

ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Master Thesis Policy Economics

Subsidizing childcare and gender role attitudes

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Date: 01/09/2023

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Abstract

In this study, I examine the effect of subsidizing childcare on how people view gender norms. I examine this through the effect of subsidizing childcare on female labour participation and the effect of female labour participation on how people view gender norms. To do this, I use data from the OECD Database and from the European Value Survey. The OECD Database is used to measure the effect of subsidizing childcare on female labour participation on a national level. The European Value Survey is used to measure the effect of female labour participation on the view on gender norms on an individual level. The results provide evidence of a positive correlation between subsidizing childcare and female labour participation and between female labour participation and less traditional views on gender norms. These results are relevant in light of the strategy of the EU to effectively stimulate gender equality and because the Netherlands is planning to freely facilitate childcare for free in the near future. The biggest limitation of this study is that there is a high possibility of reversed causality. Future research should focus on the direction of the correlation between subsidizing childcare and how people view gender roles. Other interesting research would be into the effect of other policy implementations focussed on gender equality and their effect on how people view gender norms.

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1. Introduction

For years, the Netherlands has been struggling with labour shortages (NOS, 2022). At the same time, the unemployment rate has been steadily declining to 3.6% of the labour force (Centraal Bureau voor de Statistiek, 2023). In addition, the Netherlands has a large group people working part-time. Of all women, 70% worked part-time in 2021 and of all men this was 28% (Centraal Bureau voor de Statistiek, 2022). Therefore, the government came up with a solution. On the 15th of December 2021 the coalition agreement was presented. One of the bigger priorities of the coalition agreement was working toward free childcare for working parents with children under 12. The coalition agreed that from 2025 the government would reimburse 96% of the cost of childcare, therefore only 4% would be paid by parents (Nationale Onderwijsgids, 2023). The idea behind the policy was that women who are working parttime will put their children in childcare and start to work fulltime. This would solve the labour shortages.

Furthermore, the idea was proposed next to a number of policy implementations to increase gender equality. The sentence after the announcement of free childcare in the coalition agreement stated that the government will work toward gender equality in the labour market by expanding paid parental leave to 70% (Ministerie van Algemene Zaken, 2022). Moreover, the sentence thereafter showed the promise of the government to stimulate a proportional representation of women in leadership positions. This leads to believe that the policy implementation has a secondary goal: increasing gender equality. However, it is not clear if this goal will be met.

At the heart of creating gender equality are gender norms. How gender norms are viewed, is one of the determinants of how much room women in a country have to lead an independent life. In recent decades, many countries have tried to make progress in creating gender equality. However, the effects of such policies remain often unclear. Therefore, policy making in this area is hard. The aim of this study is to partially remedy this problem. Research into the side effects of policies on gender norms can contribute to the knowledge in this scientific area. Therefore, it can effectively guide policies to achieve gender equality in a more targeted way in the coming decades.

All in all, this leads to the following research question:

How do government childcare subsidies impact gender role attitudes?

This research is both socially and scientifically relevant. The social relevance is grounded in two things. Firstly, the Dutch government describes itself as an international advocate of gender equality and empowerment of women and girls. Based on the EU gender equality strategy, the Netherlands is committed to fight for this goal (Ministerie van Buitenlandse Zaken, 2020). When government

subsidization of childcare positively affects gender norms and with that gender equality, this positively reflects on the Dutch cabinet's commitment to promoting gender equality. Additionally, it would make a good impression for the Netherlands as a country towards the EU and beyond.

Secondly, Pillar 1 of the European strategy states that making the EU's gender equality efforts more effective is seen as a horizontal priority in policy and programming work under the EU external action (COM–European Commission, 2020). Right now, much is unclear about the effectiveness of policy implementations to stimulate gender equality. This is because current scientific studies yield conflicting results and there is more to be discovered about the effects of specific policies. When this research shows that facilitating free childcare does or does not effectively contribute to changing gender norms (and with that gender equality), it can therefore make an important societal contribution to European policy making.

The reasoning above simultaneously reflects the scientific value of this study. The study could shed more light on the effects at play in this particular area of expertise. This research therefore complements the currently existing literature.

There is some literature on this topic, which mostly dives into the effects of subsidizing childcare on female labour participation and on factors influencing gender norms. Most theoretical papers regarding the effect of subsidizing childcare on female labour participation describe a form of choice model and conclude that subsidizing childcare improves female labour participation (Morrissey, 2017 and Tekin, 2007). The models describe that subsidizing childcare makes childcare cheaper and therefore parents are more likely to put their children in childcare. This leaves more room for them to work and therefore female labour participation will rise. This especially affects single mothers, because they are more dependent on their own income (Connely and Kimmel, 2003). However, there are also theoretical papers which show that the effect of subsidizing childcare can be ambiguous. Gelbach (2002) and Fitzpatrick (2012) state that there is both an income effect and substitution effect at play and that it is not clear which effect prevails. The substitution effect is the effect that if childcare gets cheaper, more parents will use it and this will stimulate women to work. The income effect affects the parents who already work and pay for childcare without subsidy. Through the subsidy, they will receive a discount on the price they are currently paying for childcare, which gives them a higher net income. Because of this higher net income, they are more likely to start working less. Empirical papers on this topic support the theory that the substitution effect dominates. For many countries a positive correlation can be found between subsidizing childcare and female labour participation. However, there remain differences between countries with regard to the magnitude of the effect. Boelmann,

Raute and Schonberg (2021) and Fortin (2005) point out that cultural and discriminatory obstacles might be reason for the differences in the magnitude of the results.

The scientific papers regarding the effect of female labour participation on the view on gender norms are mostly empirical. They indicate that female labour participation contributes to people having more egalitarian views on gender norms (Thornton, 1983; Ferber, 1982; Fortin, 2005). According to Tallichet and Willits (1986) this affects not solely men, but also women's views on gender norms. Haller and Hoellinger (1994) contradict these results and write that their findings do not support the idea that people will have more egalitarian views on gender roles when the employment rate of women increases. Moreover, there are also papers which show that the effect works the other way around and that the view people have on gender norms influences the amount of female employment (Thornton, 1979 and Macke, Hudis and Larrick, 1978). Finally, additional literature suggests that the effect of female employment on a more equal view of gender norms outweighs the effect of a more equal view on gender norms on female employment (Molm, 1978).

The effects mentioned in the literature have led to two hypotheses for this study. The first hypothesis is that subsidizing childcare leads to increasing female labour participation. The second hypothesis is that increasing female labour participation positively correlates with a more equalizing view on gender norms.

I tested the two hypotheses by performing two two-way fixed effects regressions. For the first two-way fixed effects regression I used national and annual Organisation for Economic Co-operation and Development (OECD) data for both the amount of subsidizing of childcare and the percentage of female labour participation. Subsidizing childcare is measured as the amount of public expenditure on childcare and early education per child for children between the age of 0 and 5 in US dollars. To control for increases or decreases of the total government expenditures, I use in the regression the public expenditure on childcare as a percentage of the total government expenditures. Other control variables are also added. I performed the regression for the years 2000 to 2017. It is a two-way fixed effects regression since time fixed effects and country fixed effects are both added to the regression.

For the second two-way fixed effects regression I used individual data from the European Value Survey (EVS). I perform the two-way fixed effects regression for both females and males independently. I measure female labour participation for female respondents by whether or not they were employed during the interview. For male respondents I measure female labour participation by whether or not their partner is employed. To measure the view on gender norms, I take into account two statements. The first statement is: 'When a mother works for pay, the children suffer.' which is referred to by the title 'Children' in this study. The second statement reads: 'A job is alright but what most women really

want is a home and children.’ which is referred to as ‘Home’. I perform a logistics regression which means that it measures the effect on the chance that a respondent agrees with the statement. I perform the regression once with time and country fixed effects and once with country-specific time-trends. For both regressions I add certain control variables like age, the relationship status, income and whether or not the respondent is religious.

The results suggest that both the hypotheses hold. For the first hypothesis, the results show that an increase of 1% of the public expenditure on childcare and early education as a percentage of total government expenditures is correlated with an increase in the national female labour participation of 0.069%.

For the second hypothesis, the results of the two-way fixed effects regressions show that female respondents who are employed are 20% less likely to agree with the statement ‘Children’ and 18% less likely to agree with the statement ‘Home’. Moreover, male respondents who have a partner who is employed are 28% less likely to agree with the statement ‘Children’ and 23% less likely to agree with the statement ‘Home’ according to the two-way fixed effects regression results. Taking an average of agreement with the two statements, the results indicate that female respondents who are employed are 19% less likely to agree with traditional gender norms and male respondents who have a partner who is employed are 25.5% less likely to agree with traditional gender norms.

One of the biggest limitations is the problem of reversed causality in this study. This is because it is questionable whether or not there is solely an effect from subsidizing childcare on female labour participation or whether there is also an effect of female labour participation on subsidizing childcare. According to multiple papers this is a real concern (Boelmann, Raute and Schonberg, 2021; Jaumotte, 2004; Fortin, 2005). At the same time, the problem seems bigger for the first regression than for the second regression, since Macke, Hudis and Larrick (1978) and Molm (1978) provide proof that the effect of female labour participation on gender role attitudes is heavily dominant or the only existing effect.

The upcoming structure of the study is as follows. Section 2 outlines the literary review. Section 3 discusses the methodology, which includes the research design, data, an explanation of the models and multiple descriptive statistics. Section 4 shows the descriptive evidence. Section 5 provides the benchmark results. Section 6 presents the limitations of the study. Section 7 portrays the robustness checks which I have performed. Section 8 reflects the discussion. Section 9 summarizes and concludes.

2. Literature

In this chapter, I outline both theoretical and empirical literature surrounding gender equality and free childcare facilitation. Since the supposed effect of free childcare facilitation on gender norms works through an indirect mechanism, the chapter is divided into two subchapters. Firstly, I discuss the effect of subsidizing childcare on female labour participation. This will provide proof whether or not women will work more if childcare is cheaper. Secondly, the chapter will go into the interaction between female labour participation and gender roles attitudes. I reflect on whether an increase in female labour force participation has an effect on how people view gender norms and if it does, if this effect is equalizing or not. At the end of the chapter, I perform a hypothesis based on the literary conclusions.

2.1 Effect of subsidizing childcare on women's labour participation

2.1.1 Theoretical evidence

According to Morrissey (2017) economic theory implies that lower childcare costs, through subsidized care or the provision of free or low-cost arrangements, decreases the expenses of employment and in turn promotes the usage of early care and education. Therefore, it increases the chance that parents are employed and lengthens the working hours of parents.

Blau and Currie (2006) also outline such a theory. The model works as follows. The demand for childcare is analysed by using a straightforward one-person static labour supply model enhanced with assumptions regarding childcare. In the model, the mother serves as the agent and decides how to care for her children. An assumption is made that childcare is uniformly of high quality and commands a market rate of a certain amount of dollars per hour of care provided for each child, as provided by the mother. The mother is unable to care for her children while she works because there is no informal, unpaid care accessible. When taking unpaid/informal care into the model, it will be assumed that the mother will act as though unpaid childcare has an opportunity cost if she pools her income with the relative or has preferences for the relative's free time. Furthermore, there are no fixed costs associated with work and the hourly wage rate is constant. In the model, the price of childcare per hour is $p = \alpha + \beta q$, where α and β are parameters determined in the market and q is the quality of the childcare. The model shows that the desire to work lessens as a result of an increase in childcare costs brought on by a rise in either α or β . An increase in α has a more harmful impact on employment than a comparable increase in β . Therefore, according to the model an "unconditional subsidy" is the best way to facilitate employment.

The theoretical model discussed above has two issues, according to Blau (2003). First of all, it fails to take into consideration the possibility of uncompensated childcare. According to the model, the cost of childcare influences the choice of employment with regard to three situations. Firstly, through the

effect on utility of the employment-childcare choice that involves paid childcare. Secondly, through the effect on utility of the employment-childcare choice that involves being unemployed. Thirdly, through the effect on utility of the employment-childcare choice to use solely unpaid care. Blau (2003) does not find this realistic. The second issue she has is determining how to calculate the cost of day care. Estimating a reduced form price equation on a sample of mothers who are employed and pay for care results in biased estimates if unobserved factors that affect employment and childcare behaviour are related to the unobserved determinants of the price of care.

Tekin (2007) presents a slightly different model to examine the effect of childcare subsidies on maternal labour force participation. His study uses data from the 1997 National Survey of America's Families (NSAF) to create a behavioural model for single mothers' decisions to choose between part-time and full-time employment as well as whether or not to pay for childcare. Together with continuous salary equations for part-time and full-time employment as well as the cost of childcare, a multinomial choice model for the discrete decisions of employment, childcare payment, and childcare subsidy receipt is calculated. He finds that the cost of childcare and wage rate both have an impact on single moms' behaviour in ways that are consistent with economic theory. When the cost of childcare falls, more women work and use paid day care and the same goes for a rise in the full-time pay rate. Additionally, he discovered that the impact of the part-time wage rate on employment is significantly smaller (elasticity of 0.08) than the impact of the full-time salary rate (elasticity of 0.66). Following the calculations, the price elasticity in relation to overall employment is -0.121. In the overall literature on this topic, the price elasticity is often higher. This result is therefore on the lower end of the range of estimations mentioned in the related literature. Meanwhile, the results are comparable to other papers that use a multinomial choice model in the estimation.

Connelly and Kimmel (2003) also work with survey data of single mothers from the United States of the years 1992 and 1993. They use a model of individual decision making, while taking into account four constraints. These four constraints are a money budget constraint made up of the mother's labour income and nonlabour income, a production function for child services, a mother's time constraint, and a child's time constraint. The mothers in the model attempt to maximize their utility over goods and child services. Three activities occupy the time of mothers: working in the labour market, parenting responsibilities, and leisure. The researchers obtain the individual's indirect utility function from this theoretical model, which has two to four different values depending on the various work and welfare outcomes. They discover that, for a range of different parameters, single mothers' employment is sensitive to the estimated hourly cost of childcare. Once the jointness of childcare subsidy and employment is taken into account, the elasticity of reciprocity with regard to the estimated price of childcare ranges in value from 1.01 to 1.94. Similar to what has been discovered in other research of

single moms, the employment elasticity with regard to the anticipated cost of childcare is estimated to be between -0.32 and -0.42.

Moreover, there is a relevant paper of Haan and Wrohlich (2011). To estimate behavioural responses to childcare reforms, they created an intertemporal structural model. According to their findings, increasing childcare subsidies, while requiring employment, boosts both the labour supply of all women and the fertility rates of highly educated and childless women. Their results show an average participation rate increase of 1.6% and average increase of working hours of 2.4%.

Even though the theoretical models above provide evidence that childcare subsidies increase maternal labour participation, there are papers which argue this statement. Take Fitzpatrick (2012), who describes that the effect of childcare subsidies can be ambiguous. She writes that lower day care expenses encourage working for parents who do not already utilize childcare and are not in the labour force. But she mentions that cost reductions also reduce the reservation pay and raise the net benefits of employment. Therefore, reduced day care costs produce an income and a substitution effect for parents who are already utilize day care and who are engaged in a paid job. Thus, work becomes more alluring due to the rising shadow price of leisure (substitution effect) and the net advantages of working an extra hour increase. In addition, the total amount of accessible household money rises, which could result in a decrease in market job hours (income effect). Ex ante, it is unclear which effect will prevail.

