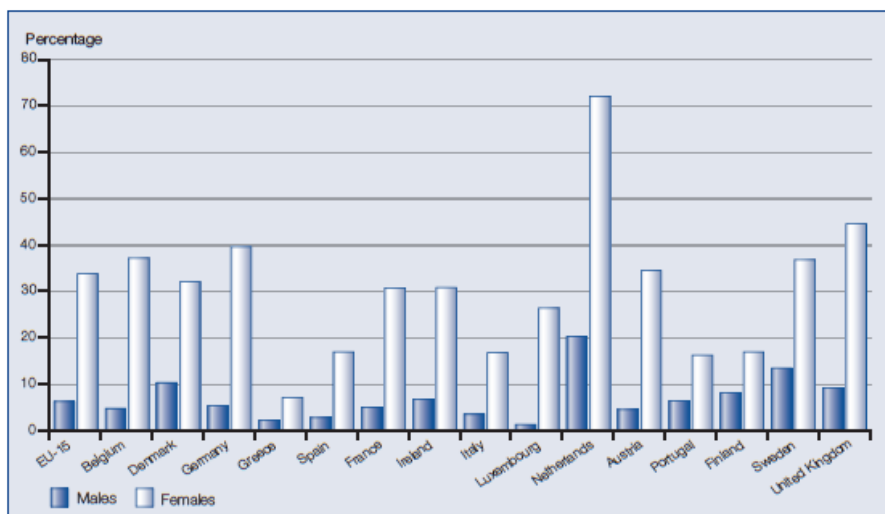


Figure 1: Percentage of male and female workers in Member State
 Source: Fouarge & Baaijens, 2006, p. 158

The gender disparities in paid and unpaid work is indicative of the traditional male breadwinner norm. Therefore, understanding where norms about gender roles come from and how they can change could help policymakers address gender disparities within and outside the labour market. A simple way to potentially affect change is by increasing awareness. Unfortunately, many people may not be aware of the gender inequalities that continue to persist in our current society, as well as, the economic benefits from greater female labour market participation. Education on these topics can enable people to better understand the issues women face in employment and in society in general. Research has shown that individuals exposed to feminist ideas through education are more likely to support egalitarian gender attitudes (Kroska & Elman, 2009). Moreover, the process of changing attitudes regarding gender norms will likely be gradual over a long period of time. As a result, policymakers may not see the desired results of new policies immediately. However, with the support of policies such as, childcare benefits and paid paternal leave, parents will at least have the opportunity to share work and family duties. Over time, egalitarian division of work and family care will become normalized in society.

Section 3: Literature Review

Prior research has shown that having female children significantly impacts views towards traditional gender norms among both men and woman. These studies confirm that parenting daughters decreases the level of agreement with gender norms. For instance, Warner's (1991) pioneering research demonstrated that North American parents with daughters have more egalitarian attitudes regarding gender roles. The author explains that these findings follow the social identity theory. The main idea behind the theory is that parents include the wellbeing of their children into their own utility function. In line with the social identity theory, other research has shown that women with sons have a higher likelihood to have traditional attitudes towards gender roles (Downey et., 1994). Similarly, a study by Warner and Steel (1999), conducted in the states of Washington and Oregon, also found similar results. Their study demonstrated that both women and men with only daughters, in comparison to those with only sons, are more likely to support gender equality policies. The impact was strongest among men with daughters.

A limiting factor to these early studies is their external validity. These studies all make use of small samples sizes. For instance, Warner's (1991) study of mothers and fathers in the cities of Detroit and Toronto (USA and Canada). Warner and Steel (1999) only use data on men and women in Washington and Oregon (USA). Downey et al. (1994) also uses of a small sample size – mothers in Indiana (USA). However, there are newer studies that use larger national samples. For example, Shafer and Malhotra (2011) use the National Longitudinal Study of Youth, which is a national panel study from the United States. And Borrell-Porta, Costa-Font and Philipp (2019) use the British Household Panel Survey.

