



LUND UNIVERSITY  
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# Do Women work more if they feel less guilty?

An Analysis of Gender Role Attitudes, Family Policies, and Female  
Labor Force Participation in the European Union.

by

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May 2019

Master's Programme in Economics

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# Abstract

Recent studies identified gender role attitudes as a determinant of the remaining gender gap in labor force participation. In this study, I will investigate the correlations between women's gender role attitudes and female labor force participation in the European Union. Further, I examine the heterogeneity of the relationship between mother's gender role attitudes and labor force participation across countries with different family policies. Using the two most recent waves (1999 and 2008) of the European Values Survey (EVS) and performing Probit- and OLS-analyses, my results suggest that women's gender role attitudes are an important determinant of female labor force participation. Especially anti-egalitarian views and the feeling of 'mother's guilt' (disagreement with the statement '*A working mother can establish just as warm and secure a relationship with her children as a mother who does not work*') correlate negatively with female labor force participation. Those relationships are even stronger for mothers than for childless women. Comparing the correlations across Bahle's (2009) European family policy groups, I find that the relationship between the absence of 'mother's guilt' and individual mother's labor supply varies between 8.9 percent and 27.2 percent. Therefore, this study strongly emphasizes the importance of considering different family policies for the estimation of gender role attitude effects on women's labor force participation across countries.

Keywords: Female Employment, Gender Role Attitudes, 'Mother's Guilt', Family Policy

# Acknowledgements

I would first like to thank my thesis advisor Petra Thiemann from the Economics Department at Lund University. She dedicated generous time during her office hours and answered all questions regarding my research and writing. She allowed this paper to be my own work, but guided me in the right direction whenever I needed it.

Secondly, I would like to thank my previous lecturer Alessandro Martinello, who held a very interesting lecture about Labor Economics in the previous term. This lecture sparked my enthusiasm for this field of research and he encouraged me to write my thesis about the effects of gender role attitudes.

Further, I want to thank my fellow students, who were always a great source of advice and good company for a well needed and deserved coffee break. I am especially grateful for the company of Carlotta Pilgram, who made me calm whenever the stress was overwhelming and with whom I had many laughs, much joy and great support during the time of thesis writing.

Lastly, I must express my outstanding gratitude to my parents for providing me with massive support and encouragement throughout my years of study. This would not have been possible without them. Thank you.

Lund, 29.05.2019

Vibeke Müller

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# 1 Introduction

In recent decades, most countries in the European Union have experienced increasing female labor force participation rates and converging human capital achievements of men and women. From the 1990s onwards, this progress has slowed down (e.g. Clark, 2003; O'Neill, 2003) and a significant gap in the labor force participation between women and men is remaining.

Reasons for the persistence of the gender gap are diverse. As Blau and Kahn (2017) summarize, women's career interruptions and part-time work, as well as gender division of jobs, can explain some of the remaining gender gap. Further, gender roles and childbearing are important explanations for parts of the persistent gender gap (e.g. Fortin, 2005; Kleven & Landais, 2017). But even though gender role attitudes are identified as a determinant of the gender gap, much more research in this field is needed. Whether gender role attitudes are formed during childhood or whether they can be altered in adult life by current policies is important to assess, especially with respect to the effectiveness of those gender-equality policies that are already in place. I will contribute by investigating the heterogeneity of the relationship between gender role attitudes and female labor market participation across European countries with different family policies.

Economic literature started to investigate the effects of gender roles on labor market outcomes in the early 2000s, when the social psychological concepts of identity have slowly been imported into the field of economics. Akerlof and Kranton (2000) developed the gender identity model, which states that females refer to the gender identity norms when they decide about their labor force participation. Since then some research has investigated the impacts of gender role attitudes on female labor market outcomes and reveal different findings: Fortin (2005) finds evidence for a negative impact of women's anti-egalitarian views and traditional gender role attitudes on female labor market outcomes. In contrast, Charles, Guryan and Pan (2009) find that across states in the United States it is not the woman's view, but the attitudes of the median man that predict female labor market outcomes. Those different findings reveal the necessity of further research on gender role attitudes to clarify their impacts on labor market outcomes.

Another large and growing body of literature has investigated the effects of states' social support on female labor force participation (e.g. Berninger, 2009; Pettit & Hook, 2005). However, not much research has been done to detect whether family policies affect gender role attitudes. I assume that family policies influence female labor supply not just directly through the possibility to better combine work and childcare, but also due to a change in attitudes towards working women.

My assumption, that women's gender role attitudes correlate with institutional factors, which enhance the compatibility of motherhood and market work, is underlined by previous research. McRae found evidence which claims "that a complete explanation of women's labor market choices after childbirth, and of the outcome of those choices depends as much on understanding the constraints that differentially affect women as it does on understanding their preferences" (2003, p. 318). Berninger (2009) uses a multilevel analysis and investigates whether family policies and the cultural image of a mother correlate, and whether the later affects mother's labor force participation in Europe. Her results suggest that childcare policies for children below the age of three enhances mother's labor market participation and that this family policy is strongly related to the view of mother roles in the culture.

Kangas and Rostgaard's (2007) study is one of the rare examples, which addresses whether family policies affect gender role attitudes. The authors question Hakim's (2000) preference theory, which states that women's labor market participation is based on their own preferences and structural factors do not constrain them in their decisions to work. The authors investigate whether family policies influence opinions on family and working life. Kangas and Rostgaard's (2007) results support Hakim's (2000) theory and show that opinions are relevant for female labor force participation. Yet, their findings suggest that opinions are constrained by women's education and institutional factors. High levels of childcare and generous leave schemes, for instance, enhance women's employment.

My contribution to the existing literature on the effects of women's gender role attitudes on female labor market outcomes is threefold: Firstly, I investigate whether gender role attitudes and work values influence an individual woman's labor market participation in the European Union. Secondly, I examine whether social norms (measured by country-specific average work values and gender role attitudes) can explain differences in women's employment rates across countries. Lastly, I question whether the effects of gender role attitudes on individual women's labor market participation are heterogeneous across different family policy groups. I generate a model which combines Fortin's (2005) model of the effects of gender role attitudes and work values on female labor force participation in OECD (Organisation for Economic Co-operation

and Development) countries with Bahle's (2009) family policy clusters across countries in the European Union. Bahle (2009) clusters the countries according to their size and scope of family allowances as well as the size and mix of parental benefits and childcare services. Thus, those clusters evaluate how much state's family policies enable mothers to combine work and child-rearing.

Fortin (2005) uses the gender-identity model and stresses the importance of women's gender role attitudes and work values for female labor market outcomes. She focuses on 25 OECD countries and uses three waves (1990, 1995, 1999) of the World Values Survey. She claims that traditional gender roles (men as main breadwinners and women as housewives) stay constant over cohorts and time, whereas anti-egalitarian views (agreement with *'When jobs are scarce, men should have more right to a job than women'*) are softening over time. Both, prevalent anti-egalitarian views and traditional gender role attitudes seem to influence female labor market outcomes negatively. Lastly, she investigates the influence of an inner conflict on female labor market participation, which women might face because of egalitarian views and family values. Her results suggest that this 'mother's guilt' (measured by disagreement with the statement *'A working mother can establish just as warm and secure a relationship with her children as a mother who does not work'*) is an important predictor of female labor force participation.