Gelbach (2002) has a theory in line with Fitzpatrick (2012). In his two-good framework, public schools offer a certain amount of childcare to families "free of charge". As a result, they subsidize day care at full price for a woman who works less hours than the school year (and day) provides for. These mothers are encouraged to start working or expand the number of hours they work because of the price subsidies. On the other hand, the program offers an income benefit to women who (already) work longer shifts than the length of the school year (and day), reducing the number of hours worked. Again, the question is if the income or substitution effect has the upper hand.

All in all, according to economic theory it is not entirely clear what the effect of publicly (free) provided childcare will be on the labour participation of women. At the same time, most papers which provide a theoretical basis for examining this effect find a positive correlation between childcare subsidies and maternal labour supply. This supports the thought that childcare subsidies do indeed support labour participation of women. In my study I do an empirical analysis, which means that I use existing data instead of creating a theoretical economic model. The theoretical literature is therefore used as a base to formulate my hypotheses. At the same time, my research can help to confirm whether the substitution effect or income effect prevails as described by Fitzpatrick (2012) and Gelbach (2002). If

there is a positive correlation between subsidizing childcare and female labour participation this would endorse the thought that the substitution effect prevails.

2.1.2 Empirical evidence

There is also empirical evidence pointing out that subsidizing childcare stimulates the labour force participation of women. Take Givord and Marbot (2015), who provide evidence that increased childcare subsidies on paid day-care use in France significantly and positively impacted the short-term participation rate of mothers of preschool children by 1 to 2 percentage points. They find this evidence by doing a natural experiment provided by the PAJE, which is a French reform in family allowances introduced in 2004. Also, for the Netherlands an effect of an increased subsidy on childcare on maternal employment was found. The altered subsidies raised the weekly hours worked by mothers by 1.1 hours (6.2%) and the employment rate of mothers by 2.3 percentage points according to Bettendorf, Jongen and Muller (2015). Moreover, Carta and Rizzica (2018) show similar results for Italy with an increased maternal labour market participation of 6 percentage points and an increase in employment of 5 percentage points. Even in Spain, comparable results were confirmed. Nollenberger and Rodríguez-Planaz (2015) suggest that providing publicly financed full-time day care for 3 years old children increased mother's employment by 9.6% in Spain in the early 1990's. An alternate measurement from them calculated that for every ten more children enrolled in public childcare, two moms entered the workforce.

Furthermore, Huebener, Pape and Spiess (2020) examine the impact on parental labour supply of reforms that eliminated day care fees in Germany. These reforms eliminated paid day care contributions for the year before children start primary school. The researchers offer proof that the reforms increase mothers' working hours and the frequency of day care usage by 7.1%. Mothers who are single, don't have any younger children, work in areas with higher unemployment rates and/or are highly educated experience the strongest reactions. Müller and Wrohlich (2020) show in addition to this that according to their specification, which incorporates temporal and county fixed effects, an increase in subsidized childcare slots of one percentage point in Germany will result in a 0.2 percentage point rise in mothers' labour market participation rate. The rise in part-time employment with relatively long hours (20–35 hours per week) accounts for the overall increase in employment. Finally, they state that mothers with medium-level educations are largely responsible for the effect. Bauernschuster and Schottler (2015) show comparable results of positive causal effects of public childcare on labour market participation of mothers in Germany.

Besides research in Europe, there are also two papers which outline positive results of subsidies on childcare in Canada. Lefebvre and Merrigan (2008) proof that a policy measure in Canada which

reduced the parental fee of childcare to 5 dollars a day increased the labour participation of mothers with preschool children in Quebec with 8.1 percentage points. The effect was measured based on participation, annual weeks, hours worked and earned income for data from 1993-2002. Moreover, Lefebvre, Merrigan and Verstraete (2009) demonstrate that a program in Québec, which reduced childcare to between 5 and 7 dollars a day, had significant effects on the dynamic labour supply for mothers in Québec. They show that the benefits were particularly big for cohorts of women who were more likely to receive subsidies from the time of the child's birth until the child turned five. For instance, the program increased the number of hours worked by 160 hours in 2004 for women who had at least one kid between the ages of 6 and 11 but no children under the age of 6. However, the authors mention that the implementation of this policy coincided with a period of rapid real GDP growth in Canada (1996–2004), which enhanced aggregate labour demand and aided women who were encouraged to look for work in the labour market. They warn that the effect is likely to be smaller when there is a less favourable labour market.

In the USA similar results were found. Ha and Miller (2015) looked at the connection between mothers' usage of childcare subsidies, their income and labour force participation in Wisconsin. They used administrative data of subsidy use for moms who qualified for childcare subsidies between March 2000 and February 2001. Moreover, they estimated each economic result using multinomial regression models independently and they estimated both outcomes using logistic regression models. Receiving a subsidy was linked to a higher likelihood of increased earnings and duration of employment. These correlations, however, were generally only noteworthy when mothers got a stipend for 12 months or longer.

Moreover, Cascio (2009) finds that when public kindergarten was installed in the USA, which is free and available for children between five and six, the employment responses were fairly significant for single mothers of five-year-olds who had no younger children. In particular, four of these types of moms entered the workforce for every ten children that were enrolled in public schools as a result of the efforts. There were no results found for mothers who had more children, among which at least one younger than five. This makes sense since there would still be the need to take care of the younger children, even when sending the eldest to kindergarten. In conclusion, the results show that the publicly available kindergarten provided room for women to start working one year earlier than they normally would. Gelbach (2002) also examines the effect of public kindergarten in the United States. His findings offer evidence that public kindergarten significantly affects the availability of maternal labour. Free public education for children with the age of five raised labour-supply measures by 6–24% among single women with the youngest child of the age of five. Barua (2014) adds to this. She shows that married women increase their labour supply by up to 17% if their five-year-old is enrolled in

school, according to data from the 1980 US Census. She also uncovers evidence of intertemporal substitution in the labour supply using a sample of 7- to 10-year-old children from the National Longitudinal Survey of Youth (NLSY). In particular, a mother whose child entered school at age 5 provides less work than a mother whose child entered school at age 6. The pure wealth impact is to blame for this decline. Finally, according to the results the uncompensated labour supply elasticity is 0.37, intertemporal substitution elasticity is 0.73, and wealth elasticity is 0.36.

Moreover, there is also proof of the long-run effect of childcare subsidies on labour participation of women. Havnes and Mogstad (2011) show that the likelihood of finishing high school and going to college increased along with the expansion of the subsidy on childcare in Norway. According to their subsample study, girls account for the majority of the influence on earnings, whereas children with low-educated moms account for the majority of the effect on education. This implies that having easy access to affordable childcare levels the playing field by promoting intergenerational mobility and eliminating the gender wage gap. The results from this study show that even if it would not be the case that adult females would work more due to the childcare facilitation, it could still improve labour force participation of women in the long run, since it influences young girls.

Jaumotte (2004) shows results in further addition to the literature above. She points out that there are beneficial effects on female labour participation of childcare subsidies. The study evaluates the impact of different variables on the pattern of female participation rates in OECD nations by using panel data. According to the paper, besides childcare subsidies, paid maternity leave and a more neutral tax treatment of second earners also contribute to a higher labour participation of women. However, there are also other major factors influencing female involvement, which are cultural attitudes, general labour market conditions, and female education. Boelmann, Raute and Schonberg (2021) provide a comparable study on the cultural obstacles for maternal labour supply. They dive into differences of maternal labour supply caused by cultural effects in Germany. During the cold war, West Germany (FRG) favoured a more conventional male-breadwinner model, while socialist East Germany (GDR) strongly pushed mothers to engage in the labour market. The results of the return-to-work habits of first-time moms in East and West Germany who gave birth in 2003 (13 years after the cold war) reveals significant inequalities in child punishments. Seven years after giving birth, East German moms regain 70% of their pre-pregnancy wages, compared to West German mothers who only recover 45%. Differences in early maternal employment at both the extensive and intensive margins are the main causes of these trends. Moreover, even though the current parental leave legislation does not offer them big financial incentives to do so, a sizable portion of East German mothers returns to work precisely 12 months after giving birth, when leave benefits and job protection would have ended under the previous GDR regime.

More empirical proof of cultural influences on labour participation of women is shown by Pollmann-Schult (2016). He writes those national variances in gender culture, regulations, and working time structures are the cause for a sizable portion of cross-national variations in maternal labour supply. Women who have more education, have a more egalitarian view on gender norms and/or have low-status partners desire to work longer hours according to him. Fortin (2005) enhances this and states that discrimination plays a huge role in obstructing women's demand for equality in the labour market.

There is also theoretical proof of these thoughts, which is provided by Borck (2014). He structures a model with endogenous fertility, female labour supply and childcare choices driven by cultural differences. The model states that if everyone assumes that day care usage will be zero, then there will be no need for childcare, which results in zero consumption of childcare ex post. In line with this, there will be low female fertility, a lack of female labour and there will be a wide wage disparity. On the other hand, if voters anticipate high day care demand, they will vote for high provision of childcare, which results in high ex post demand of childcare. The female labour supply and fertility rates will be high, and the salary gap will be minimal. In the high-childcare equilibrium, the availability of childcare, fertility, and female labour supply all increase in proportion to the average society attitude toward working mothers, while the wage gap decreases in proportion to the average attitude. These results show that cultural background can indeed hinder women to participate in the labour market.

In conclusion, there are many articles providing empirical proof of an increase in female labour supply (both short term and long term) due to the subsidising or free facilitation of childcare facilities. However, the range between the elasticities is quite big, where the smallest effect is found to be a difference of 1 to 2 percentage points and the highest labour supply elasticity is found to be 0.37. Furthermore, there are articles presenting proof that cultural differences can greatly affect female labour supply. This can be the reason why the effect of subsidizing childcare on female labour supply differs between countries. It could also be a warning signal that in some countries there might not be an effect of subsidizing childcare on female labour supply. Either way, it should not be forgotten.

In a lot of the studies described in this subchapter, the researchers examine the consequences on female labour participation with regard to a specific policy implementation. In my study I perform a cross-national analysis based on the OECD Data of 17 years. In terms of the design of the study, Jaumotte (2004) is a study which more closely resembles mine, with the difference that I specifically focus on the effect of subsidizing child care on female labour participation. Because my study differs in design from most of the other empirical papers, it is hard to predict whether my results will be similar with those as described above. However, with so many different papers, the expectancy is that

the results will not be far off. The literature above also gives a first warning of the danger of reversed causality in my study, which will be discussed in more detail later on.

2.2 Interaction between labour participation and gender norms

Since it is shown in literature that subsidizing and free facilitation of childcare increases the labour participation of women, the next question is what the effect is of increased labour participation of women on gender role attitudes. I discuss this in this subchapter. Since the literature regards mostly empirical papers, this subchapter is not divided into a theoretical and empirical part, but all literature will be discussed together.

Firstly, Thornton (1983) examines the nature of sex-role attitude changes among women, the ways in which women's sex-role attitudes influence and are influenced by their behaviour and the ways in which parental attitudes and behaviour influence the sex-role orientations of children. He uses panel data from the United States of women and their children. His results show that youth, labour force experience and educational attainment contribute to the formation of egalitarian views of women's roles. This means that an increase in labour force participation of women would turn views on gender norms to a more egalitarian standard. According to the paper, there is also evidence of reciprocal effects of attitudes with labour force participation. Ferber (1982) presents results that are comparable. Panel data from the United States is used with multiple cohorts of young couples. She concludes that when husbands become accustomed to having wives stay at home, their opinions regarding women in the workforce tend to change to a more traditional view. Fortin (2005) adds to this. She discovers that perceptions of women as homemakers, measured by the agreement with the claim that "Being a housewife is just as fulfilling as working for pay", are strongly correlated with female labour participation. The agreement to this statement shows strong significant negative correlations with whether a woman is employed.

There are also papers which show that the effect might work the other way around. Thornton (1979) concludes that the most crucial aspect of working as a woman is the extent to which a woman identifies the female role as that of housewife and homemaker. Women who have traditional definitions concerning this role are less likely to be working, and have fewer plans to work in the future. Furthermore, Mason & Bumpass (1975) reveals that the outlook of women toward the sex-based familial division of labour is supported by beliefs about the needs of children and women. This raises the question whether it is evolving gender views which are causing female labour participation to increase or female labour participation resulting in more egalitarian gender norms. Macke, Hudis and Larrick (1978) give an answer to this question, while using longitudinal data. They write that views on gender norms affect the labour participation a little bit. On the other hand, the labour force

participation of women does heavily affect the view on gender norms. Therefore, this last effect seems to be dominant. Molm (1978) shows even more decisive results. The main goal of her research is to determine the direction of causality between opinions toward sex roles and the work status of women. According to a two-stage least squares analysis that she performs, there only a one-way influence from employment status to opinions about sex roles.

Boring and Moroni (2023) show further proof of the thought that an increase in labour participation of women will provide a more egalitarian view on gender norms. Their research goes into the effect of the closing of childcare facilities due to the COVID-pandemic on the views on gender norms in France. They find evidence that the initial lockdown of the COVID-pandemic was correlated to a return to more conventional views on gender norms. This is mostly caused by men and women not being able to work as much as they did before and being stuck at home to take care of the children. Men in general and respondents with young children in the home mostly caused the effect to happen.

Moreover, Alesina, Giuliano and Nunn (2013) provide evidence that the pattern of labour participation influencing gender norms goes far back in time. They examine differences in gender norms which are linked to the use of the plough (in agriculture) many decades ago. They state that since the plough was not easy to handle by women, the idea that women belong in the home was created in societies that practiced plough agriculture and therefore it ensued a gender-based division of labour. These cultural ideals have endured even when the economy shifted away from agriculture, frequently impacting the engagement of women in activities undertaken outside the home such as market work, entrepreneurship or participation in politics. Their results proof a significant and positive correlation between past plough use and current gender roles, even within countries. Tallichet and Willits (1986) also show a positive correlation between female labour participation and equal gender role attitudes. They state that women who are employed are more likely to change their view on gender norms than unemployed women. Additionally, among the employed women, the amount of cash earned was favourably related to modifications in attitudes. These results highlight the relationship between changing gender roles attitudes and economic independence.

There are also papers going into the effect of maternal labour supply on gender norms as viewed by their children. Kiecolt and Acock (1988) discover for example that the employment of mothers boosts women's support for increased political chances for women and decreases their acceptance of traditional gender roles. Furthermore, in comparison to people from intact homes, men and women who lived solely with their mother after a divorce have more egalitarian attitudes about women in politics. Lastly, women in stepfamilies whose parents divorced also have more feminist views about women in politics, compared to women from intact households. In addition to this, Powell and

Steelman (1982) conclude that also adult men's sex-role attitudes are strongly influenced by maternal status traits. According to the researchers they are even more heavily influenced than those of adult women and the effects are biggest when the mother works during early childhood. Tomeh (1978) supports this and shows that for males, the sex-role orientation of a son is influenced both by the father's job and the mother's work history. As the data source he uses a sample of college students.