It is important to note that some studies have challenged the impact of child gender on traditional gender role attitudes. Conley and Rauscher (2013) did not find evidence to support the hypothesis that parenting daughters decreases the likelihood of agreeing with traditional norms. This study uses data from the 1994 General Social Survey to assess the effect of the proportion of daughters on political views. Also, Katzev et al (1994) unexpectedly find that mothers of sons are more likely to have egalitarian views towards gender roles. A possible explanation for their results, is the dated nature of the studies.

For this paper, I am focusing on the impact that fathering a daughter can have on the father's attitudes towards traditional gender norms. However, it is also important to highlight that there are papers that study the impact of child gender on other outcome variables. To illustrate, Washington (2008) studies the impact of female children on legislator's voting on women's issues. Oswald and Powdthavee (2010) evaluate the impact of daughters on left wing voting.

Overall, most of the studies mentioned above are outdated. Also, the vast majority of their studies are centered around samples from the United States. The only exception is the study done by Borrell-Porta, Costa-Font and Philipp (2019) which looks at data from the United Kingdom between the years of 1991 and 2012. The authors from that study explore the impact of gender across daughter's age by studying how parent's gender norm attitudes change as their daughter(s) get older. The study uses both a pooled OLS regression and a fixed effect model. The results from the study show that the effect on mother's attitudes is not statistically significant and

the effect on father's attitudes is significant and increases in magnitude as their daughters get older.

This paper is particularly relevant and contributes to this body of literature by using very recent data in the context of the Netherlands. Given the rate of rapid societal change due to globalization and constant political shifts in power, it is important to keep updating the consensus on this topic with new data. Furthermore, as far as we are concerned this is the first study of this type to evaluate this topic in the Netherlands. As mentioned previously, the Netherlands provides an interesting case study as they employ the highest rate of part-time workers in Europe.

Section 4: Data and Methodology

4.1 Theoretical Framework

There are two prevailing theories used to provide a theoretical explanation for attitudinal change towards gender roles. The exposure and interest theory provide an explanation as to why men with daughters may be more likely to hold feminist views regarding gender norms.

The foundation of the exposure theory posits that an individual's attitude towards a social norm is more likely to change and develop if they are exposed to that value system or ideology (Kroska & Elman, 2009). In respect to gender norms, the theory proposes that individuals change their perspective regarding traditional gender roles when they encounter ideas or situations that introduce them to more feminist ideologies (Bolzendahl & Myers, 2004). In line with this theory, this paper argues that having a daughter exposes parents to more modern attitudes towards gender roles. More specifically, having a daughter (instead of a son) impacts the attitudes of fathers more so than mothers because they are introduced to new worldviews, and by default forced to understand the opposite genders perspective (Borrell-Porta, Costa-Fonta, & Philipp, 2019). The reason fathers are impacted to a greater extent is because men are less concerned about gender inequality than woman, and therefore their awareness must be raised by means of exposure through their children and significant others (Bolzendahl & Myers, 2004; Klein, 1984). In addition, mothers are less likely to change their attitudes towards gender norms because they

have “already crossed the threshold of exposure by experiencing situations in their own lives” (Borrell-Porta, Costa-Font & Philipp, 2019, p.28). Research supports the notion that fathering a daughter is likely to make gender equity issues applicable to men in new ways, while women already have pre-established relationships to these policies and to the inequality that these policies aim to eliminate (Bolzendahl & Myers, 2004; Sharrow et al., 2018).

The exposure approach is not limited to the impact that daughters can have in changing attitudes towards social norms. This perspective can also be applied to exposure to employed women and to education. Based on the theory, individuals who are exposed to employed women (mothers, spouses, colleagues) are more likely to adopt egalitarian views than those who are not (Kroska & Elman, 2009). Likewise, individuals who are exposed to feminist ideologies through education are also more likely to support liberal gender attitudes (Kroska & Elman, 2009).

Moreover, the interest theory is based on the interest structures of individuals. People work towards goals centered around their own interests. Therefore, when an individual’s self-interests benefit from gender equality then there is a higher likelihood that they will hold gender equalitarian attitudes (Bolzendahl & Myers, 2004; Warner, 1991). Warner (1991) argued that our interest structures can be expanded to include the interests of significant others in one’s life like a spouse and child. Men with daughters have more equalitarian attitudes towards gender roles because it is in their own interest. For example, as their daughters grow older, it may benefit the father to know that his daughter will be able to sustain herself independently from the support of the parents. This would include finding appropriate and well compensated employment.