For my study, data was collected using the two most recent waves in 1999 and 2008 from the European Values Survey (EVS). I focus solely on countries in the European Union (EU), which has specific policy goals for its member states: Individual countries' policies should increase gender equality, labor participation, fertility and reduce child poverty, e.g. having 90 percent of children between three and school-starting age and 33 percent of children aged between zero and two in formal childcare by 2012 (European Commission, 2007). Despite having similar goals, EU countries vary in their historical backgrounds and implementation of family policies. Therefore, each country's family policy involves various possibilities and limitations with regards to female labor force participation that are worth exploring further.

My findings show that both, preferences and gender role attitudes, are important for female labor market participation. This highlights the importance of beliefs and personal ideology for labor market decisions. Firstly, my results from the Probit analysis of individual women's employment status and the probability of part-time work are similar to the findings of Fortin (2005) and, therefore, substantiate that gender role attitudes are an important determinant of an individual woman's labor force participation. Secondly, my results show that competitiveness

increases women's employment rates, whereas traditional gender roles decrease them and, thus, are in line with Fortin's (2005) findings that social norms matter for female employment rates.

Thirdly, my evaluation reveals that gender role attitudes influence mother's labor force participation strongest in countries with a low state interference into the family-work relationship (e.g. Ireland, the United Kingdom (UK), and the Netherlands) and lowest in the group of Nordic countries, which have the highest level of institutionalization (e.g. Denmark, Sweden, Finland, Estonia, and Latvia). I find evidence for large heterogeneity of the relationship between gender role attitudes and female labor market participation across European countries with different family policies: Agreeing with the statement '*A working mother can establish just as warm and secure a relationship with her children as a mother who does not work*' increases individual women's labor supply by 8.9 percent in Nordic countries and by 27.2 percent in countries with low state interference into the family-work relationship (e.g. Ireland, the UK, and the Netherlands). The statement '*Being a housewife is just as fulfilling as working for pay*' shows differing results as well: Agreeing with it decreases individual mother's labor supply by 8.8 percent in the Nordic countries and by 17.2 percent in countries with low state interference into the family-work relationship. Therefore, this study makes a major contribution to the research by demonstrating that family policies matter for the effect of gender role attitudes on female labor force participation.

The remaining part of the paper proceeds as follows: In chapter two, the paper gives a brief overview of the existing literature in this field of research. The third chapter is concerned with the methodology and data used for this study. In chapter four, I present and discuss the results of the analyses. Lastly, I conclude and discuss the limitations of this work.

## 2 Literature Review

### 2.1 The Gender Gap in Labor Market Participation

Even though the gender gap in labor force participation rates became closer over the last decades, there are still differences in men and women's labor supply. A large body of research analyzes where the gender gap in labor market outcomes comes from.

The research on female labor supply has a long history and its origin lies in the time allocation model, which was introduced by Mincer and Becker in the 1960s. Mincer (1962) conceived a model where time is costly and must be divided between household production and leisure. Becker (1965) used Mincer's separation approach and the cost of time in his time allocation model, where individuals allocate their time to leisure, market work, and household production. Because of traditional gender roles, home production is often seen as a better alternative to market work for women, which might explain women's lower attachment to the labor market (Jaumotte, 2003). Since its introduction in 1965, Becker's time allocation model has been extended and investigated multiple times (e.g. Gronau, 1976; Freeman & Schettkat, 2005).

The literature on how gender role identities and work values affect labor market outcomes of women and men started growing in the late 20<sup>th</sup> century, when the influence of psychological literature on economic questions increased. One could argue that women are more altruistic, risk-averse and dislike competition to a higher extent than men because that is what is expected from them according to gender identity norms. Several studies show that the attitudes towards leadership, altruism, greed, and competitiveness differ among the genders (e.g. Andreoni & Vesterlund, 2001; Gneezy, Niederle & Rustichini, 2003; Fortin, 2008; Buser, Niederle & Oosterbeek, 2014). Additionally, men find higher earnings more important, whereas women value job stability and flexibility more (Wiswall & Zafar, 2018). Past research has also shown that men accept competition, whereas women shy away from it (Croson & Gneezy, 2009; Niederle & Vesterlund, 2007). Together, these studies indicate different preferences for the work environment of men and women.

Research regarding the impact of gender identities on gender differences in labor market outcomes shows contradicting results and is further reviewed in the next section. While some researchers suggest that it is the individual woman's attitudes and preferences that matter for her labor market participation (e.g. Hakim, 2000; Fortin, 2005), other researchers strengthen the importance of the cultural opinion (e.g. Charles, Guryan & Pan, 2009) and institutions (e.g. Berninger, 2009; Pettit & Hook, 2005). So far, the literature lacks results on how these factors work together and influence each other to determine female labor force participation.

Related to gender roles, a large and growing body of literature focuses on childbearing effects on female labor market outcomes. Researchers in this field have identified that fertility is responsible for the largest part of the gender differences in labor market outcomes. According to traditional gender roles, childcare is amongst women's main tasks. Many researchers find evidence for child penalties in female labor market outcomes (e.g. Angrist & Evans, 1998; Fernández-Kranz & Rodríguez-Planas, 2013; Lundborg, Nilsson & Rooth, 2014; Angelov, Johansson & Lindahl, 2016; Kleven & Landais, 2017). However, Khattab, Johnston and Manley (2018) show that higher qualifications moderate the negative effect of having children on female labor force participation.

Since childbearing is one of the main determinants of gender differences in labor market outcomes, there has been a growing interest on the effects of family policies, which aim to increase female labor supply across European countries. UNICEF (2008) shows that more and more young children go to formal childcare, while their parents work. The goals formulated by governments in many European countries and international organizations like the EU and OECD (e.g. having 90 percent of children between three and school-starting age and 33 percent of children aged between zero and two in formal childcare by 2012 (European Commission, 2007) indicate that further changes in the behavior of mothers and their childcare can be expected in the next years. Mothers are expected to participate to a higher extent in the labor market, whereas fathers contribute more to childcare and more children take part in formal childcare beginning at a very young age (UNICEF, 2008).

Even though much research has shown that states' social support affects mother's labor force participation (Berninger, 2009; Gornick, Meyers & Ross, 1998; Mandel & Semyonov, 2006; Pettit & Hook, 2005), not much research has been done to detect if family policies affect gender role attitudes (or the other way around). Family policies might affect female labor supply not just directly through the possibility to combine working and child-caring, but also indirectly through a change in attitudes towards working women. For better understanding the background

of gender identity norms and family policies, the following two sub-sections will give an overview of those bodies of literature.

## 2.2 Gender Identity and ‘Mother’s Guilt’

Recently, gender identity and social norms are of high interest in the literature to explain the remaining gender gap in labor market outcomes. Over the life-cycle, individual women decide about their education, family status, fertility, and labor force participation. Their personal opinions about gender roles influence those decisions. Women might show some attitudes and behaviors because this is what is expected from them, based on prevalent ‘gender identity norms’ (Bertrand, 2011). Several studies display that a woman’s attitude towards female work is central to predict if she supplies market work (Levine, 1993) and to which extent she participates in the labor market (Vella, 1994). However, the results are contradicting at times (e.g. Fortin, 2005, 2009; Charles, Guryan & Pan, 2009). Therefore, the importance of an individual woman’s gender role attitudes should be examined in more detail in order to verify if one of the contradicting results can be substantiated.