Haller and Hoellinger (1994) contradict the results above. They state that their empirical findings do not support the idea that a country's population will have more egalitarian attitudes on gender roles as its employment rate of women increases. They use Hungary versus the Netherlands as an example. The Netherlands has relatively low levels of female labour participation and fairly egalitarian views on gender norms, while Hungary has the greatest employment rates in their survey data set but the most conventional view on gender norms. According to Haller and Hoellinger (1994), structural changes brought on by industrialization and socio-cultural factors impact gender role attitudes mostly. Molm (1978) adds to this. Molm (1978) uses a Two-Stage Least Squares model on a national data sample from 1970 from the United States. She concludes that there is no association between the respondent's attitude toward gender norms and whether or not the respondent's mother worked. Tallichet and Willits (1986) partly agree with this. They write that a higher form of education had an intergenerational equalizing influence on views on gender norms, but maternal labour supply did not.

All in all, even though several papers argue that there is no evidence of an effect of labour participation by women on their view of gender norms, the majority of the studies show that there does seem to be a correlation between women's labour force participation and a more equal view of gender norms. This seems to have its effect in a direct and indirect way. The direct effect can be seen when adults form a more equal view of gender norms when women have a higher labour participation. The indirect effect can be seen as the change in how children view gender norms when their mothers start working. There is evidence for both effects in the literature. Finally, there is the possibility that the effect works both ways, from employment to a more equal view on gender norms and vice versa. However, the literature suggests that the effect of employment toward a more equal view of gender norms outweighs the effect of a more equal view on gender norms on employment.

One thing should be noted and that is that besides the paper from Boring and Moroni (2023) and Alesina, Giuliano and Nunn (2013), the papers are all fairly outdated. There seem to be no later published, quality papers regarding this topic. Therefore, the results of most papers need to be read with some caution, since it is not entirely clear how applicable they are nowadays. The assumption is that the results are still holding today, since there are also no current papers providing evidence to the contrary.

In this subchapter, it is clear that a lot of the papers are based on individual data instead of national data. This is similar to what I have designed. I use data of the European Value Survey, which is similar to the paper of Boring and Moroni (2023) and gives insight to the effect of female employment on gender role attitudes. I perform a regression independently for both women and men which provides me information about how female employment affects both males and females. This is interesting since Ferber (1982) presents results that conclude that when husbands become accustomed to having wives stay at home, their opinions regarding women in the workforce tend to change to a more traditional view and Tallichet and Willits (1986) and Thornton (1983) find that employment affects the gender role attitudes of females. Furthermore, in line with Thornton (1983) I control for age and educational level too, among other things. All in all, the research design very much resembles the existing literature.

Moreover, Macke, Hudis and Larrick (1978) and Molm (1978) show that reversed causality is not as much of a problem in this part of the study as the previous subchapter. Macke, Hudis and Larrick (1978) write that the effect of female employment on their view on gender norms is dominant. Molm (1978) writes that there only a one-way influence from employment status to opinions about sex roles.

2.3 Hypothesis based on literature

All in all, the literature shows that there is both an effect of subsidizing childcare on female labour participation and of female labour participation on equalizing gender norms. Even though there are questions on how big the effect of subsidizing childcare is on female labour participation due to cultural obstacles and how big the effect is of female labour participation on equalizing gender norms, the common thought seems to be that these effects exist. Therefore, the overall literature leads to the following hypothesis:

‘When childcare is subsidized by the government, this encourages labour force participation of women, which stimulates more equal views on gender norms.’

In other words, subsidizing childcare by the government is expected to make gender norms more equal. The hypothesis can be split up into two hypotheses:

- 1. Subsidized childcare increases female labour participation.*
- 2. An increase in female labour participation creates more equal views on gender norms.*

3. Methodology

3.1 Research Design

To examine what the effect is of subsidizing childcare on gender norms, I test the two hypotheses above. I do this with a quantitative research design based on a fixed effects regression and a logistics regression. The ultimate purpose of the research is to confirm whether there exists a correlation between subsidizing childcare and female labour participation and between female labour participation and the view people have on gender norms. This way I can conclude whether there is or is not a correlation between subsidizing childcare and a more egalitarian view on gender norms.

The reason that I test the indirect effect of subsidizing child care on egalitarian gender role attitudes and not the direct effect has to do with the data. The reason is that the European Values Survey (EVS) data contains no indicator for the amount of subsidizing childcare by the government. This means that it cannot be directly examined what the effect of subsidizing childcare on the view on gender norms is on an individual level. However, there are variables which indicate female labour participation. These are the variables which reflect whether a female respondent herself is employed and whether or not the partner of a male respondent is employed. Subsequently, on a national level there is data on the percentage of female labour participation and the amount of subsidizing of childcare by the government. Therefore, it is possible to regress female labour participation on subsidizing childcare and of gender role attitudes on female labour. Moreover, in the literature and in public speaking, these hypotheses are used to substantiate the effects of subsidizing of childcare. It is therefore not extraordinary to use these hypotheses.

At the same time, using female labour participation as my reference point gives me some additional difficulties. This is because female labour participation is an endogenous variable. This means that the variable is determined by its interactions with other variables in the model. In other words, female labour participation correlates with other variables that are studied in the research. Because this is the case, control variables should be added to single out the specific effect of female labour participation on gender role attitudes and of child care subsidy on female labour participation. I added multiple control variables and I will dive into this problem further in the following subchapters.

3.2 Data

The data which I use in the OLS-regressions finds its origin at two different data sources. The data to test the first hypothesis comes from the OECD data base. This organisation delivers mostly yearly, but also sometimes quarterly or monthly data on all sorts of topics, ranging from agriculture to society to finance. The data with regard to the amount of subsidizing of childcare by the government as well as

the national data on the percentage of female labour participation come from this organisation. The data of the amount of subsidizing or free facilitation of childcare is available from 2000 to 2018 and the data on female labour participation is available from 1990 to 2021. I also use some control variables which find its origin at the OECD database. I use the total government expenditure, the national GDP, the life expectancy, the working age population and the percentage of women parliamentarians.

The second data source from which I draw information is the European Value Survey (EVS). This survey is sent out once every 9 years to a representative group of people from many European countries. It offers perceptions of the thoughts, values, attitudes, and views of people living across Europe on life, family, work, religion, politics, and society. From this survey two questions are used to measure the view on gender norms. These questions contain a statement and ask to what extent the respondent agrees with the statement. The first statement states: 'When a mother works for pay, the children suffer.' and is referred to as 'Children'. The second statement reads: 'A job is alright but what most women really want is a home and children.' and is referred to as 'Home'. To regress the effect of female labour participation on gender role attitudes, I independently regress the agreement to either statement on the female labour participation for both men and women. For women respondents, female labour participation is measured as the employment status the respondent and for male respondents I use the employment status of the partner of the male respondent. There are also control variables drawn from the EVS dataset. These include the age of the respondent, the relationship status of the respondent (single, married, divorced, separated or widowed), how many children the respondent has, the level of income of the respondent (high, middle or low), whether the respondent is religious, the level of education of the respondent (ranging from incomplete elementary to university with a degree), the state of health of the respondent (ranging from very good to very poor), the life satisfaction of the respondent and an indication in how much the respondent feels like they can control the outcomes in their life.

3.3 Underlying model

I will discuss the methodology I use in this study per hypothesis and finally all together with regard to the research question. This way it is possible to give a more detailed overview of the equations used.

3.3.1 Hypothesis 1: Subsidizing childcare and female labour participation

To investigate the correlation between subsidizing childcare and female labour participation I use an OLS-regression including both time and country-fixed effects. In this OLS-regression, I use the amount of government expenditure on childcare and early education as a percentage of the total government expenditure per year as a measurement of the amount of subsidy a government spends on childcare. Specifically, the public expenditure on childcare is measured in US dollars per child for children younger

than five. I use the public expenditure on child care because this data is freely available for a large number of years and, of all the OECD data, comes closest to describing how large a country's childcare subsidy is. I use the public expenditure on childcare as a percentage of the total government spending because a high percentage of the total government spending signals that the government has a high priority for childcare and early education. In countries that have a lower percentage of government spending on child care, the private sector or households themselves are more likely to have a large share in the total funding of childcare.

Fixed effects for both countries and time are included in this study because I make use of panel data. By using country fixed effects, it is possible to account for time-invariant national variances by giving each country its own constant. This is important since there are time-invariant elements that influence female labour participation as well as the public expenditure on childcare and early education. As an illustration, consider how a nation's culture may have a significant impact on the amount of female labour participation and the priorities for public spending. The worry that elements like these could lead to biased estimates of omitted variables is reduced by including country fixed effects. Time-fixed effects are also included in the regression. This will take into account variables that change over time but remain constant for all entities. Thus, any country-independent, time-specific cofounders will be taken into account by the time fixed effects. This could for example be the Euro-crisis if it affected all OECD-countries in the same manner.

To test the first hypothesis, the following equation will be used:

$$FLP_{i,t} = \alpha_i + \beta_t + \gamma PEC_{i,t} + X_{j,t} + \varepsilon_{i,t}$$

In this equation FLP stands for female labour participation. The data on female labour participation is written in percentages, which means that FLP ranges from 0 to 100. Moreover, PEC describes the public expenditures for childcare as a percentage of the total government spending, which also possibly ranges between 0 and 100. $X_{j,t}$ reflects a vector which includes all the control variables, including the log of the national GDP, the life expectancy in years, the working age population as a percentage of the total population and the percentage of women in the national houses of parliament. Furthermore, α captures the country fixed effects and β represents the time fixed effects. Lastly, ε shows the error-term, i denotes the country and t identifies the year.

3.3.2 Hypothesis 2: Female labour participation and gender norms

I test the second hypothesis by performing multiple regressions. Half of these OLS-regressions include time and country-fixed effects and the others include country-specific time trends. I use the time and country fixed effects for the same reasons as why I use them in the regression to test the first

hypothesis. This is to account for time-invariant country specific effects, like culture, and to account for time-varying general shocks. I use the country-specific time trends to account for time-varying shocks between countries, such as political waves like the MeToo movement. These effects cannot be captured by solely using time and country fixed effects but are ruled out when including country-specific time trends in the regression.

In these regressions, I measure the view on gender norms by looking at the agreement of the respondents with two statements of the European Value Survey. These are the statements: 'When a mother works for pay, the children suffer.' and 'A job is alright but what most women really want is a home and children.'. Since I use individual data on gender norms, I also use individual data on female labour participation. I perform the regressions independently for both female and male respondents of the European Value Survey, where I use the employment status of the female respondents and the employment status of the partner of the male respondents as forms of measurement of female labour participation. I perform the regressions also separately for the statements 'Children' and 'Home'. The reason I use the employment status of the partner of the male respondents to measure the effect of female labour participation on the view on gender norms for the male respondents, is because the employment status of male respondents themselves does not give any information on female labour participation. At the same time this means that only males who have a partner are taken into account, which is one of the side effects of this approach. Furthermore, there is no information in the EVS survey on whether the male respondent is straight or not. It could thus be that there are respondents with male partners taken into account. However, the assumption is that those are not many people in this dataset and this therefore will not significantly influence the outcomes of the regressions.

In addition to the fixed effects, I added some control variables. I do this because the data on gender role attitudes is based on individual data. Therefore, control variables are added to strengthen the internal validity of the regressions. Control variables improve the internal validity of a study, because they reduce the impact of confounding and other related variables. The control variables which are added in this study are age, relationship status, the number of children of the respondent, level of income, the level of education of the respondent, whether the respondent is religious, state of health, life satisfaction and lastly the amount of control the respondent has on outcomes in his/her life.

To test the second hypothesis with fixed effects, I use the following equation:

$$GN_{i,j,t} = \alpha_i + \beta_t + \gamma FMP_{j,t} + X_{j,t} + \varepsilon_{i,j,t}$$

In this equation GN stands for the view on gender norms of the respondent. This indicates either the agreement or disagreement with the statement 'Children' or 'Home'. In addition, FLP represents the

female labour participation. As discussed above, this is either the employment status of the female respondent or the employment status of the partner of the male respondent. Moreover, α and β capture respectively the country and time fixed effects. Furthermore, X is a vector which includes all the control variables. Lastly, ε shows the error term, i identifies the country, j indicates the individual and t denotes the year.

For the regression which includes a country-specific timeline trend instead of country and time fixed effects I use the following equation:

$$GN_{i,j,t} = \delta_{i,t} + \gamma FMP_{j,t} + X_{j,t} + \varepsilon_{i,j,t}$$

This equation is exactly the same as the equation above, except for α_i & β_t which are missing and $\delta_{i,t}$ which denotes the country specific time trend.

3.3.3 Research question: Subsidizing childcare and gender norms

The research question examines whether subsidizing or free facilitation of childcare has a positive/equalizing effect on gender role attitudes. The answer to the research question depends on both the hypotheses. In order to establish a positive effect as is described in the literature, there should be a positive correlation between subsidizing childcare and female employment. Furthermore, there should be a positive correlation between egalitarian gender role attitudes and female labour participation. It should be noted that in this study an equalizing view on gender norms is measured as not agreeing with the two statements discussed above ('Children' and 'Home'). Therefore, there should be a negative correlation between the agreement with one or both of the statements and the female labour participation (measured by employment status). Concluding, when the results follow the literature, there should be a general negative. There is another way in which a general negative can arise. It could be that the correlation between public expenditure on childcare and the female labour participation is negative and the correlation between agreement with the statements about gender norms and female employment is positive. This would however be totally contradictory to the literature. Finally, when either one of the hypotheses shows an insignificant result, no significant effect can be established with regard to the general hypothesis. This would mean that the effect of subsidizing or free facilitation of childcare on gender norms is unsure or non-existent.

However, even if there are two positive correlations it is debatable if I can establish a causal effect of subsidizing child care on gender role attitudes. This is because female labour participation is an endogenous variable. This means that it is influenced by other variables. These other variables can be economic wellbeing, cultural differences or how healthy people are in a certain country. To control for these effects, I have added control variables in the regressions used to test the hypotheses. But even

though I have added controls, there is a real possibility that I will not be able to capture the precise causal effect of subsidizing childcare on gender role attitudes. I found the control variables at the OECD Database and at the codebook of the European Value Survey. It is very likely that there are variables which were not accessible in the databases, but do influence the outcome of the regression. In some cases, these missing variables matter more, than in others. Variables that should be added as a control are variables which affect both the variables of interest (X and Y) or block other back-door paths from X to Y. To illustrate this, I have added the variable education in the second regression. Higher education results in a higher chance to get a job and it could be the case that people of a higher education hold a different opinion on gender roles than people with a lower education. This is an example of a good control variable. Where the importance lies in the fact that the variable influences both X and Y.

There are probably many variables which only affect public spending on childcare, female labour participation or gender role attitudes. These are neutral controls and therefore do not form a problem with regard to a selection bias. Finally, there are also bad controls. The most relevant type of bad controls for my study are controls which overcontrol for selection bias. These are variables that are descendants of the treatment along paths to the outcome. In this study these can be variables which are affected by female employment, for example if a respondent receives unemployment benefits or not. If a female respondent works, she does not receive unemployment benefits. By controlling for unemployment benefits, I would technically two times control for female employment and thus overcontrol. Another form of a bad control is when the control is influenced by X and/or by Y but does not influence either X or Y. Both these types of control variable actually induce selection bias instead of solving it. Concluding, adding control variables is good, but every control variable must be looked at closely to decide if it should be added or not.