Similar to the exposure theory, this expansion of interest is especially significant for men with daughters because the birth of a daughter can cause men to overcome a threshold of self-interest (Shafer & Malhotra, 2011). Considering the different interest structures of men and women, it follows to reason that women have a natural desire to promote gender equality, given that in today’s society it means to allow women to have access to equal opportunities as men do, whether it be in terms of professions, wages or even changing perspectives on their societal roles. (Bolzendahl & Myers, 2004). Whereas, men without daughters may be less likely to care about gender equality in the form of female labour force participation and equal wages because it

is not in their self-interest. By means of parenting, men with daughters acquire a better understanding of the difficulties that women/girls face in society and it is in their interest for their daughters to join the labour market.

Having outlined the theory of exposure and interest and acknowledged their importance in examining the potential for male attitudinal change towards social norms, one can develop the following hypothesis: An increase in the proportion of daughters, increases the probability of fathers having equalitarian attitudes.

4.2 Data

My data comes from the Longitudinal Internet Studies for the Social Sciences (LISS) panel, overseen by CentERdata. The data is a nationally representative sample of Dutch households. The entire panel consists of 4500 households and 7000 individuals. This study started in 2008 and is repeated yearly to track the life changes of the panel participants. Over time, the panel study measures the change in participant's lives, their response to life events and the effects of policy actions and overall societal changes. Part of the panel interview is dedicated to the LISS Core study which includes eight surveys, each with its own topic. The outcome variable - attitudes towards traditional gender roles - is collected in 'Politics and Values', one of the core studies of the LISS panel. For the purpose of this paper, I combined the data collected in the 'Politics and Values' and the 'Family and Household' studies in order to gather data for the outcome variable as well as the independent variables. As such, the data used comprises of 10 different waves, from two core studies, and covers the period from 2008 to 2017.

In this research paper, I evaluated the impact of fathering daughters rather than parenting more generally, as such, I restricted the sample to males only. As mentioned, the focus is on males with daughters because it is assumed that women have already passed the limit of exposure from their own experiences. After dropping all female respondents, the subgroup includes 56,334 male participants out of the original total sample of 116,617 respondents.

4.3 Measures

The outcome variable measures attitudes towards traditional gender roles, explicitly ideas towards the traditional male breadwinner model. As part of the LISS panel survey, respondents are asked to rate their views on the following statement: ‘the father should earn money, while the mother takes care of the household and the family’, on a scale of (1-5). (1) being fully disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) fully agree. The respondents who answer lower on the scale are considered non-traditional in their beliefs and those who answer higher on the scale hold increasingly traditional views.

The main explanatory variable (MEV) of interest is a binary variable representing the total number of daughters. The LISS panel requested that respondents list all of their children, and asked them several questions about each child, including their gender. The MEV was developed by adding together a generated dummy variable for each child born female. The data does not distinguish between natural children, adopted children, foster children and stepchildren. The constructed MEV includes all of these types of children because I am interested in the impact that parenting can have as opposed of evaluating the impact the act of childbirth can have.

4.4 Empirical Strategy

As shown in previous research, we know that the gender of a child affects a parent’s views towards traditional gender roles (Warner and Steel, 1999; Shafer & Malhotra, 2011). Based on this literature and the theory of exposure, I postulate that a father’s beliefs on gender roles can become more egalitarian by raising daughters. To establish a possible causal effect, the analysis makes use of a natural experiment – the birth or adoption of a child. The gender of any particular child entering a household is considered approximately random. This approximate random assignment enables a comparison between a Dutch man with an additional daughter and one with an additional son. The difference in traditional values between the men would create an estimate of the daughter impact (Washington, 2008). To approximate this experiment, I estimate the following OLS regression specification:

$$Y_i = \alpha + \beta_1 Daughters_i + \beta_2 TChildren_i + \beta_3 X_i + \varepsilon_i \quad (1)$$

Where Y_i is a dummy variable that represents the level of agreement with traditional gender roles of individual i . *Daughters* is the number of daughters that a father parents. *TChildren_i* are dummy variables controlling for the total number of children. X_i is a set of individual characteristics.