First, to understand how those gender identity norms evolve, I distinguish between effects of nature (which captures genetic traits of individuals) and nurture (which encompasses the environment). As summarized by Bertrand (2011), research on nature’s impacts on gender differences includes investigations on differences between male and female brain structures and their impact on gender specific skills (c.f. Kiruma, 1999). Studies focus mostly on testosterone levels, which differ not only between women and men, but also within gender, and which predict behavioural outcomes (e.g. Archer, 2006; Hermans et al., 2006), individuals’ willingness to take financial risk (Dreber & Hoffmann, 2007), as well as career choices and professional success (Maestriperi, Sapienza & Zingales, 2009). Even though those studies suggest some explanatory power of nature for gender differences in labor market outcomes, none of those studies implies causality. According to Bertrand (2011), this is apparent since testosterone levels and brain structures might be affected by environmental factors and could both influence and be influenced by behavioral choices.

Studies on the impacts of nurture show that gender role attitudes are transmitted through generations and develop during childhood. For example, Vella (1994) argues that the attitudes towards working women are influenced by religiosity and the education level of the parents. Similarly, Fernández, Fogli and Olivetti (2004) show that those men whose mothers worked

during their childhood are significantly more likely to assist their wives with housework and have wives that are working themselves. As the number of exactly those men raises, it is rational for women to invest more in labor market work and to raise their children with less traditional family structures (Fernández, Fogli & Olivetti, 2004). Farré and Vella (2013) state that mothers have a role model effect: Women's gender role attitudes influence their children's opinions towards working women. Less traditional attitudes increase the likelihood of having daughters that become working mothers themselves. Underlining those results, Haaland et al. (2018) claim that the intergenerational transmission of gender role attitudes shapes the gender employment gap even in countries like Norway, which is among the most gender equal societies in the world.

Despite the large influence of childhood factors on gender identity norms, several authors emphasize the importance of the culture that people are surrounded by later in life. Culture can be defined as a “systematic variation in beliefs and preferences across time, space, or social groups” (Fernández, 2007, p. 305) and beliefs about the role of women differ among those culture groups (Fernández & Fogli, 2009). Several studies underline the important role cultural preferences and norms play in forming opinions about the role of a woman in the family as well as whether a woman is supposed to supply market work or work at home (e.g. Reimers, 1985; Fernández & Fogli, 2009; Buser, Niederle & Oosterbeek, 2014). Beliefs and norms are transferred through different channels like the local society and the family (Fernández & Fogli, 2009). And since people are opposed to other preferences, opinions and norms in e.g. the neighbourhood, organizations, or school, social norms might influence their own opinions.

Because the European Union has clear policy goals for its member states, which aim at increasing gender equality, labor participation, and fertility and reducing child poverty, one might expect individuals in the European Union to have similar norms and beliefs. Despite common current goals, however, those countries vary in their historical backgrounds and implement different family policies. Several studies examine that cultural beliefs and norms develop more slowly than economic conditions and that they persist for a long time (e.g. Reimers, 1985; Voigtländer & Voth, 2012). Thus, I will investigate how the social norms within a country influence women's employment rates.

The amount of economic literature on gender roles has increased since the early 2000s, when the social, psychological concepts of identity have been imported into the field of economics: Akerlof and Kranton (2000) developed the gender identity model, which states that females refer to the gender identity norms when they decide about their labor force participation. According to the authors, identity can be defined as “one's sense of self” (p. 715)



or one's sense of belonging to a social group, which gives members an idea of how they should behave. In Akerlof and Kranton's model (2000), one's identity is part of the utility function and deviations from the social norm are harmful to one's utility. Individuals want to avoid disutility by deviating from it and therefore self-select into the respective behavior conferring to those norms. This leads to different predictions from the time allocation model, which describes a negative relationship between relative labor market earnings and women's relative participation in household activities (Bertrand, 2011).

The gender identity model was tested by multiple studies. Fortin (2005) uses 1990 to 1999 data from the World Values Survey to investigate how women's gender identity influences their labor market outcomes in OECD countries. Her results suggest that traditional gender roles are stable over time and across cohorts and influence women's labor market participation and earnings negatively. Egalitarian attitudes are found to be predictors of higher female labor participation and earnings. Lastly, high degrees of 'mother's guilt', which describes the conflict between egalitarian views and family values of mothers, seems to decrease female labor force participation.

In the following years, researchers examined Fortin's (2005) results for the United States (US) and came to different results. In 2009, Fortin investigates a similar question than she did in 2005: She uses data over the period from 1977 to 2006 for the US and tries to explain why the gender gap closes at a slower pace since the 1990s. Her results show that while gender role attitudes of women became less traditional until 1995, those trends regressed back to more traditional roles. Fortin (2009) demonstrates that the trend of women's labor force participation is developing parallelly to women's gender role attitudes.

In contrast to the findings of Fortin (2005, 2009), Charles, Guryan and Pan (2009) do not find evidence that women's own attitudes are predictive of their labor market participation, after controlling for men's views on gender roles. They, rather, generate a measure of male sexism across US states and find that it is the attitudes of the median man that predict female labor market outcomes. Those differing results reveal the need for further research in different countries and time periods. My investigation on the influence of gender role attitudes on female labor market participation across European countries in the 2000s aims at bringing some new insights on the importance of female gender identity norms for female labor market participation.

Related to the research field of gender identity norms, some research has been done to detect how women's feelings in the form of 'mother's guilt' influence female labor market outcomes. Before Fortin (2005) used 'mother's guilt' to explain female labor supply, it was

mostly discussed in the field of social science (e.g. Mann & Thornburg, 1987; Rotkirch & Janhunen, 2010). It describes the existence of a conflict between egalitarian-views in the labor market and family values of women. From the field of psychology, it is known that guilt is defined as an interpersonal moral emotion to avoid causing harm to others, which appears in kin and reciprocal relations (Rotkirch & Janhunen, 2010). Guilt and shame are two words for a similar feeling and hard to distinguish for non-professionals (Rotkirch & Janhunen, 2010). This emotion is self-directed and connected to how others are affected by one's behavior (Tangney, 1998; Jones, Schratte & Kugler, 2001). In the context of motherhood, Rotkirch and Janhunen (2010) show that guilt of mothers varies with the cultural and social environment as well as with parent-child conflicts.

So far, there exists only little literature on 'mother's guilt' in economics. However, Fortin (2005) measures 'mother's guilt' with the agreement on the statement '*A working mother can establish just as warm and secure a relationship with her children as a mother who does not work*' and shows that this inner-conflict is negatively associated with female labor supply. Yet, her analysis lacks determinants for the feeling of 'mother's guilt' and raises the question of whether institutions influence mother's feeling about working instead of full-time childcare in the home.