Besides controlling for possible selection bias, there is also another big issue in this study. This is the problem of reversed causality. As shown in the discussed literature in chapter 2, there are researchers which conclude that subsidizing childcare influences female employment and there are researchers which discuss how female employment influences public expenditure on childcare. This is a problem because when it is unclear in what direction the effect works, only a correlation can be established and not a causal effect. The same happens in context of the correlation between female employment and gender role attitudes. However, with this correlation, the problem seems less severe. This is because there are two papers which show that the effect of female employment on gender role attitudes dominates or is the only existing effect (Macke, Hudis and Larrick, 1978; Molm, 1978). This diminishes reversed causality. The problem of reversed causality is discussed in detail in chapter 6.

3.4 Descriptive Statistics

Table 1 reflects information about the variables used in the first regression. The table indicates an average percentage of public expenditure on child care in relation to the total government expenditure of 23.16%, with a minimum of 0% and a maximum of 57.61%. This means that there are big differences of involvement of the government in childcare between countries. Moreover, the average female labour participation is 63.61%, with a minimum of 25.20% and a maximum of 84.00%. Again, there is a big difference. Furthermore, the table shows an average of 2.92e+10 of national GDP in dollars and an average of 78.72 years of life expectancy of citizens. Finally, the working age population is on average 66.69% of the population and 25.83% of the people in parliament is on average female.

Table 1: Descriptive Statistics of observations used to measure the effect of public expenditure on childcare on female labour participation

	Count	Mean	Std. Dev.	min	max
Public expenditure on child care	385	23.159	10.864	0.000	57.609
Female labour participation	646	63.613	10.401	25.200	84.000
GDP	648	2.92e+10	1.72e+10	1.45e+8	1.15e+11
Life expectancy	646	78.730	3.083	70.200	84.200
Working age population	648	66.685	2.374	59.952	73.418
Female parliamentarians	143	25.832	10.623	4.200	47.600

Notes: In this table public expenditure on child care denotes the percentage of public expenditures which is dedicated to childcare and early education per child for children between the age of 0 and 5. Female labour participation represents the national percentage of female labour participation and can thus possibly range from 0 to 100. GDP denotes the gross domestic product in US dollars per capita. Life expectancy is defined as how long a newborn can expect to live, if current death rates do not change. The working age population measures the share of people of the population between 15 and 64, who are able to work. Finally, Female parliamentarians represents the percentage of women in the national lower or single houses of parliament.

Table 2 shows an overview of the demographic statistics of the EVS survey respondents. The table gives an overview separately for female and male respondents and includes general information like age, number of children, marital status, level of school and health. Of all the categorical variables in the table, the first variable will be used as a reference variable in the main regression. The table shows on average very similar results for female and male respondents except for the variables 'Religious'. The variable 'Religious' shows that 62% of the female respondents is religious and only 49% of the male respondents. This is quite a big difference.

Besides general information, the table gives information about the percentage of respondents who have agreed with the statements 'Children' and 'Home'. From the female respondents 44% agreed with the statement 'Children' and 48% of the male respondents did. With regard to the statement 'Home', 46% of the female respondents agreed and 47% of the male respondents. This is very close to one another.

Lastly, Table 2 gives information about the female labour participation in this pool of respondents. Of the female respondents 60% is employed. Of all the male respondents, 42% has a partner who is employed. The question about whether the partner of a respondent is employed was only added in the European Value Survey of 2008 and 2017 which results in a decrease of the number of observations of 'Employment' for male respondents.

Table 2. Demographic Statistics of observations used to measure effect of female labour participation on gender role attitudes

	Female respondents					Male respondents				
	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max
Children	58862	0.437	0.496	0	1	51072	0.482	0.500	0	1
Home	58862	0.456	0.498	0	1	51072	0.468	0.499	0	1
Employment	58862	0.600	0.490	0	1	25026	0.424	0.494	0	1
Age	58862	40.822	13.2	15	64	51072	40.397	13.339	15	64
Religious	58862	0.619	0.486	0	1	51072	0.493	0.500	0	1
Number of children	58398	1.588	1.344	0	8	50593	1.374	1.363	0	8
Marital status										
Married	56382	0.581	0.493	0	1	48734	0.570	0.495	0	1
Divorced	56382	0.091	0.288	0	1	48734	0.063	0.243	0	1
Separated	56382	0.020	0.140	0	1	48734	0.015	0.123	0	1
Widowed	56382	0.048	0.214	0	1	48734	0.013	0.112	0	1
Single	56382	0.260	0.438	0	1	48734	0.339	0.473	0	1
Level of school										
Incomplete elementary	43570	0.023	0.149	0	1	36955	0.017	0.129	0	1
Completed elementary	43570	0.106	0.308	0	1	36955	0.096	0.294	0	1

Incomplete secondary (vocational)	43570	0.142	0.349	0	1	36955	0.158	0.365	0	1
Complete secondary (vocational)	43570	0.099	0.298	0	1	36955	0.131	0.337	0	1
Incomplete secondary (university prep)	43570	0.103	0.305	0	1	36955	0.111	0.315	0	1
Complete secondary (university prep)	43570	0.241	0.428	0	1	36955	0.230	0.421	0	1
University without degree	43570	0.171	0.377	0	1	36955	0.140	0.347	0	1
University with degree	43570	0.115	0.319	0	1	36955	0.118	0.322	0	1
Income										
Low income	47986	0.286	0.452	0	1	42622	0.242	0.428	0	1
Medium income	47986	0.383	0.486	0	1	42622	0.383	0.486	0	1
High income	47986	0.330	0.470	0	1	42622	0.375	0.484	0	1
Health										
Very good health	44936	0.248	0.432	0	1	38708	0.271	0.445	0	1
Good health	44936	0.428	0.495	0	1	38708	0.445	0.497	0	1
Fair health	44936	0.255	0.436	0	1	38708	0.227	0.419	0	1
Poor health	44936	0.057	0.232	0	1	38708	0.047	0.212	0	1
Very poor health	44936	0.012	0.108	0	1	38708	0.009	0.096	0	1
Life satisfaction	58548	7.298	2.069	1	10	50791	7.217	2.073	1	10
Control	57876	6.911	2.103	1	10	50357	6.995	2.090	1	10

Notes: The following explanations can be associated with the terminology. ‘Children’ reflects agreement or disagreement with the statement “When a mother works for pay, the children suffer.”. ‘Home’ reflects agreement or disagreement with the statement “A job is alright, but what most women really want is a home and children.”. ‘Employment’ denotes whether a female respondent is employed or not and whether a male respondent has a partner who is employed or not. ‘Age’ shows the respondents age and ‘Religious’ shows whether the respondent is religious or not. Furthermore ‘Number of children’ indicates the number of children

of the respondent where 8 denotes 8 children or more. The categorical variable 'Marital status' reflects whether a respondent is single, married, divorced, separated or widowed. The category married will be used in the regression as a reference point. Subsequently, the variable 'Level of school' shows 8 levels of education ranging from incomplete elementary school to university with a degree. For this variable the category incomplete elementary school will be used as a reference. Further is the categorical variable 'Income', which shows whether the respondents have a low, medium or high income. The low income variable will be used as a reference. 'Health' reflects the health status of the respondent which ranges from very good to very poor. The very good health status will be used as a reference. Moreover, 'Life satisfaction' indicates how satisfied the respondent is with his/her life on a scale from 1 to 10. Finally, 'Control' indicates how much freedom of choice and control the respondent feels he/she has over the way his/her life turns out on a scale from 1 to 10.

3.5 Correlation Graphs

In this chapter three correlation graphs with best fitted values lines included will be discussed. These correlation graphs show the correlation between the percentage of female labour participation and subsidizing or free facilitation of childcare in US dollars and between the average view on gender norms and the amount of female labour participation. The graphs will give a first indication on whether or not the hypotheses and therefore the general hypothesis will hold.

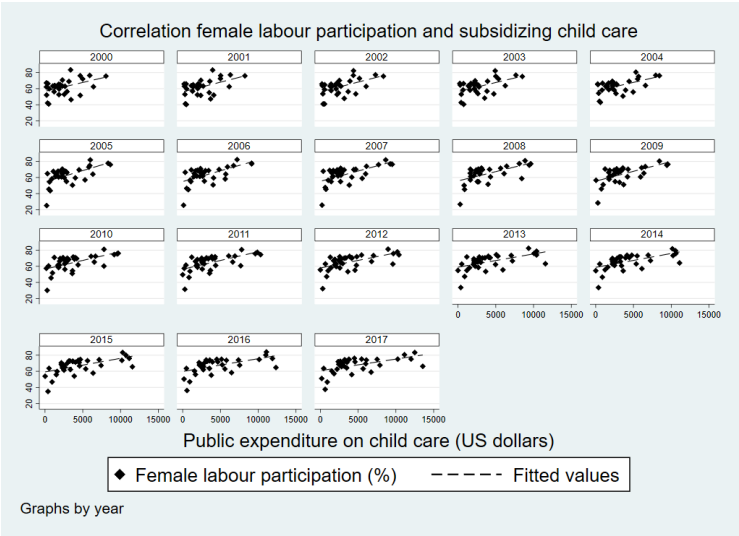


Figure 1: Correlation graph between female labour participation in percentages and the public expenditure on childcare and early education (for children between 0 and 5) in US dollars

Figure 1 reflects the correlation between the percentage of female labour participation and the amount of public expenditure on childcare in US dollars on children between the 0 and 5 years old per child. The figure shows this correlation and best fitted value line per year from the year 2000 to 2017. For all the years, the figure shows an increasing best fitted values line, which indicates that when public expenditure on childcare goes up, so does the percentage of female labour participation. What must be noted is that for every year the number of observations is significantly higher at the left side of the figure than at the right side of the figure. Also, the variance is bigger for all the years on the left side of

the figure, than on the right side of the figure. But since there are a lot of observations around the best fitted values line, the best fitted values line seems to be trustworthy. In conclusion, Figure 1 signals a positive correlation between the percentage of female labour participation and the number of US dollars publicly spend on childcare. This is in line with the literature and the first hypothesis.

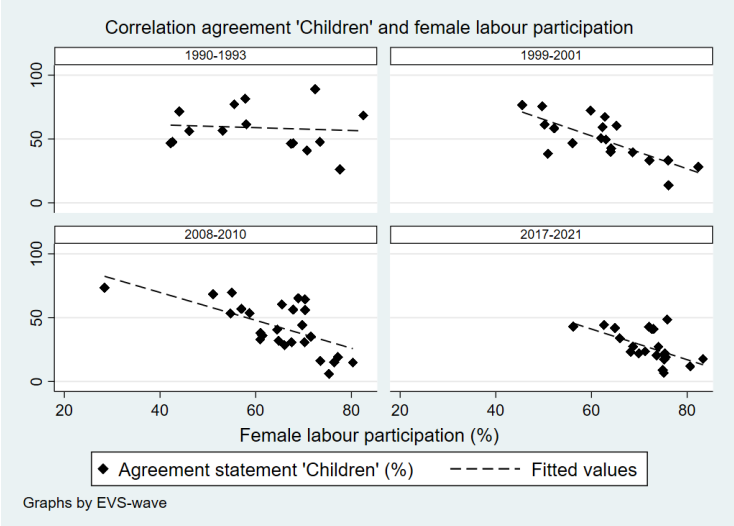


Figure 2: Correlation graph between the percentages of respondents who agree or strongly agree with the statement 'When a mother works for pay, the children suffer.' and female labour participation in percentages.

Figure 2 gives the correlation between the percentage of respondents per country who agree or strongly agree with the statement 'When a mother works for pay, the children suffer.' and the national percentage of female labour participation. The figure shows 4 scatterplots with best fitted values lines, where every scatterplot reflects one EVS-wave and every observation reflects a country. For the EVS-waves of 1999, 2008 and 2017, the best fitted values line shows a negative correlation between the percentage of people agreeing with the statement 'Children' and the percentage of female labour participation. There are quite some differences between countries, but the best fitted values line seems credible since the observations located at the right side of the spectrum are often lower placed than the observations on the left side of the spectrum. This indicates that in countries where more women work, there is a more equal view on gender norms on average. This supports the literature and the second hypothesis. The only EVS-wave which is not in line with this conclusion is de wave of 1990. For this wave, the best fitted values line is horizontal or maybe very little decreasing, but definitely not as declining as the other waves. One reason for this could be that there are less observations for this wave and that this influences the results. It could also be that since it is the earliest EVS-wave, people just had more traditional thoughts in general.

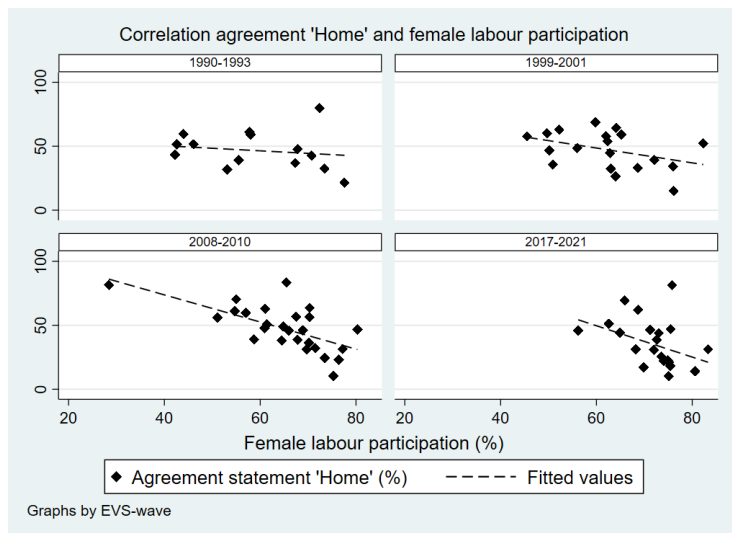


Figure 3: Correlation graph between the percentages of respondents who agree or strongly agree with the statement 'A job is alright, but what most women really want is a home and children.' and female labour participation in percentages.

Figure 3 displays the correlation between the percentage of respondents per country in agreement with the statement 'A job is alright but what most women really want is a home and children.' and the national percentage of female labour participation. Again, the figure shows 4 scatterplots with best fitted values lines, where every scatterplot reflects one EVS-wave and every observation reflects a country. The figure closely resembles Figure 2. Again, the best fitted values lines of the EVS-waves 1999, 2008 and 2017 is clearly declining and for the EVS-wave of 1990 there is a very small decline. Moreover, the observations do not show a lot of very clear outliers which seems to influence the best fitted values line badly, however there are of course quite some differences between countries. All in all, the best fitted values lines seem to support the second hypothesis and in line with that the regarding literature. The same reasons for a difference between the 1990 EVS-wave and the other EVS-waves do also apply in this figure.

All in all, the correlation graphs and best fitted values lines seem to be trustworthy. Moreover, they confirm that the hypotheses might hold, which gives a preview for the benchmark results. Notice however that in these graphs I take the average agreement per country as an indicator together with the national percentage of female labour participation. To test the second hypothesis, I use individual data. This means that there could be different outcomes, since I take into account individual factors in the regressions and these are not included here.

4. Descriptive Evidence

In this chapter, I discuss the timeline trends of the main variables. The main variables are the beliefs in gender norms, public expenditure on childcare and the amount of female labour participation. They are used to measure the effect of subsidizing childcare on the views on gender norms.