I estimate the impact of parenting an additional daughter, while controlling for the number of children. Conditioning on family size is important because it enables the coefficient on the daughters variable to represent the impact of parenting daughters as opposed to parenting sons. Also, by controlling for the number of children, the number of daughters and the number of sons are linearly dependent. As a result, it is impossible to determine if the change in views is due to more exposure with daughters or less exposure with sons (Washington, 2008) Moreover, based on information from previous literature, I included controls for individual characteristics. This includes; age, age squared, the natural log of gross income and origins¹. In next section of this paper, I will also add additional controls that are associated with attitudes towards feminist ideologies as a robustness check.

Table 1 reports some descriptive statistics for the subgroup analysis. The sample includes all male respondents. The average age of all male respondents is 40. Male participants have on average 2.35 children and on average 0.4 daughters. Most of the men are of Dutch origin (approximately 85%), in paid employment (42%) and are currently married (45%) or have never been married (45%).

Table 1: Descriptive Statistics

Variable	Resp	Mean	Std. Dev.	Min	Max
Dependent Variable					
Gender Norm Attitude	2,681	2.1789	0.9615	0	5
Independent Variables					
TOTAL NUMBER DAUGHTERS	5,633	0.3786	0.7548	0	9
AGE	5,633	39.6425	22.09737	0	99

¹ Origins was used as the closest data available to approximate race or religion of an individual.

AGE2	5,633	2059.818	1814.674	0	9801
INCOME (natural log)	4,488	8.2945	0.5767	0	15.1793
ORIGINS					
Dutch	2,405	0.8552	0.3519	0	1
First generation foreign - western	2,405	0.0288	0.1675	0	1
First generation foreign - non-western	2,405	0.0415	0.1996	0	1
Second generation foreign - western	2,405	0.0517	0.2215	0	1
Second generation foreign - non-western	2,405	0.0226	0.1487	0	1
TOTAL NUMBER OF CHILDREN					
Zero	727	0.0019	0.0438	0	1
One	727	0.1681	0.374	0	1
Two	727	0.4926	0.4999	0	1
Three	727	0.2209	0.4148	0	1
Four	727	0.0717	0.258	0	1
Five or more	727	0.0446	0.2065	0	1
EDUCATION LEVEL					
Primary	5,328	0.2298	0.4207	0	1
Secondary	5,328	0.2903	0.4539	0	1
Vocational	5,328	0.3912	0.48801	0	1
University	5,328	0.0887	0.2843	0	1
EMPLOYMENT STATUS					
Paid employment	5,328	0.4491	0.4974	0	1
Self-employed	5,328	0.0706	0.2561	0	1
Job seekers	5,328	0.0239	0.1527	0	1
Student	5,328	0.2457	0.4305	0	1
Takes care of housekeeping	5,328	0.0047	0.0685	0	1
Pensioner	5,328	0.1658	0.3719	0	1
Disability	5,328	0.0267	0.1613	0	1
Unpaid/volunteer work	5,328	0.0107	0.1032	0	1
MARITAL STATUS					
Married	5,633	0.456	0.4981	0	1
Separated	5,633	0.0032	0.0566	0	1
Divorced	5,633	0.0551	0.2282	0	1
Widow/Widower	5,633	0.0192	0.1371	0	1
Never been married	5,633	0.4664	0.4989	0	1

Note: 'Resp' is the number of unique respondents.

4.5 Assumptions

It is important to note, this estimation is run on the assumption that the gender of a child is randomly assigned, and parents are not following a gender-biased stopping rule (Washington, 2008; Borrell-Porta, Costa-Font & Philipp, 2019). Fertility stopping refers to couples that continue to have children until they reach a certain number of sons (or daughters) (Yamaguchi, 1989). The fertility stopping rule could potentially impact the number of female children in a family. Research does suggest that parents in Western Countries have a higher probability of having a third child if the first two are the same gender because they want a mix of both sexes (Borrell-Porta, Costa-Font & Philipp, 2019; Iacovou, 2001). Based on this rule, only the sex of the firstborn child is completely random. To take this into account, I have run an additional regression to analyze the impact of only the first child being female as an additional robustness check.