## 2.3 Related Family Policies

The direct effects of states' social support on female labor force participation are investigated by a large number of researchers (e.g. Berninger, 2009; Pettit & Hook, 2005). For simplicity, I will refer to those policies, which allow parents – especially mothers – to combine work and child-rearing, as family policies in the following. In her policy investigation across the OECD countries, Jaumotte (2003) shows that policy instruments like treating second earners with more neutral taxes (relative to single individuals), introducing tax incentives which incentivize spouses to share market work, expanding paid parental leave and childcare subsidies are possibilities to increase female labor force participation. Further research underlines Jaumotte's results and suggests that maternity, parental leave, and childcare have the strongest effects on mothers' (and fathers') possibilities to combine care and work (e.g. Gornick & Meyers, 2003; Pettit & Hook, 2009). Other policies, like child benefits and tax policies, might affect parents' labor force participation and wages but are less relevant for the ability to balance work and child-bearing (Jaumotte, 2003).

There is little evidence on correlations between family policies (e.g. parental leave and childcare) and gender role attitudes. One of the rare studies that investigates this relationship is the multilevel analysis by Berninger (2009). She examines whether family policies and the cultural image of a mother correlate and if the later affects mother's labor force participation of European women. Even though she finds no effects for parental leave, transfer payments, and childcare for children aged three to school age, her results suggest that childcare policy for children below the age of three enhances mother's labor market participation. Policies aiming at increasing childcare for less than three year old children are strongly related to a country's view of mother roles. This result, among others, raises the question whether family policies affect gender role attitudes and therefore, whether the correlations between gender role attitudes and female labor force participation, measured by Fortin (2005), are heterogenous against the background of countries' different family policies.

As summarized by multiple researchers (e.g. Jaumotte, 2003), policies affect female employment in different ways, for which reason family policies – including parental leave, childcare, child benefits and part-time work availability – should be looked at separately. Maternity and parental leave aim to support mothers' (or fathers') care for their very young children, while they stay connected to their employment contract (Gornick, Meyers & Ross, 1998; Kangas & Rostgaard, 2007; Pettit & Hook, 2005). It helps to coordinate work and family life, aims at boosting female labor force participation and seems to stimulate full-time work rather than part-time participation (Jaumotte, 2003). Even though parental leave is usually formulated in a gender-neutral way, it is mostly taken up by mothers. It might affect employment hours and wages positively, when the leaves are of reasonable length, but negatively when the parental leaves are either very short or very long (Misra, Budig & Boeckmann, 2011), since very long leaves are likely to decrease the probability of returning to work (Gornick & Hegewisch, 2010; Ondrich, Spiess, Yang & Wagner, 2003). Jaumotte (2003) claims that it is after 20 weeks on parental leave that the marginal effect on female labor force participation becomes negative.

A few countries (Belgium, Germany, Italy, the Netherlands, Portugal, and Sweden) have quotas for fathers' exclusive parental leave. However, if fathers' quotas are not 'use it or lose it' options, fathers are unlikely to take the leave (Saraceno, 2011). Sweden and Norway are examples for countries where the 'use it or lose it' rule has been implemented resulting in an increase in the number of fathers who actually take the leave (Saraceno, 2011). Also, compensation is important for the take-up rate. In Italy, where the compensation is much lower, only very few fathers take it (Saraceno, 2011). Overall, in previous literature, leave

arrangements are mostly considered to enhance female labor force participation and facilitating the dual-earner family concept (Korpi, 2000; Abendroth, van der Lippe & Maas, 2012).

Childcare programs are intended to enhance mothers' (and fathers') employment and provide early education (Gornick & Meyers, 2003). Especially childcare for children under three seems to be helpful to coordinate child-rearing and work (Gornick & Meyers, 2003). Research shows positive effects of formal childcare enrolment on female labor force participation (Jaumotte, 2003) and positive effects of high-quality childcare on children's development, except for children below one year (c.f. Kamerman, Neuman, Waldfogel & Brooks-Gunn, 2003). In the United Kingdom, for example, Chevalier and Viitanen (2002) identify positive effects of formal childcare availability on female labor force participation rates. Pettit and Hook (2009) substantiate these results with a cross-nationally study and state that high levels of childcare have a positive effect on women's labor force participation.

However, childcare policies and enrolment for pre-school children vary a lot across countries. The largest differences across countries exist among childcare for children that are less than three years old. Poland, Ireland, Italy, Portugal, Spain, and the Netherlands are the countries with the lowest support for parents with children in this age range (Saraceno, 2011). Since the coverage of childcare services for children between the age of three and the time when primary school starts is large in most countries, she concludes that it seems widely accepted and even necessary to send children to such institutions. Only Ireland, Malta, and Poland had childcare coverage rates below 60 percent in 2007 (Saraceno, 2011). Jaumotte (2003) substantiates these results and points out, that only public spending on formal daycare seems to influence female labor force participation significantly, whereas spending on pre-primary schools shows no significant effects. This might also be because many non-working mothers use pre-primary schools for their children's education (Jaumotte, 2003).

Public spending on formal childcare seems to influence female labor force participation positively, whereas childcare costs for parents seem to have negative effects (Jaumotte, 2003). Childcare spending is highest in Iceland and Sweden, whereas countries like Latvia and Austria spend the least amounts (OECD, 2019b). Regarding childcare costs, multiple researchers find evidence for a negative effect on female labor force participation in the US, Sweden, and Italy (e.g. Blau, 2003; Gustafsson & Stafford, 1992; Del Boca, 2002). For the US, Gelbach (2002) shows that the probability that single mothers are employed increases largely with access to free public kindergartens. Affordable childcare seems to affect women's full-time work more than part-time participation (Jaumotte, 2003). Misra, Budig and Boeckmann (2011)

substantiates this finding since their results suggest that work-facilitating policies like childcare for very young children affect mothers' employment hours and wages positively.

According to Korpi (2000), child benefits facilitate the traditional male breadwinner family. Child benefits are cash transfers for families with children and are supplemented by refundable tax credits (Dearing, Hofer, Lietz, Winter-Ebmer & Wrohlich, 2007). They increase the household income but do not support mothers to combine work and care for their children (Abendroth, van der Lippe & Maas, 2012). As suggested by Jaumotte (2003), childcare subsidies should be preferred to child benefits because its income effect incentivizes women to return to market work. When childcare subsidies are conditioned on female labor force participation, they are more effective and less costly than child benefits to increase female labor force participation. However, the income effect associated with receiving child benefits only shows a clear negative effect on female participation in the case of part-time work (Jaumotte, 2003).

Part-time work preferences vary across the EU, but its general availability to women might have the potential to increase female labor force participation in some of the countries. According to Abendroth, van der Lippe and Maas (2012), some countries use policies which offer the same security and benefits for part-time and full-time work. Higher availability of part-time work might make it easier for mothers to combine work and care. However, those policies might incentivize mothers to work fewer hours. Overall, those policies are in between the dual-earner and the main breadwinner family model and enhance a one-and-a-half-earner family (Abendroth, van der Lippe & Maas, 2012).

Together, studies highlight the importance of different family policies for mother's labor force participation. It shows how different family policies are related to different family models and how they might influence gender role attitudes. Since European countries vary in their family policies, I expect gender role attitudes to vary across those countries. This leads to my main hypothesis that the effects of gender role attitudes on individual women's labor market participation are heterogeneous across countries with different family policies.

# 3 Methodology

The third chapter will contain my research approach, the used data and variables, and a descriptive data analysis. The first section is divided into four parts: The first three parts describe the methods I use to investigate my three research questions and the last part describes how I check the results of these analyses for robustness.