4.1 Measures of beliefs in gender norms

In this study I use the percentage of agreement with two statements of the EVS survey to measure gender role attitudes. The first statement reads: "When a mother works for pay, the children suffer." and is referred to as 'Children'. "A job is alright, but what most women really want is a home and children." is the second statement and is mentioned as 'Home'. Both statements give the idea that a women's decision to work has negative consequences on her family life. To measure the gender role attitudes, I created a binary variable for each statement. The binary variable equals one if the respondent answered either 'agree' or 'strongly agree' to the statement and zero if the respondent filled in either 'disagree' or 'strongly disagree'. Figure 4 and 5 show the timeline trend of the variables.

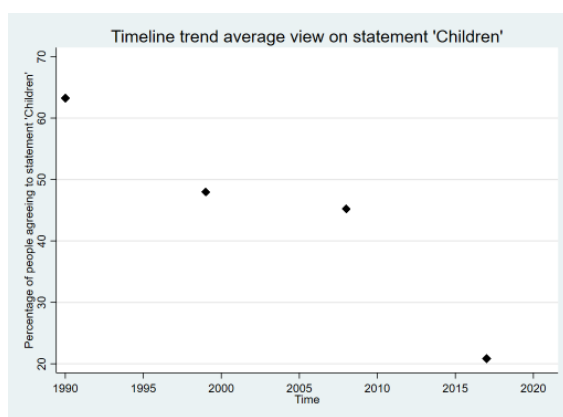


Figure 4: Timeline trend of the average view on the statement 'Children'

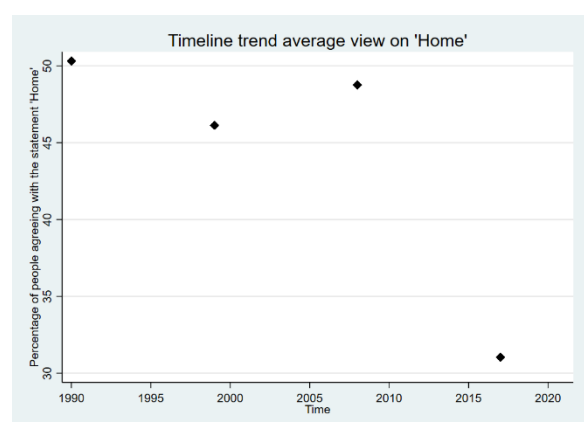


Figure 5: Timeline trend of the average view on the statement 'Home'

Figure 4 shows the evolution of how many people agree with the statement that children suffer with pain when a mother works to earn money. The figure shows that there is a decreasing trend of people agreeing with the statement from 63% to 21%. Figure 5 reveals the timeline trend of people agreeing or strongly agreeing to the statement that a job is all right, but what women really want is to be at home with the children. Figure 5 presents also an on average declining trend (from 51% to 32%), but this trend is less clear. It becomes evident from the figure that the amount of people agreeing with the statement first declines, then rises a bit again and then sharply decreases.

It is interesting to see that the agreement with both statements decreases. At the same time, the decline of the percentage of agreement with the statement 'Children' is much steeper than the decline of the percentage of agreement with the statement 'Home'. Also, the fact that the percentage of agreement with the statement 'Home' increases in 2008 is surprising. All in all, the general decline supports figures 2 and 3 and confirms the presence of a negative correlation between female labour participation and traditional gender role attitudes.

4.2 Measures of subsidizing childcare

To measure the extent to which a country subsidizes childcare, I use a variable which indicates the public expenditure on childcare and early education. The idea is that when a country spends a lot of money on childcare, it is likely that the parents pay less on childcare and the childcare is therefore more subsidized by the government. When a country starts to spend significantly more on childcare over the years, this would then reflect the country taking action to make childcare less expensive for the parents through subsidies of childcare.

In the sixth and seventh figure, the timeline trend of public expenditure on childcare in US dollars is given per country and as an average of all countries. Figure 6 is shown in the appendix and reflects the timeline trend of public expenditure on childcare in US dollars per child per country. It can be seen that many countries show a very small but at the same time gradual increase or remain stable. The countries which show a small increase are Austria, Belgium, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Japan, Latvia, Lithuania, New Zealand and the Slovak Republic. The countries that remain stable are Australia, Colombia, Costa Rica, Czech Republic, Israel, Italy, Mexico, Poland, Portugal, Slovenia, Spain, Turkey, the United Kingdom and the United States. Lastly, there are some countries which show a significant increase in public expenditure on childcare. These countries are Iceland, Korea, Luxembourg, the Netherlands, Norway and Sweden.

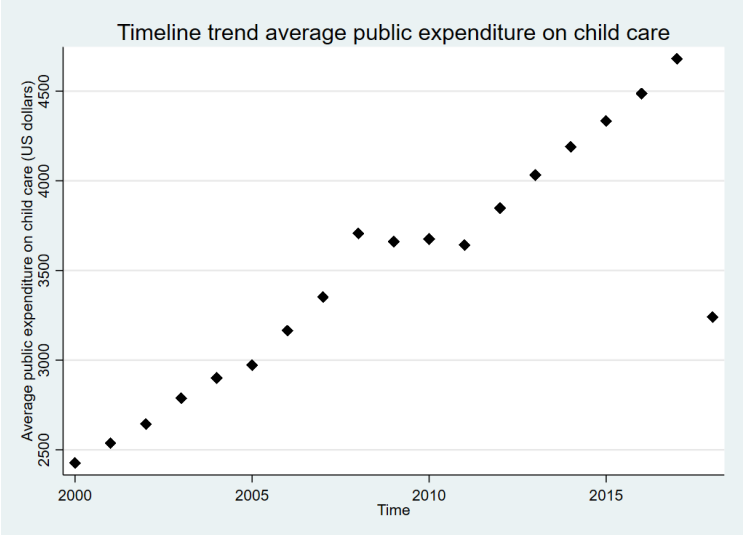


Figure 7: Timeline trend of the average public expenditure on childcare and early education (0 to 5 years) in US dollars

In Figure 7, the timeline trend of the average public expenditure on childcare is given. It shows that there has been a steady increase from 2000 to 2017, where the average public expenditure has risen from circa 2400 US dollars to 4700 US dollars per child. It is remarkable that in the year 2018, the average expenditure on childcare is considerably lower. In this year, the average public expenditure on childcare is 3250 US dollars per child. This is caused by there being a lot of missing observations in

the year 2018, which brings the overall average down. This year does not follow the overall trend. Therefore, it is seen as an outlier and not taken into account in the regression.

What is important to notice is that even though many countries independently show a very small increase or keep steady over time, the average public expenditure on child care does steadily increase. This is possibly caused by the few countries who do experience bigger increases of child care expenditures. Moreover, the public expenditure on child care did not grow on average between 2008 and 2011 which portrays the years of the great recession.

4.3 Measures of female labour participation

To measure female labour participation, I use two types of data. To test the first hypothesis I use national, annual data from the OECD database, comparable to the public expenditures on childcare. Figure 8 and 9 show data of the female labour participation in percentages for the years 2000 to 2018.

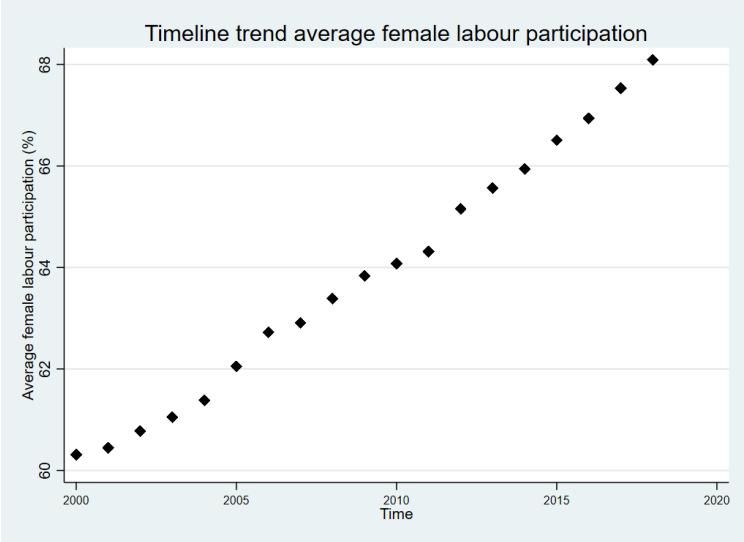


Figure 9: Timeline trend of the average female labour participation in percentages (countries and years used in the first regression)

Figure 8 is the first figure which gives a timeline trend on female labour participation and is shown in the appendix. It shows the timeline trend of female labour participation in percentage per country from the year 2000 to 2018. The figure indicates that many countries show a small and gradual increase in female labour participation. The countries which show a small increase are Australia, Austria, Belgium, Estonia, Germany, Greece, Ireland, Israel, Italy, Japan, Korea, Lithuania, Mexico, the Netherlands, New Zealand, Portugal, Slovenia and Turkey. On the other hand, there are also many countries that seem stable. The countries that remain stable are Colombia, Costa Rica, Czech Republic, Denmark, Finland, France, Iceland, Norway, Poland, Slovak Republic, Sweden, the United Kingdom and the United States. Lastly, there are some countries which show a significant increase in female labour participation. These countries are Chile, Hungary, Latvia, Luxembourg and Spain. Figure 9 reflects the

average of female labour participation of the countries together in percentages. It indicates that there has been a steady increase of the average female labour participation of 60.5% in 2000 to 68% in 2018.

Figure 8 and 9 have a structure which is very comparable to Figure 6 and 7. Again almost all of the countries on itself do not show a big increase in female labour participation, but the average female labour participation does show a steady increase. Further, Figure 9 shows a little effect of the great recession for the observations of 2009 to 2011. Together with Figure 6 and 7 these figures confirm Figure 1, which shows a positive correlation between public expenditures on childcare and female labour participation.

To test the second hypothesis, I use variables which indicate whether a female respondent works and whether a male respondent has a partner who works. To measure this, I created two dummy variables. Firstly, I created a binary variable to indicate whether a female respondent works. This binary variable equals one if the respondent is female and she either works full time (30 hours a week or more), parttime (less than 30 hours a week) or is self-employed. The binary variable is equal to zero otherwise. Secondly, I created a binary variable to indicate whether the partner of a male respondent works. This binary variable is equal to 1 if the respondent is male and the partner of the male respondent works fulltime (30 hours a week or more), parttime (less than 30 hours a week) or is self-employed. The binary variable equals zero when this is not the case. There are also students, retired people and people in obligatory military service in this dataset. These observations are not taken into account in either of the regressions since it is the goal to filter for individuals who have a choice at the time of the survey between working and staying at home and see how this correlates with their view on gender norms. Including students and retired people in the regression could skew the results since these people do not work at the time but maybe have worked or will work. Taking them into account could bias the results, because they are marked as people who do not work even though they might share similar ideas to people who do work (due to their past or future). To control for this bias, the regressions only look at the people who are currently available to work. For the same reason disabled people that are not able to work due to their disability are taken out of the dataset.

In figure 10 the timeline trend of the average employment status of female respondents of the EVS survey is projected. It reflects a V-shape, where the average employment of female respondents equals 58% in 1990, 56% in 1999, 62% in 2008 and 69% in 2017. This reflects an overall similar pattern to the national data on average female employment which shows a linear upward trend. The only remarkable observation is that the percentage of female respondents who is employed is lower in 1999 than in 1990. In Figure 11 the timeline trend of the average amount of employed partners of the male respondents of the EVS survey is plotted. This timeline trend shows an average amount of employed

partners of 41% in 2008 and 49% in 2017. This is a slightly lower percentage compared to the percentage of female respondents who are employed, but also seems realistic. It shows an upward trend.

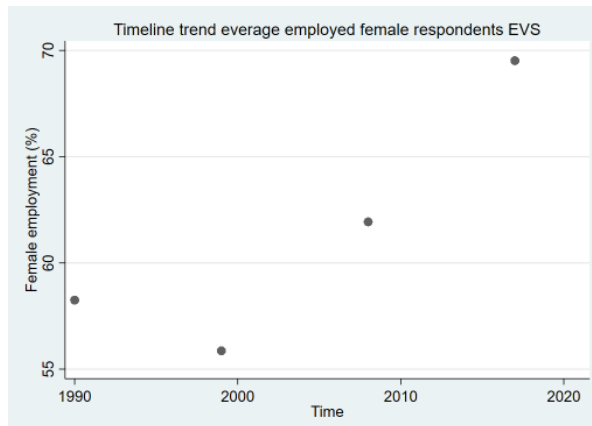


Figure 10: Timeline trend of the amount of female respondents of the EVS that are employed

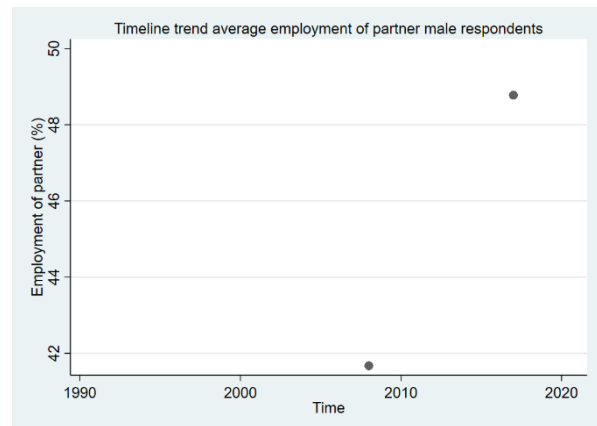


Figure 11: Timeline trend of the amount of partners of male respondents of the EVS that are employed

The graphs show a few things. Firstly, the graphs show that the question whether an EVS respondent has a partner who works is only asked in the last two EVS rounds. That is why there are only two observations in Figure 11. Secondly, it shows that the percentage of female respondents who works is a lot higher than the percentage of male respondents who has a partner that works. This could indicate that women who have a partner are less likely to work. Thirdly, the graphs both show an overall increase in female labour participation over the years, which is in line with the national female labour participation percentages. Together with the declining agreement with the statements 'Children' and 'Home', these graphs support the literature, hypotheses and the correlation graphs.

5. Benchmark results

5.1 Results of subsidizing childcare on female labour participation

Table 3 reflects the benchmark results of the two-way fixed effects regression of female labour participation on public expenses on childcare and early childhood education as a percentage of the total government expenditures. The table has three columns where the first column shows a simple OLS-regression, the second column adds control variables and both country and time fixed effects and the third column adds in addition the control variable of the percentage of female parliamentarians. The control variable which denotes the percentage of female parliamentarians is added separately in addition to the other control variables since it heavily decreases the number of observations (from 385 to 108). This affects the significance of the coefficient of public expenditures on child care and early education and in general heavily affects the outcomes.