Section 5: Results and Robustness Checks

5.1 Results

The results from estimating equation (1) are presented in Table 2. I show the effect that being a father to daughters has on the level of agreement with traditional gender norms, specifically the belief that the father should earn money, while the mother takes care of the household and the family. As shown in the results, I find that an increase in the number of daughters decreases the probability of agreeing with the traditional breadwinner norm. For every additional daughter there is a .04 point decrease in the level of agreement. Although the magnitude of the coefficient is small, it is significantly different from zero at the 95% confidence level. In other words, the main explanatory variable is statistically significant and correlated to the dependent variable.

Looking through the regression results, the coefficient for each control variables have, for the most part, the expected signs. The results show that an increase in age has a slight decreasing effect on the outcome variable and is highly statistically significant (p-value < 0.01). As

expected, an increase in income has a decreasing effect on the level of agreement in traditional gender norms. A 1 unit increase in income results in a 0.35 point decrease in the dependent variable and is statistically significant (p -value < 0.01). In the other direction, an increase in the total number of children has increasing effect on the outcome variable. As the number of children increases the corresponding coefficient increases in comparison to the baseline, which is zero children. The results show that the coefficient is positive for all number of children and statistically significant (p -value < 0.05) for individuals with four or more children. Meaning, men with more children are more likely to agree with the traditional breadwinner norm. Moreover, the estimates of the origins coefficient are interesting but not unexpected. With Dutch native as the reference group, foreigners from western backgrounds have a negative coefficient and those from a non-western background have a positive coefficient. This holds for both first- and second-generation foreigners. These results indicate that men from western backgrounds are less likely to support traditional gender norms than those from non-western backgrounds.

In brief, estimations from the OLS regression shows that parenting daughters decreases the probability of agreeing with the male breadwinner ideology in men. The difference is statistically significant, but the magnitude of the coefficient is very small (-0.04). Therefore, one can reject the null hypothesis that the effect of female children on attitudes towards traditional gender roles is the same across Dutch males.

Table 2: Impact of daughters on traditional gender roles beliefs

	Coef.	Std. Err.
Main Explanatory Variable		
Number of Daughters	-0.0430*	0.0194
Control Variables		
Age	-0.0322***	0.0081
Age2	0.0003***	0.00007
Income	-0.3550***	0.0302
Origins		
First generation foreign - western background	-0.0518	0.0892
First generation foreign - non-western background	0.2674**	0.0817
Second generation foreign - western background	-0.1759*	0.0726
Second generation foreign - non-western background	0.0184	0.1644
Total Number of Children		

One	0.3506	0.2953
Two	0.3826	0.2944
Three	0.4375	0.2961
Four	0.6340*	0.3006
Five (or more)	0.7484*	0.30523
Constant	5.4036***	0.4334
N	368	
R Squared	0.0876	

Note: * p<.05; ** p<.01; *** p<.001

5.2 Robustness Checks

In this next section, I ran robustness checks to confirm the validity of my results by adding additional controls to the original OLS regression.

$$Y_i = \alpha + \beta_1 Daughters_i + \beta_2 TChildren_i + \beta_3 X_i + \beta_4 A_i + \varepsilon_i \quad (2)$$

Where $\beta_4 A_i$ represent the additional controls. The variables were added to equation (1) in order to include additional controls that are linked to beliefs towards traditional gender norm. These controls include; educational level, marital status, and employment status. It is expected that those with higher education levels will be less likely to agree with the male breadwinner norm. Also, other research has included marital status and employment in their analysis on gender norms as they are potentially correlated to the level of agreement with traditional gender norms (Borrell-Porta, Costa-Font & Philipp, 2019). Table 1 provides descriptive statistics for all additional controls.