## 3.1 Research Approach

### 3.1.1 Individual Woman's Labor Market Participation

My first aim is to investigate whether gender role attitudes and work values influence women's labor market outcomes in the European Union and whether I can substantiate Fortin's (2005) results for OECD countries. To accomplish this goal, I apply her model on a different dataset. I use a Probit Model, since the dependent variables are binary, and examine to which extent gender role attitudes and work values affect individual labor market decisions. When linear preferences are assumed, the model takes the following form:

$$Y_{ict} = \beta_0 + \beta_A A_{ict} + \beta_W W_{ict} + \beta_M M_{ict} + \beta_I I_{ict} + \beta_V V_{ict} + \beta_A \bar{A}_{mct} + \beta_t T + \beta_c C + \varepsilon_{ict} \quad (1)$$

$Y_{ict}$  is the employment (or part-time) status of woman  $i$  in country  $c$  at time  $t$ . The independent variables include gender role attitudes and anti-egalitarian views (in the row vector  $A_{ict}$ ) and work values, like good hours and competitiveness (in the row vector  $W_{ict}$ ). The inner conflict ('mother's guilt') is captured by  $M_{ict}$ .  $I_{ict}$  is a row vector of the individual characteristics and  $V_{ict}$  is a row vector for volunteering activities. Men's average gender role attitudes are included in the row vector  $\bar{A}_{mct}$ ,  $T$  are time dummies,  $C$  are country dummies and  $\varepsilon_{ict}$  is the error term.

I suppose that anti-egalitarian views, traditional gender role attitudes and 'mother's guilt' affect female employment negatively but part-time work positively. Competitive people are expected to invest more effort into their job, for which reason competitiveness is expected to

influence labor supply positively and part-time work negatively. Fortin (2006) claims that people are willing to trade off ‘meeting people’ and ‘usefulness to society’ for higher wages. Therefore, those work values are anticipated to affect employment negatively but part-time work positively. Valuing ‘good pay’ presumably influences employment positively. If respondents place high value on ‘good hours’, employment might be negatively affected, while the number of part-time employed workers increases. While volunteering in ‘leadership building organizations’ is expected to have positive effects, volunteering in religious and philanthropic fields might lead to lower effort in the job and therefore influence labor force participation negatively.

Even though I write about expected effects, my results might be better interpreted as correlations. It is not clear if women’s attitudes influence their labor market decisions or whether women form their attitudes because of their labor market participation. Lagged attitudes might help to detect the causal effect, but with the EVS data, it is not possible to generate such lagged attitudes for individuals. To assure that no other economic factors are captured in the analysis, time and country fixed effects are used and the analysis is done for a male sample as well. The robust standard errors are clustered by country to adapt to differences in the variance of individual heterogeneity within different countries.

### 3.1.2 Women’s Employment Rates across Countries

Secondly, I aim to investigate whether social norms (measured by country-specific average work values and gender role attitudes) can explain differences in women’s employment rates across countries of the European Union. Thus, this second model is following Fortin’s (2005) approach, which she used for the OECD countries. I perform a OLS-regression and include a time trend ( $t$ ) and the degree of country-specific family policy ( $P_c$ ), which is measured by country’s public expenditures on childcare (in percent of GDP; OECD, 2019b).  $\bar{Y}_{ct}$  is women’s employment rate in country  $c$  at time  $t$ . The independent variables contain country-specific average gender role attitudes and anti-egalitarian views (in the row vector  $\bar{A}_{ct}$ ) and country-specific average work values, like good hours and competitiveness (in the row vector  $\bar{W}_{ct}$ ).  $\bar{I}_{ct}$  is a row vector of average characteristics, like educational levels,  $\bar{V}_{ct}$  is a row vector of average volunteering activities and  $\varepsilon_{ct}$  is the error term.

$$\bar{Y}_{ct} = \beta_0 + \beta_A \bar{A}_{ct} + \beta_W \bar{W}_{ct} + \beta_I \bar{I}_{ct} + \beta_V \bar{V}_{ct} + \beta_P P_c + t + \varepsilon_{ct} \quad (2)$$

Compared to the individual level, some interpretations change on the country-level: Gender role attitudes are now country-specific social norms and might constrain women's decisions. The effects, however, are expected to have a negative sign as well. The inner conflict of mothers is only relevant for individuals and therefore is left out on the aggregate level. The average volunteering variables indicate the importance a woman places on networks, leadership skills, and altruistic activities outside the market. Positive attitudes towards competition might influence women's employment rates positively. Since more men than women are employers, men's attitudes are expected to influence women's employment rates more strongly.

On the country-level, lagged attitudes are available and can be used to address the problem of reverse causality. On one hand, men being the main breadwinners and society thinking that '*scarce jobs should go to men first*' might be the reasons for lower employment rates of women. On the other hand, men might be the main breadwinners just because women's employment rates are low in some countries. Country fixed-effects are excluded because the number of observations on the country-level is too small. Instead, Fortin (2005) uses public expenditures for childcare, used by Jaumotte (2003) before. I use 'public expenditures for childcare and early education', measured as percent of the GDP, published by OECD (2019b) for the years 1999 and 2008. Additionally, since men's average attitudes are less likely to include endogeneity problems (Fortin, 2005), I use them in an additional analysis.

A note of caution is necessary here since public expenditures on childcare are only one important aspect of work-child compatibility. I assume that using indices, which cover multiple aspects like childcare quality, availability, and costs, as well as other family policies like parental leave, lead to more accurate results. Therefore, I will perform an OLS regression on mother's employment rates, controlling for multiple family policy indices by Abendroth, van der Lippe and Maas (2012) in part 4.4 and test whether the results from this part are robust.

### 3.1.3 Heterogeneity of Gender Role Attitude Effects across Family Policy Groups

To answer my third research question of whether the effects of gender role attitudes on individual women's labor market participation are heterogeneous across different family policy groups, I generate a model which combines Fortin's (2005) model with Bahle's (2009) family policy clusters (see Table 1). In contrast to using total expenditures for family policies as my measure, family policy clusters allow me to cover multiple policy dimensions and thus help to capture pluralistic or contradictory policy orientations regarding family support (Ferrarini,



2006). As stated in 2.3, it is not just the total expenditures for family policies that matter, but different dimensions like quality, availability, and costs. I will assess the regression results from Model (1) against the background of different family policy groups. If gender role attitudes of individuals influence their labor market participation to different extents depending on the respective family policy in place, it might show that specific policies matter for the relationship between gender role attitudes and female labor market participation.

To further see whether the differences in gender role attitudes' explanatory power across the family policy groups are significant, I include interaction terms in the last part of this analysis. I multiply the single gender role attitude variables and the 'mother's guilt' variable with the family policy group of the country, respectively. Thus, I can see whether the family policy of the country, the individual woman lives in, significantly affects the explanatory power of the gender role attitudes and 'mother's guilt'.