Table 3: OLS-regression results on the correlation between female labour participation and public expenditure on childcare

	(1) Female labour participation	(2) Female labour participation	(3) Female labour participation
Percentage PE	0.135*** (0.024)	0.032** (0.016)	0.069* (0.038)
Log(GDP)		-0.015 (0.085)	0.175 (0.205)
Life expectancy		0.765*** (0.145)	0.802*** (0.297)
Working age population		-0.031 (0.090)	-0.834*** (0.192)
Percentage female parliamentarians			0.071 (0.050)
Country fixed effects	No	Yes	Yes
Time fixed effects	No	Yes	Yes
Constant	62.190*** (1.476)	5.412 (13.270)	49.380* (26.280)
Observations	385	385	108
R-squared		0.632	0.714
Number of id	36	36	36

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The table shows that for all three columns there is a positive and statistically significant regression coefficient. For the simple OLS-regression this coefficient reflects 0.135, for the second column the coefficient reflects 0.032 and for the third column the coefficient equals 0.069. Furthermore, the control variables show that life expectancy has a big positive effect on the female labour participation with both the second and third regression. The working age population becomes significant and highly negative when the regression controls for female parliamentarians. All in all, the results support the hypothesis that subsidizing child care positively affects the female labour participation.

5.2 Results of employment of female respondents on gender norms

Table 4 and 5 reflect the benchmark results of the OLS-regressions on the effect of female labour participation on the view on gender norms. Table 4 reflects the results for female respondents and Table 5 reflects the results for male respondents.

Table 4 shows regression coefficients for all the columns which are negative and highly significant. The first three columns regard the statement 'Children' and the last three columns regard the statement

'Home'. The first and fourth column show an OLS-regression without any added control variables or fixed effects and show statistically significant coefficients of -0.449 and -0.433 respectively. When control variables and fixed effects are added the size of the coefficients shrinks to -0.191 with regard to the statement 'Children' and -0.176 with regard to the statement 'Home'. This is twice as small as before. The third and six column which show the same regression but with country-specific time trends instead of fixed effects. The results are very comparable to the two-way fixed effects regressions and reflect a coefficient of -0.196 for the statement 'Children' and -0.177 for the statement 'Home'.

In addition, a lot of the control variables also show statistically significant effects. With regard to agreement with the statement 'Children', the results show that the having a higher number of children, being religious, and having a worse health have a positive effect on the chance to agree with the statement 'Children'. Being single instead of married, a higher life satisfaction, feeling like having control over one's life, a higher income and having gone to university all have a negative effect on the chance to agreeing with the statement 'Children'. Lastly, the column shows a statistically significant time trend. For the statement 'Home' the variables 'Age', 'Divorced', 'Separated', 'Single', 'Control', 'Medium income', 'High income' and all education variables up from 'Complete secondary (university prep)' show a statistically significant negative correlation with agreement to the statement. On the other hand, do the number of children, being religious, having a fair or poor health and the completion of elementary school solely have a significant positive effect on the chance to agree with the statement 'Home'. Finally, for the statement 'Home' there is a significant negative time trend.

Table 4: OLS-regression results on the effect of the employment of female respondents of the EVS survey on their view on gender norms

	(1) 'Children'	(2) 'Children'	(3) 'Children'	(4) 'Home'	(5) 'Home'	(6) 'Home'
Employment	-0.449*** (0.017)	-0.191*** (0.036)	-0.196*** (0.036)	-0.433*** (0.017)	-0.176*** (0.035)	-0.177*** (0.036)
Age		-0.001 (0.002)	-0.001 (0.002)		-0.008*** (0.002)	-0.008*** (0.002)
Divorced		-0.041 (0.053)	-0.039 (0.053)		-0.186*** (0.052)	-0.193*** (0.053)
Separated		-0.075 (0.108)	-0.068 (0.109)		-0.318*** (0.104)	-0.323*** (0.105)
Widowed		-0.001 (0.077)	-0.003 (0.078)		0.036 (0.077)	0.038 (0.077)
Single		-0.232*** (0.050)	-0.231*** (0.050)		-0.333*** (0.049)	-0.327*** (0.049)
Number of children		0.057*** (0.015)	0.062*** (0.016)		0.093*** (0.015)	0.097*** (0.015)
Religious		0.412***	0.425***		0.560***	0.558***

Life satisfaction		(0.035)	(0.036)		(0.035)	(0.035)
		-0.055***	-0.053***		-0.002	0.001
		(0.009)	(0.009)		(0.010)	(0.010)
Control		-0.031***	-0.028***		-0.029***	-0.029***
		(0.008)	(0.009)		(0.009)	(0.009)
Medium income		-0.102**	-0.107**		-0.141***	-0.154***
		(0.041)	(0.042)		(0.041)	(0.041)
High income		-0.199***	-0.203***		-0.317***	-0.319***
		(0.046)	(0.046)		(0.046)	(0.046)
Good health		0.070*	0.066		0.029	0.035
		(0.042)	(0.042)		(0.040)	(0.041)
Fair health		0.249***	0.252***		0.100**	0.120**
		(0.051)	(0.051)		(0.050)	(0.050)
Poor health		0.444***	0.451***		0.226***	0.242***
		(0.079)	(0.079)		(0.080)	(0.080)
Very poor health		0.349**	0.364**		0.003	0.039
		(0.162)	(0.165)		(0.155)	(0.155)
Completed elementary		0.169	0.169		0.314*	0.369**
		(0.143)	(0.144)		(0.165)	(0.166)
Incomplete secondary (vocational)		0.144	0.166		0.0263	0.104
		(0.140)	(0.142)		(0.158)	(0.159)
Complete secondary (vocational)		0.123	0.128		-0.262	-0.170
		(0.146)	(0.147)		(0.163)	(0.163)
Incomplete secondary (university prep)		-0.145	-0.112		-0.233	-0.182
		(0.148)	(0.151)		(0.165)	(0.167)
Complete secondary (university prep)		-0.191	-0.175		-0.430***	-0.376**
		(0.141)	(0.142)		(0.158)	(0.159)
University without degree		-0.401***	-0.404***		-0.720***	-0.655***
		(0.143)	(0.145)		(0.160)	(0.161)
University with degree		-0.644***	-0.606***		-1.017***	-0.960***
		(0.149)	(0.150)		(0.164)	(0.165)
Year			-0.053***			-0.033**
			(0.012)			(0.013)
Time fixed effects	No	Yes	No	No	Yes	No
Country fixed effects	No	Yes	No	No	Yes	No
Country-specific time trend	No	No	Yes	No	No	Yes
Constant	0.012	0.854***	106.700***	0.081***	0.269	66.120**
	(0.013)	(0.194)	(24.980)	(0.013)	(0.207)	(26.490)
Observations	58,862	22,674	22,674	58,862	22,674	22,674

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

In conclusion, there are a lot of variables influencing the chance that a female respondent agrees with one of the statements on gender norms which indicate a traditional view on gender norms. According to the results a female respondent is less likely to have a traditional view on gender norms if she works, is younger, single, separated or divorced, has less or no children, is not religious, has a high income, is healthy and feels like she has a lot of control over the outcomes of events happening in her life. Lastly, women who have been interviewed in earlier EVS waves are in general more likely to have a more traditional view on gender norms.

5.3 Results of employment of partner of male respondents on gender norms

Table 5 shows comparable regression coefficients for both the statement ‘Children’ and ‘Home’ which are again negative and highly significant. Specifically, the effect of the employment of the partner of the male respondent on the chance for him to agree with the statement ‘Children’ reflects -0.443 and -0.357 for the statement ‘Home’, when there are no control variables or fixed effects added. When control variables and fixed effects are added, these coefficients turn into -0.278 and -0.231 respectively and when a country-specific time trend is added instead of fixed effects together with control variables the coefficients indicate -0.282 for the statement ‘Children’ and -0.232 for the statement ‘Home’.

Table 5: OLS-regression results on the effect of the employment of the partner of male respondents of the EVS survey on their view on gender norms

	(1) ‘Children’	(2) ‘Children’	(3) ‘Children’	(4) ‘Home’	(5) ‘Home’	(6) ‘Home’
Employment partner	-0.443*** (0.027)	-0.278*** (0.043)	-0.282*** (0.044)	-0.357*** (0.026)	-0.231*** (0.042)	-0.232*** (0.043)
Age		0.009*** (0.002)	0.010*** (0.002)		0.005*** (0.002)	0.006*** (0.002)
Divorced		-0.162** (0.067)	-0.170** (0.067)		-0.202*** (0.066)	-0.214*** (0.066)
Separated		-0.118 (0.120)	-0.110 (0.122)		-0.289** (0.120)	-0.289** (0.121)
Widowed		-0.209 (0.150)	-0.216 (0.151)		-0.228 (0.151)	-0.211 (0.152)
Single		-0.155*** (0.056)	-0.164*** (0.057)		-0.206*** (0.056)	-0.211*** (0.056)
Number of children		0.040** (0.018)	0.041** (0.018)		0.049*** (0.017)	0.048*** (0.018)
Religious		0.428*** (0.036)	0.433*** (0.036)		0.498*** (0.035)	0.501*** (0.035)
Life satisfaction		-0.034*** (0.010)	-0.033*** (0.010)		-0.008 (0.010)	-0.006 (0.010)
Control		-0.033*** (0.009)	-0.030*** (0.009)		0.008 (0.009)	0.009 (0.009)
Medium income		-0.041	-0.053		-0.123***	-0.140***

		(0.045)	(0.046)		(0.045)	(0.045)
High income		-0.174***	-0.194***		-0.276***	-0.297***
		(0.050)	(0.050)		(0.049)	(0.049)
Good health		0.047	0.048		0.010	0.013
		(0.042)	(0.042)		(0.041)	(0.042)
Fair health		0.001	0.004		-0.021	-0.014
		(0.054)	(0.054)		(0.053)	(0.054)
Poor health		0.042	0.062		-0.135	-0.130
		(0.087)	(0.088)		(0.088)	(0.088)
Very poor health		0.235	0.232		0.398**	0.401**
		(0.187)	(0.187)		(0.183)	(0.186)
Completed elementary		-0.093	-0.0556		-0.231	-0.138
		(0.208)	(0.209)		(0.220)	(0.220)
Incomplete secondary (vocational)		-0.126	-0.0769		-0.383*	-0.250
		(0.201)	(0.202)		(0.211)	(0.212)
Complete secondary (vocational)		-0.235	-0.175		-0.494**	-0.345
		(0.204)	(0.205)		(0.213)	(0.214)
Incomplete secondary (university prep)		-0.241	-0.171		-0.607***	-0.499**
		(0.204)	(0.206)		(0.215)	(0.216)
Complete secondary (university prep)		-0.489**	-0.427**		-0.750***	-0.648***
		(0.200)	(0.201)		(0.211)	(0.211)
University without degree		-0.628***	-0.593***		-0.985***	-0.866***
		(0.202)	(0.203)		(0.212)	(0.213)
University with degree		-0.898***	-0.823***		-1.275***	-1.163***
		(0.205)	(0.206)		(0.215)	(0.215)
Year			-0.054***			-0.042***
			(0.014)			(0.015)
Time fixed effects	No	Yes	No	No	Yes	No
Country fixed effects	No	Yes	No	No	Yes	No
Country-specific time trend	No	No	Yes	No	No	Yes
Constant	-0.295***	0.965***	108.200***	-0.105***	0.173	84.790***
	(0.017)	(0.244)	(28.210)	(0.017)	(0.253)	(29.250)
Observations	25,026	19,029	19,029	25,026	19,029	19,029

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Again, the control variables account for a big part of the negative effect on the agreement with either one of the statements. Regarding the statement 'Children', males who are older, have more children and are religious are more likely to agree. Males who are divorced, single, have a higher life satisfaction, feel like they have a high control over their life outcomes, have a high income and have

completed at least secondary school (university prep) are less likely to agree with the statement. Finally, a significant negative timeline trend is shown. For the statement 'Home', the control variables have the same effect apart from 'Separated', 'Medium income' and 'Incomplete secondary (university prep)', which have an additional significantly negative effect and 'Very poor health', which has an additional positive effect on agreement with the statement. There is again a negative time trend.

Looking at both the columns, it can be said that male respondents who have a partner who is employed, are younger, single, divorced or separated, have less to no children, are not religious, are satisfied about their life, feel like they have a lot of control over the outcomes in their life, have a higher income and are more advanced in schooling are less likely to agree with traditional views on gender norms. This is in line with the results for female respondents. The negative timeline trend is also similar.

5.4 Conclusion benchmark results

All in all, the results do support the literature that the amount of subsidizing or free facilitation of childcare results in more equal views on gender norms. Specifically, the results show a positive correlation between public expenditures and female labour participation and between female labour participation and a lower chance to agree with traditional views on gender norms for both male and female respondents.

6. Limitations

Using a fixed effects method for panel data in this study is something that is widely done in this area of expertise. This is because it has several advantages with regard to other cross-sectional methods. But the fixed effects method does also have its limitations. In this chapter I discuss the three most relevant limitations of the model with regard to this study.

6.1 Unobserved Heterogeneity

The first potential problem that could arise is unobserved heterogeneity. In the first regression I use fixed effects for both time and country. Therefore, the only unobserved heterogeneity can come from the fact that the two-way fixed effects model cannot account for time-varying shocks. This can be for example when the economic crisis has impacted female labour participation in different countries in different ways in time or if there have been political changes over time specifically for certain countries in the dataset. This is a realistic limitation in this study. The danger of unobserved heterogeneity is reduced, since there are only OECD countries involved in the first regression which are mostly European countries. But even within European countries, differences exist. Take for example the euro crisis. It seems logical that it has affected the United Kingdom differently through time than Estonia.

For the second regression I use both a two-way fixed effects regression and a regression in which I include country-specific time trends. For the second regression time-varying shocks on country level

are taken into account. Since both the regressions show very similar results the chance of unobserved heterogeneity seems small. However, it is still possible that there are time-varying shocks on an individual level and this is not yet accounted for. An example could be the effect of the MeToo movement if it impacted individuals in different timeframes. The MeToo movement had a significant impact on the average view on gender norms across the globe. Individual time-varying shocks do seem plausible to exist but are minimized due to the fact that the EVS-survey is only performed once every nine years and most shocks will happen somewhere in between the survey rounds. Therefore, most shocks are straightened out during a survey round and will thus not bias the results.

6.2 Measurement errors

The second potential problem is that there could be measurement errors in the data. Measurement errors occur when a country or individual passes on a piece of data and it is subsequently found to be untrue. This can happen accidentally and at random, but still affects the regression. For the first regression, measurement errors do not necessarily seem like a problem. Both variables used in the first regression are based on OECD data, which is nationally gathered. To gather this, mostly administrative data is used. Take for example the public expenditures on childcare and early education in US dollars. This is publicly available data which is recorded in the balance sheet of a country. One can assume that this data has been checked several times and thus does not contain errors.

With the second regression, measurement errors are more likely. This is because the second regression is based on survey data. Survey data is more likely to contain measurement errors, since people fill in the data and this causes opportunities for mistakes. It may be the case, for example, that the respondent's attention drifts at the end of the interview and the answers therefore contain errors. However, the impact of the possible measurement errors is likely to be small in this study. This is because, there are in total more than 100,000 observations of people from 27 different countries and 4 timeframes. This means that there is on average around 1000 respondents per country for a certain year.

6.3 Reversed causality

Reversed causality is the third potential issue with this study. Reversed causality is a problem when it is not clear in which direction the effect works. In this study it could be for example that it is not clear whether public expenditures on childcare affect the percentage of female labour participation or whether the percentage of female labour participation affects the amount of public expenditure on childcare. According to the literature, this is a definitive problem for the study. Pollmann-Schult (2016) writes that in Germany for example, childcare facilitated by the government came into play a few years ago and was probably partly driven by the wish of women to be able to drop their children of

somewhere when they started working more hours a week. On the other hand, he writes that Sweden has implemented free childcare for children a long time ago, with the goal to stimulate women to work more often and for longer hours.