Table 3 provides the results of the estimates from equation (2). As you can see in the table, the additional controls generate almost no change to the size of ‘number of daughters’ coefficient and remains statistically significant. The results with the inclusion of the additional control have the expected signed. As assumed, all levels of education have a negative coefficient. Education is a categorical variable where the baseline is individuals with only a primary education. Each level of education has a negative coefficient and higher levels of education (vocational and university) can be correlated with the outcome variable because they are

statistically significant (p -value < 0.001). Meaning, males with vocational and university education are most likely to have non-traditional attitudes. Moreover, employment status was included in the estimation and is also a categorical variable. The baseline in this case is individuals in paid employment. The OLS estimates show that students are the least likely to support traditional views compared to those in paid employment. However, the coefficient is not statistically significant. Also, individuals in the disability category have the largest positive coefficient (0.3) and is the only employment status that is statistically significant. This is possibly due to the fact that the sample is only men and men with disabilities may depend on their spouse to take care of them and their family. Also, regression estimates show that men who have never been married are less likely to agree with the male breadwinner norm in comparison to men who are married. Although the coefficient is relatively small (-0.204), it is statistically highly significant (p -value < 0.001). These results indicate that never being married is correlated with modern attitudes towards gender roles. In terms of marital status, the only category with a positive coefficient is widowers. However, the effect is very small and statistically insignificant. Overall, the results were as expected and further support the hypothesis.

Table 3: OLS Regression Results with Additional Controls

	Coef.	Std. Dev
Number of Daughters	-0.0452*	0.0183
Age	-0.0419***	0.0043
Age2	0.0004***	0.00003
Income	-0.2457***	0.017
Origins		
First generation foreign - western background	-0.0392	0.0442
First generation foreign - non-western background	0.2397**	0.0412
Second generation foreign - western background	-0.1585*	0.0365
Second generation foreign - non-western background	0.0163	0.0815
Total Number of Children		
One	0.3287	0.1494
Two	0.3442	0.1491
Three	0.4018	0.1499
Four	0.6088*	0.1522
Five (or more)	0.7517*	0.1544
Education Level		
Secondary	-0.1239	0.0318

Vocational	-0.3232***	0.0311
University	-0.5440***	0.0383
Employment Status		
Self-employed	0.0489	0.0329
Job seekers	0.1503	0.0499
Student	-0.4801	0.0896
Takes care of housekeeping	0.2156	0.0896
Pensioner	0.0796	0.0281
Disability	.3050**	0.0432
Unpaid/volunteer work	-0.1378	0.0584
Marital Status		
Separated	-0.3219	0.1115
Divorced	-0.1095*	0.0268
Widow/Widower	0.0050	0.0373
Never been married	-0.2041***	0.0311
Constant	1.5798***	0.2307
N	366	
R Squared	0.0856	

Note: * p<.05; ** p<.01; *** p<.001

As previously mentioned, there is the possibility that the results are impacted by the gender-biased stopping rule. The proportion of daughters could potentially be a result of a gender bias. Although a parent cannot choose the gender of any given child, they can however choose to continue having children until they obtain their preferred gender. As a result, it is only the gender of the first child that is truly random. To determine if the population is following the fertility stopping rule and further validate the main results, I performed the following tests: (1) I ran a regression to estimate the impact of only the first child being born female; (2) I compared the distribution of the number of children conditional on the gender of the first child.

For the first test, this study examined the impact of the firstborn child being female (and not male) on level of agreement with traditional gender roles. I ran the following regression:

$$Y_i = \alpha + \beta_1 Firstchild + \beta_3 X_i + \varepsilon_i \quad (3)$$

Where $\beta_1 Firstchild$ is a dummy variable for the first child being born female rather than male. The same basic variables from equation (1) – age, age squared, income and origins – are included in the regression.

The results from estimating equation (3) are presented in Table 4. The results are in line with estimates from equation (1) and (2). The coefficient of the first child variable is statistically significant (p -value < 0.01). This robustness check also supports the hypothesis that the proportion of female children decreases the level of agreement with the traditional gender roles. Meaning the baseline OLS regression estimate are robust and all estimations support the hypothesis.