Even though this third model builds upon Model (1), I use data from only one wave (2008), because Bahle's (2009) family policy clusters are generated based on data from the early 2000s and, thus, are not valid for earlier waves. Therefore, country- and time fixed effects are left out. The remaining variables in my Probit Model are as described before:  $Y_{ict}$  is the employment (or part-time) status of woman  $i$  in country  $c$ . The independent variables include the gender role attitudes and anti-egalitarian views (in the row vector  $A_{ict}$ ), work values (in the row vector  $W_{ict}$ ), 'mother's guilt' ( $M_{ict}$ ), individual characteristics (in the row vector  $I_{ict}$ ), volunteering activities (in the row vector  $V_{ict}$ ) and the error term  $\varepsilon_{ic}$ . Further, the interaction terms  $A_{ic} \times P_c$  and  $M_{ic} \times P_c$  display the row vector of interactions between gender role attitudes and family policy groups ( $P_c$ ), and 'Mothers guilt' and family policy groups, respectively. As described in Model (1), I cluster the robust standard errors by country.

$$Y_{ic} = \beta_0 + \beta_A A_{ic} + \beta_W W_{ic} + \beta_M M_{ic} + \beta_I I_{ic} + \beta_V V_{ic} + \beta_{AP} A_{ic} \times P_c + \beta_{MP} M_{ic} \times P_c + \varepsilon_{ic} \quad (3)$$

Even though European countries seem similar in many aspects, their family policies vary a lot. I expect that in countries with family policies, which give incentives to deviate from traditional gender roles, a mother's gender role attitudes and inner-conflict ('mother's guilt') correlate less with her labor market participation. High-quality childcare, for example, may make it easier for women to combine working and caring for their children since they can substitute household-work and supply more market work instead. Father's quotas ('take it or leave it' parental leave for fathers offered for example in Sweden and Norway) might give strong incentives for women to work, whereas fathers stay at home. Those incentives may even

convince individuals with conservative attitudes to deviate from traditional gender roles. Thus, such policies may be possibilities to break traditional gender role attitudes and change women's and men's mindsets about gender roles.

Additionally, mothers might feel guilty if they work, when the majority of mothers in their cultural circle does not and a society prefers mothers who stay at home. If more mothers would work and more fathers take the chance of leave policies, it might change a society's attitudes towards working women. And thus, mothers feel less guilty for working and giving their children to formal childcare. However, childcare quality and availability need to be high as well to decrease the feeling of guilt.

### 3.1.4 Robustness Checks

Lastly, I perform multiple tests to assure the robustness of the results. To test the results regarding my first research question, I perform Probit analyses as in Model (1), including the different family policy indices (Abendroth, van der Lippe & Maas, 2012; De Henau, Meulders and O'Dorchai's, 2007a, 2007b; Kangas & Rostgaard, 2007) instead of country fixed-effects. I use a sample of only mothers since family policies are most relevant for them. The data is limited to the last EVS-wave (2008) because the family policy indices are generated on the basis of family policies in the early 2000s. To verify the results of my second research question, I use Model (2) and test whether mother's average gender role attitudes on the country-level correlate with their employment rates when controlling for different family policies. I use family policy indices which were generated in previous research (Abendroth, van der Lippe & Maas, 2012). Again, I use a sample of only mothers and limit the data to the last EVS-wave (2008). I further present figures showing the correlations of different alternative family policy indices (by Abendroth, van der Lippe & Maas (2012) and De Henau, Meulders and O'Dorchai's (2007a)) and mother's average gender role attitudes by country.

To show the robustness of my third research question, I use model (3) and perform the regression with alternative clusters of family policy groups generated in previous research (e.g. Ferragina, 2019; Mischke, 2011).

## 3.2 Data and Variables

### 3.2.1 Employment, Gender Role Attitudes, and Work Values

My data on individual characteristics, labor-market decisions, work values, and gender role attitudes are derived from the European Values Survey (EVS). The data collection started in 1981 and includes data from four survey rounds over 16 countries in 1981 to 47 countries in 2008. Questions and countries vary over the rounds. In this study, I concentrate on waves three (1999) and four (2008) in 26 countries, which have become members of the European Union before 2008 and can be allocated to different family policies. I assume that these varying family policies affect women's gender role attitudes and labor market decisions.

The employment status of females is used as the main dependent variable. It is a binary variable set to one for full-time, part-time and self-employed women and to zero for housewives and unemployed women. The sample is restricted to women aged 18 to 64. Students, as well as retirees, are excluded. To obtain employment rates at the country level, I aggregate individual employment statuses. In Appendix A those employment rates, as well as the employment rates of 25-54-year old women calculated by the OECD (2019a), are presented. As structural control variables, I use age, marital status, educational level and presence of children. Due to gender segregation in occupations (Budig & England, 2001) I use the part-time status of females as the dependent variable in separate regressions. The part-time variable is binary and equal to one for individuals employed in part-time and zero for employees in full-time.

For the investigation of family policy effects on mother's labor force participation and gender role attitudes, I focus on mothers aged 18 to 40, because this is the group which is most likely affected by the family policies regarding the compatibility of work and child-rearing. Since the EVS data does not provide information on children's age, restricting my analysis to young mothers increases the probability that their children are of young age and are (or were recent) in need of care. The variables for the investigation of mother's labor supply are generated in the same way as for women (both childless women and mothers together). Mother's employment rates can be found in Appendix A.

Gender role attitudes and mother's guilt are measured with four statements. The respondents were confronted with those statements and had to decide if they 'strongly agree', 'agree', 'disagree' or 'strongly disagree'. The statements '*When jobs are scarce, men should have more right to a job than women*' (short '*Scarc jobs should go to men first*') and '*Both the husband and wife should contribute to household income*' (short '*Both spouses should*

*contribute to income*') are used to measure the anti-egalitarian view of the respondent. The statement *'Being a housewife is just as fulfilling as working for pay'* (short *'Being a housewife is fulfilling'*) is used as a statement about women's traditional role and is linked to Becker's (1965) model for the division of labor supply within households. Lastly, *'A working mother can establish just as warm and secure a relationship with her children as a mother who does not work'* (short *'Working mother warm with children'*) is used as a statement to measure the inner conflict of women, the 'mother's guilt'. Therefore, I generate a binary variable for each statement, which is coded as one when the respondent answered 'agree' and 'strongly agree', and zero for 'disagree' and 'strongly disagree'. For the statement *'When jobs are scarce, men should have more right to a job than women'* the answer 'neither' could also show egalitarian views. Therefore, 'neither' is coded as zero for this variable.

I measure work values, with the help of questions about important job aspects. Respondents name multiple job aspects that they consider to be important. I generate four variables: 'good pay', 'good hours', 'useful job for society' and 'meeting people'. When the aspect is mentioned by respondents, I code the variable as one and zero otherwise. Only few respondents rate 'useful job for society' and 'meeting people' as important, which is why I exclude both measures from the regression analyses. Further, to measure respondents' competitiveness, they were asked to choose a number on a scale from 1 to 10, where 1 means total agreement with the statement *'Competition is good. It stimulates people to work hard and develop new ideas'*, and 10 means total agreement with *'Competition is harmful. It brings out the worst in people'*. Respondents could choose any integer between 1 and 10. I recode the answer in ten steps from zero to one: one showing full agreement that 'competition is good'.

Lastly, information about the activity in unpaid voluntary work is used to generate three binary variables about people's activity in organizations with either 'leadership building skills', religious or philanthropic purposes. Sport and recreation, political parties and groups, labor unions and professional organizations are considered as voluntary activities to evolve leadership skills. The second group of voluntary work includes religious, arts and educational organizations and the philanthropic group combines charitable, environmental, and all other organizations.