With regard to the second regression performed in this study, a similar problem arises. It is not entirely clear whether an increase in female labour participation stimulates an increase in equalizing views on gender norms or if this effect works the other way around. Again Pollmann-Schult (2016) mentions this problem in his research. He states that it is difficult to determine whether cultural factors are one of the major determinants of maternal labour participation. Budig, Misra and Boeckmann (2012) support the thought that reversed causality is a problem in this study. They write that work and family related policy implementations are heavily influenced by the cultural context in a country. This would mean that it is not clear whether the effect of public expenditure on childcare on equalizing gender norms does not secretly work in the opposite direction. The results should therefore be read with caution.

However, the problem of reversed causality seems to be a bigger problem in relation to the first hypothesis than the second hypothesis. This is because there are two studies into the direction of the effect of female labour participation on gender role attitudes. Macke, Hudis and Larrick (1978) for example write that the effect of labour force participation of women on gender role attitudes dominates the effect of gender role attitudes on female labour participation. Moreover, Molm (1978) shows that there is only a one-way influence from employment status to opinions about sex roles.

7. Robustness checks

To check whether the results hold in different cases, I perform multiple robustness checks. Firstly, I will check if the effect of female labour participation on the view on gender norms still exists if the agreement to both the statements are taken together. Secondly, I perform ordered logit regressions. Subsequently, test some of the assumptions underlying a two-way fixed effects model and logistics regression to yield unbiased estimates.

7.1 Average view on both statements regarding gender norms

From the beginning I have examined the two statements from the EVS survey separately. To have a general view, it is wise to check whether the results also hold when the averages of the agreements of the statements are put together. This way there is less danger of measurement errors and the regression can catch differences that occur between the two different propositions.

To test whether the benchmark results hold when the view on gender norms is averaged and put together, I have performed a new logistics regression. The regression results are shown in the appendix for male and female respondents independently. Again, I have regressed the view on gender norms on

female employment without any control variables or fixed effects, with control variables and fixed effects and with control variables and a country-specific time trend. The results are very comparable to the main results. For both female and male respondents there is a highly significant effect of employment on the chance that they disagree with either one of the gender norms. The regression coefficients are -0.508 for female respondents and -0.454 for male respondents for the simple OLS regression. Additionally, the coefficients are -0.184 for female respondents and -0.266 for male respondents when control variables and fixed effects are added. Lastly, the coefficients are -0.189 and -0.268 respectively when control variables and a country-specific time trend are added.

Furthermore, there are again a lot of control variables which are significant for both female and male respondents. These show that female respondents who are younger, divorced, separated, single, have less to no children, are not religious, are satisfied about their life, feel like they have a lot of control over the outcomes in their life, have a higher income, have better health and have finished at least incomplete secondary school (university prep) are less likely to agree with either one of the statements. Moreover, agreement with the statements is less likely for male respondents who are younger, divorced, widowed, single, have less to no children, are not religious, have a higher income, have better health and have completed secondary school (university prep) or more. Lastly, for both female and male respondents there is a significant and negative time trend. These results support the thought that the benchmark results can be trusted.

7.2 Ordered logit regression

As a second robustness check I have performed an ordered logit regression of the agreement with the statements 'Children' and 'Home' for both female and male respondents. The difference with this regression and the earlier logit regression is based on the dependent variable. For the main results I have created a binary variable, which reflects one when a respondent agrees or strongly agrees with the statement and zero when the respondent disagrees or strongly disagrees. With the ordered logit regression, I have kept the four categories as they initially existed. This is done to see if the results are comparable when performing an ordered logit model in comparison to a binary logit model.

The ordered regression shows how likely the respondent is to answer one of the four categories. The categories are ordered as followed. The first category is "Strongly agree", the second category is "Agree", the third category is "Disagree" and the fourth category is "Strongly disagree". I have again performed a simple OLS-regression and a two-way fixed effects regression for both the statements. Table 7 reflects the regression results for the female respondents and Table 8 presents the results for the male respondents.

The coefficient of the statement 'Children' for female respondents equals 0.551 for the simple OLS-regression. Since the coefficient lies between Cut 2 and Cut 3, this means that the female respondents who work are most likely to disagree with the statement 'Children'. This is comparable to the main results. The coefficient of the statement 'Children' for female respondents equals 0.212 for the two-way fixed effects model. This coefficient lies between the first and second cut and means that female respondents who are employed are most likely to agree to the statement. This is contradictory to the main results. For the statement 'Home', the results are similar to those of the statement 'Children'. With a simple OLS-regression the coefficient equals 0.535 and denotes that female respondents who work are most likely to disagree with the statement 'Home'. For the two-way fixed effects regression, the coefficient equals 0.163 and indicates that female respondents who work are most likely to agree with the statement 'Home'. One note to this is that the coefficient 0.163 is very close to cut-off 2, which equals 0.325. All of the coefficients are highly statistically significant.

Table 8 very much resembles Table 7. The employment coefficients for the OLS-regressions equal 0.501 for the statement 'Children' and 0.462 for the statement 'Home'. They are both between the second and third cut-off and thus indicate that male respondents who have a partner who works are most likely to answer 'Disagree' in the European Value Survey. For the two-way fixed effects regressions, the employment coefficients equal 0.321 for the statement 'Children' and 0.253 for the statement 'Home' and fall between the first and second cut-off point. This denotes that male respondents who have a partner who works are most likely to agree with the statements. Again the employment coefficient for the statement 'Home' is much closer to the second cut-off (0.317) than the first cut-off (-2.119) and all the coefficients are highly statistically significant.

There is no clear explanation as to why the ordered logit models give partly contradictory results to the main tables. It is possible that the dummies used for year and time, which reflect the country and year fixed effects have altered the cut-off points to be more positive, but this is not entirely clear. The results can also be influenced by the fact that the observations have declined by 50% by adding the control variables. Either way these results are noticeable.

7.3 Independence of the error term

The regression which tests the effect of public expenditure on female labour participation is based on the assumption that the error term has a conditional mean equal to zero for every year for a certain country. This conditional mean which equals zero is necessary to make sure that the regression model is not biased and it implies that there is no omitted variable bias.

To test this assumption, I used the Durbin-Watson statistic. The Durbin-Watson statistic has a value between 0 and 4. While numbers closer to 0 or 4 imply positive or negative autocorrelation, a value

near to 2 suggests little to no autocorrelation. The Durbin-Watson statistic with regard to the first regression is estimated as 1.9878428. Since this number is so near to 2, it is likely that the error terms of the regression model have (almost) no autocorrelation. This provides evidence in favour of the hypothesis that the error term has a conditional mean of zero for each year for a particular nation.

7.4 Joint distribution

The second assumption which should be tested for the regression on the effect of public expenditure on childcare on female labour participation states that the variables of one country are distributed identically to, but independently of, the variables of another country.

I test this assumption with a Breusch-Pagan-Godfrey (BPG) test. The test shows a likelihood-ratio χ^2 with a number of -21.90 and a p-value of 1.000. This indicates that for the first regression there is not enough proof to reject the 0-hypothesis that there is no heteroskedasticity. This suggests that there are no systematic patterns of heteroskedasticity between countries in the panel data. It points to the fact that the variables in each country are identically distributed but independent to variables from other countries. To confirm the outcome of this test, I have also created kernel density plots. These kernel density plots are shown in Figure 12. The figure reflects that the distribution of female labour participation is equally distributed over the years. The graphs over some years have a slightly lower peak, but overall the graphs are very similar and this confirms the assumption and with that the outcome of the Breusch-Pagan-Godfrey (BPG) test.

7.5 Outliers

The third assumption is that it is unlikely that there are large outliers. This assumption underlies both the regressions used in this study. An outlier is an observation which is significantly different from the other observations. In the descriptive results, the figures 4 to 11 were discussed, which show the timeline trends for the average view on gender norms, the public expenditures on childcare and early education and the percentage of female labour participation. These figures show that there were no clear outliers apart from two exceptions. All in all, they are not something to be worried about.

The first outlier is from the public expenditure on childcare and early education for the year 2018. The observation of 2018 is way lower than the other years and does not follow the trend of the other years. To avoid the outlier of public expenditure in 2018, I have limited the first regression to the years 2000-2017. This way the outlier did not influence the first regression (of the effect of public expenditure on childcare on female labour participation).

The second outlier is the percentage of female labour participation in 2020. The observation of the female labour participation in 2020 is not a problem, since the EVS was not conducted in 2020.

Therefore, the observation is not taken into account in the second regression (of the effect of female labour participation on the average view on gender norms).

8. Discussion

As discussed, the results are in line with the literature and show two highly significant effects. These effects are a positive effect of subsidizing childcare on the amount of female labour participation and a negative effect of female labour participation on a traditional view on gender norms. The control variables which have a significant positive effect on a traditional view on gender norms are 'Age', 'Number of children' and 'Religious'. Moreover, the control variables which show a significant negative effect on a traditional view on gender norms are 'Control', 'Income', 'Health' and 'Level of school'. The relationship statuses only have an effect on the view on gender norms in some cases. Finally, a significant negative timeline trend is shown.

These results are in line with the literature. The main effects are comparable to the empirical results which are described in the literary review and support the thought that subsidizing childcare stimulates more equal gender norms. The effects of the control variables also seem similar to what the literature suggests. For example, Seguino (2007) provides proof of a change in stereotypes and customs that favour gender equality over time. Furthermore, she shows that the economic empowerment of women has been an important factor in this shift. Moreover, Pessin (2018) denotes that a decrease in marriage formation was predicted by a higher prevalence of egalitarian gender norms. However, only women without a college degree experienced this reduction. Additionally, Grasmick, Wilcox and Bird (1990) write that their findings suggest that religion makes a fairly substantial difference on matters related to family. Thornton, Alwin and Camburn (1983) confirm the results that religion can negatively affect the formation of egalitarian views on gender norms and also state that the level of school positively effects the creation of an egalitarian view on gender norms.

Subsequently, Kawachi, Adler and Dow (2010) show evidence that a higher education is causally related to better health and Ceci and Williams (1997) proof that the level of education is positively correlated with higher earnings. This is relevant, since healthier respondents are more likely to also have higher earnings and also have a higher level of education. Therefore, healthier and richer respondents are more likely to have an egalitarian view on gender norms.

Finally, it does not seem extraordinary that the amount of control the respondent has over his/her life does negatively affect the chance that he/she agrees with traditional gender norms. I added this variable as an indicator of freedom of the respondent to make choices in his/her life. Control over these choices can be smaller due to cultural obstacles, health obstacles or income obstacles. When

people do not feel like they have a choice over how to live their life but are just focussed on surviving, the expectancy is that they do not worry as much about gender norms since they have bigger problems going on. This is in line with the results.

The biggest limitation of this study is the reversed causality as mentioned earlier. From the regressions it becomes clear that there is a positive correlation between subsidizing childcare and female labour participation and between female labour participation and equalizing gender norms. However, in both cases it is not clear in which direction the effect works. According to the earlier discussed literature subsidizing childcare can affect female labour participation but female labour participation can also influence policy implementations to subsidize childcare (Jaumotte, 2004). Moreover, there is literature mentioning how cultural obstacles like embedded sex roles can direct female labour participation and on the other hand that female labour participation impacts the view people have on gender norms ((Boelmann, Raute and Schonberg, 2021; Fortin, 2005).

Therefore, it would be good in the future to do research to the direction of the effect. This can be done in the same way as Boring & Moroni (2023) have done. They used a survey and matching to find the effect that the COVID pandemic had on how people view gender norms. They created a survey with similar questions to the European Value Survey and asked a representative group of French people to fill the survey in after the COVID-19 pandemic and the regarding safety measurements started. Then they matched the results to the results of the European Value Survey and showed the effect of the COVID-19 measurements on how people view gender norms. The same thing could be done to test the direction of the effect of subsidizing childcare. For example, EVS results of the Netherlands could be compared to a generated survey after the policy implementation on subsidizing childcare takes place. Then the difference can be measured.

Even though there has already been made huge process to realise gender equality, there is still a long way to go. There is an existing gender pay gap in almost every country in the world and in many families the caregiver of the children is female till this day. Therefore, it is of the utmost importance that that policies stimulating gender equality are as effective as possible. This study is hopefully one of many following studies evaluating the efficiency of policy implementations regarding gender equality. Future studies could be examining the effect of discrimination policies on how people view gender norms or the difference between the effect of subsidizing childcare and free facilitation of childcare on how people view gender norms. It could also be to see what the effect is of women quota's on how people view gender norms and finally, the it would be nice to know how effective teaching about gender equality in school is.

9. Conclusion

In this study, the effect of subsidizing childcare on how people view gender norms is examined. This was done through two hypotheses. The first hypothesis states that subsidizing childcare leads to an increase in female labour participation. The second hypothesis states that an increase in female labour participation leads to an equalizing view on gender norms.

The results provide evidence in favour of both these hypotheses. The results with regard to the first hypothesis show that when the public expenditures on childcare per child in US dollars increase with 1% compared to the total government expenditures, the female labour participation increases with 0.069%. The results with regard to the second hypothesis show that respondents who are employed or have a partner who is employed, are younger, single, divorced or separated, have less to no children, are not religious, are satisfied about their life, feel like they have a lot of control over the outcomes in their life, have a high income and education and are healthy are less likely to agree with traditional views on gender norms. Additionally, there exists a negative timeline trend.

These results confirm the scientific papers which show that there is a positive correlation between subsidizing childcare and female labour participation. Moreover, it confirms the existing papers which conclude that there is a positive correlation between female labour participation and equalizing gender norms. Additionally, it highlights that there is a possible positive correlation between subsidizing childcare and equalizing gender norms. This is relevant in light of the strategy of the EU to effectively stimulate gender equality and because the Netherlands is planning to freely facilitate childcare for free in the near future.

The biggest limitation of this study is that there is a high possibility of reversed causality. It is not clear whether subsidizing childcare effects female labour participation or the effect works in the opposite direction. It is also not clear whether female labour participation affects how people view gender norms or the effects works the other way around. According to the literature, it is very well possible that the effects work in both directions.

It would be nice if the direction of the correlation between subsidizing childcare and how people view gender norms would be the research question of a future scientific paper. Other interesting research would be into the effect of other policy implementations focussed on gender equality and their effect on how people view gender norms. An example of this could be to examine the effect of discrimination policies on how people view gender norms.