Table 4: First Daughter Effect

Variable	Coef	Std. Err.
1stCHILD	-0.0488**	(0.0079)
AGE	-0.027***	(0.0012)
AGE2	0.0003***	(0.00001)
INCOME	-0.2861***	(0.0064)
ORIGIN		
First generation foreign - Western	0.1029*	(0.0213)
First generation foreign - Non-Western	0.2560***	(0.0194)
Second generation foreign - Western	-0.1029**	(0.0165)
Second generation foreign - Non-Western	0.0596	(0.0280)
CONSTANT	4.9260***	(0.0589)
R Squared	0.0652	
N	1,587	

For the second check, I compared the distribution of the total number of children conditional on the first child by performing two-sample Kolmogorov-Smirnov test (K-S test) for equality of distribution functions. The K-S test compares two cumulative frequency distributions for two independent samples (Gibbons & Chakraborti, 2011). For this study, the test compares how many children are born in total given the first child is male to the total

number of children given the first born is female. This test was chosen because my study focuses of the proportion of daughters and not only the impact of having one daughter. This is important because parents are likely to be affected by the gender of all their children. The results from the two sample Kolmogorov-Smirnov test indicate that there is no fertility bias in the sample (See table 5). These results and those of the other robustness checks support the main regression estimations and further validates the hypothesis. In the next section, I will discuss how these results are relevant to policy makers and briefly summarize the study.

Table 5: Two-Sample Kolmogorov-Smirnov Test Results

Sample Group	D	P-Value
First Born Male	0.0028	0.94
First Born Female	-0.0077	0.622
Combine	0.0077	0.972

Note: D

Section 6: Discussion and Conclusion

Understanding the potential that individuals may have in changing their beliefs towards traditional gender norms is crucial for tackling gender inequality. The results from this paper show that being a father to daughters, as opposed to only to sons, has a statistically significant but markedly small effect on influencing men’s gender norm attitudes. My results estimate a 0.043 unit decrease in the likelihood of men agreeing with the traditional gender role norm for every additional number of daughters. This is in line with past research that also demonstrate a relationship between gender role beliefs and parenting daughters (Shafer & Malhotra, 2011; Borrell-Porta, Costa-Font & Philipp, 2019; Sharrow et al., 2018). Also, I have demonstrated the robustness of the estimations by taking into consideration additional controls that may be correlated to the outcome variable and by showing that the results are not impacted by endogenous fertility stopping rules. Although the effect was minimal, level of education, age, and marital status have an impact on attitudes towards gender norms.

This paper adds to the few papers that have that have also analyzed the impact of female children on gender role attitudes. Unlike previous research, this is the first study to focus on the Netherlands. Almost all of the research to date has been focused on the United States (Washington, 2008; Warner & Steel, 1999; Shafer & Malhotra, 2011) and more recently some studies have used data from the UK (Borrell-Porta, Costa-Font & Philipp, 2019). Also, this is the only study to cover recent years (2008-2017) which is important because we are in a period of immense change due to globalization.

The differential impact of fathering a daughter on gender norm beliefs is in line with the exposure and interest theory. By means of parenting, men with daughters acquire a better understanding of the difficulties that women/girls face in society. As a result, they change their viewpoint regarding traditional gender roles. Also, it follows the interest theory that as male parents have daughters, they share in their interest of becoming financially independent and contributing to society. And thus, male parents with daughters have additional vested interests in making sure society holds more non-traditional views towards gender norms.

To conclude, by understanding how beliefs about the traditional male breadwinner can change, we can more effectively develop policies that promote gender equality. It is critically important that women are recognized as important contributors to a nation's economy and can take up positions of power that currently may be taken up by less educated and qualified male counterparts. This change could potentially go a long way in influencing economic growth and have an impact on future female generations in aspiring to pursue greater careers.

Traditional gender norms must change in order to create an environment within which women feel empowered and confident to pursue their professional ambitions, take on roles of greater power, earn equal wages and feel like equal contributors to the economy of the society they live in. It is a nation's responsibility to make sure that everyone regardless of race or gender has an equal opportunity to development, all else being equal. This study demonstrates that currently there are differences in how men view gender roles simply based on whether they have daughters or not. This points to the discrepancy that we as a society

must address to make sure that all parents regardless of the sex of their children believe that men and women should have equal opportunities in society.

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