### 3.2.2 Family Policies

To investigate the effects of family policies on mother's labor force participation and gender role attitudes, I use data on family policy groups and family policy indices generated by previous research (e.g. Bahle, 2009; Abendroth, van der Lippe & Maas, 2012).

Multiple researchers evaluate countries regarding their family policies and cluster them, accordingly, into family policy groups (e.g. Bahle, 2009; Ferragina, 2019; Mischke, 2011; Misra, Budig & Moller, 2007). Of those studies, Bahle (2009) uses the largest number of European countries and, therefore, generates the largest overall sample size. In order to analyze whether the effects of gender role attitudes on individual women's labor market participation are heterogeneous across different family policy groups, I use the five policy groups generated by Bahle (2009).

Bahle (2009) evaluates European countries according to their size and scope of family allowances as well as the size and mix of parental benefits and childcare services. The degree of institutionalization is highest in group one (Denmark, Sweden, Finland, Estonia, Latvia) and lowest in group five (Italy, Malta, Cyprus, Portugal, Spain, Greece). The groups in between contain the following countries: France, Belgium (group two); Germany, Luxembourg, Austria, Hungary, Czech Republic, Poland, Lithuania, Slovenia (group three); The Netherlands, the United Kingdom, Ireland (group four).

The further clusters of family policy groups by Mischke (2011) and Ferragina (2019) are used for robustness checks later on. Information about these family policy groups can be found in Appendix C.

Further research in this field evaluates countries family policies regarding different criteria. Abendroth, van der Lippe and Maas (2012) rate countries according to their availability of publicly funded childcare, effectiveness of parental leave, child benefits and availability of part-time work. For each of those four criteria, the authors generate an index for 23 European countries. The actual values of the indices used for the analyses are shown in Appendix C. Further, to check whether my results of model (1) and model (2) are robust, I will use Abendroth, van der Lippe and Maas' (2012) indices instead of country fixed-effects and public spending on childcare, respectively. Other studies (e.g. De Henau, Meulders and O'Dorchai's, 2007a, 2007b; Kangas & Rostgaard, 2007) generate indices for only childcare and parental leave. Abendroth, van der Lippe and Maas (2012) evaluate more countries than the other studies, for which reason using those indices generates the largest sample. Since their indices cover four possibilities of family policies and produce the largest sample, I use Abendroth, van

der Lippe and Maas' (2012) indices in my regressions. Kangas and Rostgaard's (2007) and De Henau, Meulders and O'Dorchai's (2007a, 2007b) policy indices are used for robustness checks. Further information about the generation of these indices can be found in Appendix C.

### 3.3 Data Analysis

Table 1 shows the means of the work values and gender role attitudes for women and men across birth cohorts. Most striking are the proportions of women born after 1956 agreeing with the two statements '*Being a housewife is fulfilling*' and '*Working mother warm with children*'. In contrast, egalitarian views, work values and ideal numbers of children change over birth cohorts. 'Good pay' and 'good hours' are more relevant for younger generations of both genders and ideal number and actual number of children is lower for younger people. The younger the respondent, the further is the diverge between actual and ideal number of children. Yet, the youngest two birth cohorts might not have completed their fertility at the time of the survey. The ideal number of children increased for birth cohorts born after 1975, but the sample in this age group is very small and might therefore not be representative of the population.

**Table 1: Average Gender Role Attitudes and Work Values across Birth Cohorts**

Birth cohort	Women					Men				
	<1945	1946-55	1956-65	1966-75	>1975	<1945	1946-55	1956-65	1966-75	>1975
<b>Gender role attitudes</b>										
Working mother warm with children	0.77	0.83	0.84	0.84	0.84	0.71	0.77	0.78	0.80	0.79
Being a housewife is fulfilling	0.57	0.56	0.52	0.51	0.51	0.63	0.62	0.58	0.56	0.57
Scarce jobs should go to men first	0.25	0.19	0.14	0.12	0.11	0.24	0.21	0.20	0.17	0.17
Both spouses should contribute to income	0.84	0.84	0.82	0.83	0.89	0.79	0.81	0.80	0.81	0.86
<b>Important aspects of the job</b>										
Good pay	0.73	0.75	0.78	0.82	0.83	0.77	0.81	0.83	0.85	0.87
Good hours	0.50	0.51	0.55	0.58	0.57	0.42	0.45	0.47	0.49	0.52
Useful job to society	0.45	0.44	0.41	0.38	0.38	0.42	0.41	0.38	0.35	0.34
Meeting people	0.53	0.51	0.51	0.51	0.53	0.42	0.44	0.44	0.44	0.45
Competition OK	0.68	0.65	0.64	0.66	0.65	0.69	0.69	0.68	0.70	0.69
<b>Number of children</b>										
Actual	2.35	2.08	1.93	1.13	0.29	2.18	2.00	1.71	0.68	0.10
Ideal	2.61	2.68	2.53	2.53	2.75	2.47	2.42	2.48	2.53	2.70

*Source:* Proportions of respondents computed from wave 3 (1999) and wave 4 (2008) of the EVS. Individuals aged 18-64 across 25 countries from the European Union. Students and Retirees are excluded. With approximately 3500-6000 observations by cohort, except cohorts born before 1945 with approximately 1500 observations for women and men.

Since egalitarian views become more common over younger birth cohorts, I expect the influence of anti-egalitarian views on individual women’s employment to be lower than in Fortin’s sample. Traditional gender role attitudes and feeling of ‘mother’s guilt’ do not change over birth cohorts, thus, I expect similar results than Fortin (2005) finds in her analysis for the previous decade.

Further, Table 1 displays that gender role attitudes and work values differ between women and men. Men prefer traditional gender roles to a higher extent than women do and consider ‘good pay’ and ‘competition’ more important than women. Women, in contrast, value ‘good hours’ and ‘meeting people’ more than men. Overall, gender differences become smaller for younger birth cohorts.

**Table 2: Average Gender Role Attitudes across Childless Women and Mothers**

	1999		2008	
	Childless women	Mother	Childless women	Mother
Working mother warm with children	0.84	0.81	0.86	0.84
Being a housewife is fulfilling	0.46	0.55	0.46	0.54
Scarce jobs should go to men first	0.09	0.15	0.07	0.13
Both spouses should contribute to income	0.85	0.77	0.91	0.85

Source: Proportions of respondents computed from wave 3 (1999) and wave 4 (2008) EVS. Individuals are aged 18-40 across 25 countries within the European Union. Students and retirees are excluded. With approximately 2500-3800 observations by cohort.

Table 2 displays average gender role attitudes for childless women and mothers in 1999 and 2008. Differences between the two types of women are very stable across the two waves. In both waves of the EVS, mothers show more traditional gender role attitudes and anti-egalitarian views than childless women. Also, fewer mothers agree with the statement ‘*Working mother warm with children*’. As stated above, I expect family policies, which facilitate the compatibility of working and child-rearing for mothers, to change cultural attitudes towards working women and decrease the feeling of ‘mother’s guilt’. Overall, those descriptive statistics show that having children tends to bring women closer to traditional gender roles, or those with traditional gender roles are more likely to have children. Holding traditional gender role attitudes might correlate with the implications of specific family policies that are in place in a respective country. The differences in gender role attitudes between childless women and mothers corroborate my supposition that including family policies in the analysis of mother’s labor supply is inevitable.