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Appendix

Table 6: OLS-regression results on the effect of female labour participation on the view on gender norms by female and male respondents

	Average view on gender norms					
	Female respondents			Male respondents		
	(1)	(2)	(3)	(4)	(5)	(6)
Female employment	-0.508*** (0.018)	-0.184*** (0.040)	-0.189*** (0.040)	-0.454*** (0.030)	-0.266*** (0.049)	-0.268*** (0.049)
Age		-0.005*** (0.002)	-0.006*** (0.002)		0.008*** (0.002)	0.008*** (0.002)
Divorced		-0.123** (0.059)	-0.124** (0.059)		-0.298*** (0.075)	-0.307*** (0.076)
Separated		-0.367*** (0.129)	-0.367*** (0.129)		-0.188 (0.134)	-0.187 (0.135)
Widowed		0.007 (0.080)	0.007 (0.081)		-0.306* (0.164)	-0.310* (0.165)
Single		-0.362*** (0.057)	-0.356*** (0.057)		-0.260*** (0.064)	-0.266*** (0.064)
Number of children		0.071*** (0.017)	0.076*** (0.017)		0.044** (0.020)	0.045** (0.020)
Religious		0.531*** (0.041)	0.541*** (0.042)		0.518*** (0.040)	0.524*** (0.041)
Life satisfaction		-0.031*** (0.010)	-0.029*** (0.010)		-0.015 (0.011)	-0.014 (0.011)
Control		-0.028*** (0.009)	-0.026*** (0.009)		-0.007 (0.010)	-0.005 (0.010)
Medium income		-0.118** (0.046)	-0.122*** (0.046)		-0.153*** (0.049)	-0.170*** (0.050)
High income		-0.323*** (0.052)	-0.322*** (0.052)		-0.342*** (0.055)	-0.359*** (0.056)
Good health		0.111** (0.049)	0.112** (0.049)		0.042 (0.048)	0.044 (0.048)
Fair health		0.259*** (0.058)	0.269*** (0.058)		-0.056 (0.061)	-0.052 (0.061)
Poor health		0.415*** (0.086)	0.427*** (0.086)		-0.077 (0.095)	-0.062 (0.096)
Very poor health		0.238 (0.171)	0.261 (0.173)		0.415** (0.202)	0.414** (0.202)
Completed elementary		0.223 (0.147)	0.222 (0.148)		0.002 (0.205)	0.041 (0.205)
Incomplete secondary (vocational)		0.027 (0.148)	0.048 (0.149)		-0.124 (0.199)	-0.067 (0.199)
Complete secondary (vocational)		-0.137 (0.154)	-0.114 (0.154)		-0.315 (0.203)	-0.238 (0.203)

Incomplete secondary (university prep)	-0.313** (0.158)	-0.291* (0.161)	-0.356* (0.205)	-0.289 (0.206)		
Complete secondary (university prep)	-0.391*** (0.148)	-0.376** (0.149)	-0.575*** (0.199)	-0.510** (0.199)		
University without degree	-0.671*** (0.152)	-0.669*** (0.153)	-0.693*** (0.202)	-0.641*** (0.202)		
University with degree	-0.982*** (0.161)	-0.949*** (0.162)	-1.021*** (0.208)	-0.948*** (0.208)		
Year		-0.036** (0.015)		-0.044*** (0.016)		
Time fixed effects	No	Yes	No	No	Yes	No
Country fixed effects	No	Yes	No	No	Yes	No
Country-specific time trend	No	No	Yes	No	No	Yes
Constant	-0.618*** (0.014)	-0.140 (0.210)	72.060** (29.350)	-0.914*** (0.018)	-0.271 (0.253)	87.150*** (31.200)
Observations	58,862	22,674	22,674	25,026	19,029	19,029

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Ordered logit regression results on the effect of the employment of female respondents of the EVS survey on their view on gender norms

	(1) 'Children'	(2) 'Children'	(3) 'Home'	(4) 'Home'
Employment	0.551*** (0.016)	0.212*** (0.030)	0.535*** (0.016)	0.163*** (0.030)
Age		0.002 (0.001)		0.008*** (0.001)
Divorced		0.019 (0.043)		0.195*** (0.044)
Separated		0.073 (0.090)		0.332*** (0.087)
Widowed		0.004 (0.064)		0.017 (0.060)
Single		0.176*** (0.040)		0.308*** (0.040)
Number of children		-0.053*** (0.013)		-0.106*** (0.012)
Religious		-0.402***		-0.556***

Life satisfaction		(0.029)		(0.029)
		0.052***		0.014*
Control		(0.008)		(0.008)
		0.031***		0.016**
Medium income		(0.008)		(0.007)
		0.064*		0.117***
High income		(0.034)		(0.034)
		0.208***		0.285***
Good health		(0.038)		(0.038)
		-0.117***		-0.069**
Fair health		(0.034)		(0.034)
		-0.232***		-0.128***
Poor health		(0.042)		(0.042)
		-0.361***		-0.222***
Very poor health		(0.067)		(0.067)
		-0.226		-0.012
Completed elementary		(0.156)		(0.144)
		0.078		-0.070
Incomplete secondary (vocational)		(0.124)		(0.122)
		0.095		0.184
Complete secondary (vocational)		(0.125)		(0.123)
		0.151		0.366***
Incomplete secondary (university prep)		(0.130)		(0.127)
		0.373***		0.408***
Complete secondary (university prep)		(0.134)		(0.131)
		0.418***		0.601***
University without degree		(0.125)		(0.123)
		0.596***		0.845***
University with degree		(0.127)		(0.124)
		0.857***		1.126***
		(0.130)		(0.127)
Time fixed effects	No	Yes	No	Yes
Country fixed effects	No	Yes	No	Yes
Country-specific time trend	No	No	No	No
Cut 1	-1.559***	-0.986***	-1.484***	-1.884***
	(0.015)	(0.174)	(0.015)	(0.171)
Cut 2	0.189***	1.063***	0.316***	0.325*
	(0.013)	(0.173)	(0.013)	(0.170)
Cut 3	1.976***	3.265***	2.039***	2.373***
	(0.016)	(0.175)	(0.016)	(0.171)
Observations	55,375	22,216	53,940	21,955

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Ordered logit regression results on the effect of the employment of the partner of male respondents of the EVS survey on their view on gender norms

	(1) 'Children'	(2) 'Children'	(3) 'Home'	(4) 'Home'
Employment	0.501*** (0.024)	0.321*** (0.037)	0.462*** (0.025)	0.253*** (0.036)
Age		-0.010*** (0.001)		-0.006*** (0.001)
Divorced		0.178*** (0.057)		0.197*** (0.059)
Separated		0.131 (0.102)		0.265** (0.110)
Widowed		0.325** (0.129)		0.360*** (0.119)
Single		0.124*** (0.046)		0.114** (0.047)
Number of children		-0.033** (0.014)		-0.058*** (0.015)
Religious		-0.396*** (0.030)		-0.453*** (0.031)
Life satisfaction		0.034*** (0.009)		0.018** (0.009)
Control		0.032*** (0.008)		-0.007 (0.009)
Medium income		0.051 (0.039)		0.111*** (0.039)
High income		0.175*** (0.042)		0.253*** (0.042)
Good health		-0.052 (0.036)		0.012 (0.037)
Fair health		-0.039 (0.046)		-0.014 (0.047)
Poor health		-0.059 (0.076)		0.072 (0.079)
Very poor health		-0.172 (0.183)		-0.335* (0.172)
Completed elementary		0.264 (0.178)		0.170 (0.168)
Incomplete secondary (vocational)		0.240 (0.174)		0.333** (0.164)
Complete secondary (vocational)		0.375** (0.176)		0.436*** (0.167)
Incomplete secondary (university prep)		0.348* (0.179)		0.594*** (0.169)

Complete secondary (university prep)		0.566***		0.658***
		(0.174)		(0.164)
University without degree		0.763***		0.979***
		(0.175)		(0.165)
University with degree		0.999***		1.228***
		(0.177)		(0.167)
Time fixed effects	No	Yes	No	Yes
Country fixed effects	No	Yes	No	Yes
Country-specific time trend	No	No	No	No
Cut 1	-2.096***	-1.060***	-1.974***	-2.119***
	(0.024)	(0.214)	(0.024)	(0.213)
Cut 2	-0.198***	1.086***	0.105***	0.317
	(0.017)	(0.214)	(0.017)	(0.212)
Cut 3	1.690***	3.341***	1.840***	2.423***
	(0.020)	(0.215)	(0.022)	(0.212)
Observations	24,004	18,445	22,941	17,740

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

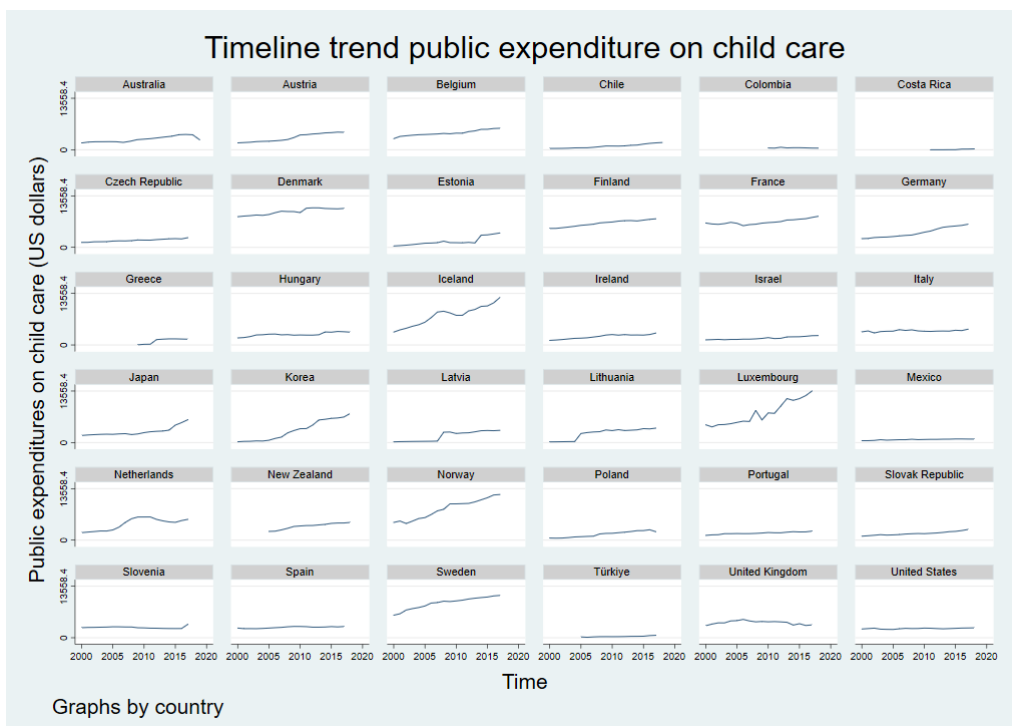


Figure 6: Timeline trend per country of the public expenditure on childcare and early education (year 0 to 5) in US dollars

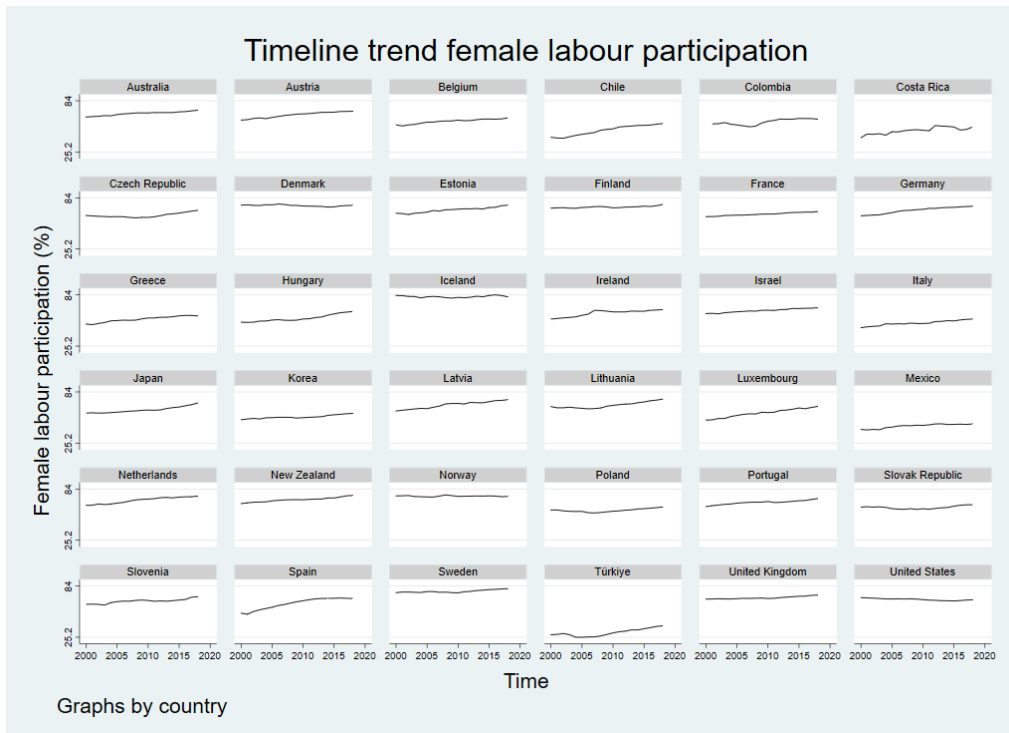


Figure 8: Timeline trend per country of the female labour participation in percentages (countries and years used in the first regression)

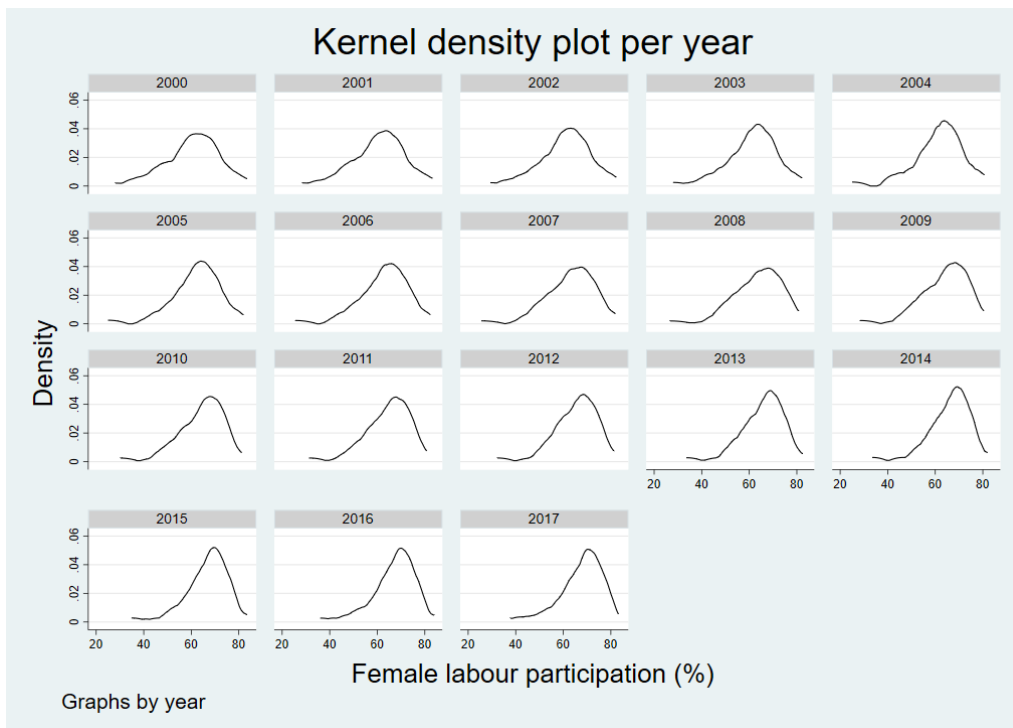


Figure 12: Kernel density plot per year to test for a joint distribution of female labour participation