Table 3 shows average gender role attitudes of mothers across European family policy groups, generated by Bahle (2009). If they differ significantly from one another, it may be a sign of a correlation between gender role attitudes and family policies. However, the results are different from my expectations: While I expected that gender role attitudes would become more traditional with less institutionalization (from group one to group five), the results do not show such a relationship. Since previous research revealed that norms and cultural beliefs develop slower than economic conditions (Reimers, 1985; Voigtländer & Voth, 2012), I assume that similar results across the family policy groups are rooted in differences across the countries within the same family policy groups.

**Table 3: Average Gender Role Attitudes across Bahle's Family Policy Groups**

Bahle's (2009) family policy groups	Gender role attitudes			
	Working mother	Housewife	Scarce jobs	Both income
1: DK, EE, FI, LV, SE	0.86	0.50	0.08	0.87
2: BE, FR	0.89	0.56	0.13	0.89
3: AT, CZ, DE, HU, LT, PL, SI	0.79	0.54	0.13	0.87
4: IE, NL, UK	0.84	0.61	0.06	0.64
5: IT, MT, PT, ES	0.80	0.55	0.14	0.91

Source: Proportions of respondents computed from wave 4 (2008) EVS. Mothers aged 18-40, students and retirees excluded. Countries sorted according to Bahle's (2009) country division regarding their family policies. With approximately 300-1150 observations by group.

Table 4 presents average gender role attitudes of mothers across individual countries. Egalitarian attitudes (low agreement with '*scarce jobs should go to men first*') can mostly be found in the Nordic countries in family policy group one. Estonia and Latvia belong to group one since their policies encounter equality and working women. However, those two countries, as well as other former communist countries, show rather anti-egalitarian views and tend to prefer traditional gender roles. This is in line with previous research which states that norms and cultural beliefs develop slower than economic conditions (Reimers, 1985; Voigtländer & Voth, 2012). Average agreement with '*Both spouses should contribute to income*' is high in most countries, however, the Netherlands shows very low averages in comparison to the other countries.

Mother's guilt (low agreement with the statement '*Working mother warm with children*') seems to be highest in Italy, Austria, and Poland. Lowest averages can be found in Finland, Denmark, Sweden, France, and Slovenia. The average agreement with the statement '*Being a housewife is fulfilling*' show lowest results in Denmark, Latvia, and Germany, and highest



averages in Lithuania, Malta, Finland, the United Kingdom, and Ireland. Those countries are spread over multiple family policy groups by Bahle (2009).

Overall, no clear patterns can be found across Bahle's (2009) country groups, because some of the lowest and highest averages are spread over the different groups. Instead, mostly countries with similar historical and political backgrounds show similar attitudes. Since those countries belong to different family policy groups nowadays, it suggests that attitudes adapt slower than policy changes. The following analysis will reveal whether I find evidence for correlations between current family policies, gender role attitudes, and female labor supply or whether the correlations are lagged.

**Table 4: Average Gender Role Attitudes across Countries**

Bahle's country Group	Country	Gender role attitudes			
		Working mother	Housewife	Scarce jobs	Both income
Group 1	DK	0.92	0.40	0.02	0.77
	EE	0.82	0.63	0.12	0.88
	FI	0.97	0.70	0.01	0.72
	LV	0.86	0.40	0.13	0.93
	SE	0.93	0.43	0.05	0.95
Group 2	BE	0.84	0.54	0.18	0.88
	FR	0.93	0.57	0.10	0.90
Group 3	AT	0.75	0.53	0.14	0.82
	CZ	0.80	0.48	0.24	0.93
	DE	0.81	0.42	0.08	0.90
	HU	0.81	0.45	0.11	0.94
	LT	0.78	0.82	0.07	0.79
	PL	0.69	0.59	0.16	0.87
	SI	0.94	0.53	0.07	0.85
Group 4	IE	0.84	0.68	0.06	0.71
	NL	0.85	0.44	0.02	0.45
	UK	0.85	0.68	0.08	0.73
Group 5	IT	0.72	0.45	0.16	0.91
	MT	0.78	0.75	0.21	0.85
	PT	0.81	0.47	0.13	0.97
	ES	0.86	0.48	0.07	0.90

Source: Proportions of respondents computed from wave 4 (2008) EVS. Mothers aged 18-40, students and retirees excluded. Countries sorted according to Bahle's (2009) country division regarding their family policies. With approximately 100-200 observations by country.

## 4 Analysis and Discussion

Throughout this Chapter, I will, at times, use the terms ‘effect’ or ‘impact’. However, this should be interpreted more as a correlation, because, as mentioned before, any causal interpretation should be made with some caution.

### 4.1 Determinants of an Individual’s Employment Status

The first aim of this paper is to examine whether gender role attitudes and work values impact individual women’s labor supply. For this empirical analysis at the individual level, I use a Probit Model since the dependent variables are binary. The tables in this part report the marginal effects of gender role attitudes, work values, volunteering activities and the control variables (e.g. education, age, marital status, presence of children) on the probability of being employed and on working part-time. Table 5 provides marginal effects of the Probit analysis on individual’s employment status. The Z-values inside the parentheses show standard errors from robust clustering by country. Column (1) shows, as expected, that education and not having children have strong positive effects on individual women’s employment status. Being divorced or separated significantly increases employment, whereas marriage has a negative effect on women’s employment, although this effect is not significant. For men (column (7)), however, the marriage estimate reveals a significant, large and positive impact on employment status. In columns (2) and (3), I add gender role attitudes, work values, and volunteering activities to my basic Probit Model. I do not use country- and year-fixed effects in column (2), whereas in column (3) I do. Because the coefficients are mostly lower when I include the fixed effects, I assume that a part of the variation across estimates is due to cross-country differences. Therefore, I include fixed effects for country-rounds in all further regressions. In column (4), I additionally control for men’s average gender role attitudes.

All four gender role attitudes show the expected effects: traditional gender roles, measured with ‘*Scarce jobs should go to men first*’ and ‘*Being a housewife is fulfilling*’ affect women’s employment status negatively and ‘*Both spouses should contribute to income*’ show the expected positive effect on women’s employment. Not having an inner conflict (‘*Working*

*mother warm with children*’) has the highest positive impact on women’s employment status, which underlines the importance of accounting for ‘mother’s guilt’ when evaluating women’s employment status. Agreement with this statement increases a woman’s probability of employment by around 11 percent (column (3)). Controlling for men’s average gender role attitudes in column (4) does not affect the significance of the effects of an individual woman’s attitudes. This result is in line with Fortin’s (2005) results and contradicting to Charles, Guryan and Pan (2009), who find evidence that across states in the US gender role attitudes of the median man predict female labor market outcomes. However, the divergence in results across studies might depend on the respective country selection. While Fortin considers the OECD countries and I use 26 European countries, Charles, Guryan and Pan (2009) only use data from the United States.

In column (5), I use a sample of immigrant women, which is very small. The effects of ‘*Being a housewife is fulfilling*’ and ‘*Working mother warm with children*’ on female employment still show significant effects, which are even higher than for the full sample in columns (2) to (4). A possible explanation might be that immigrant women have a higher likelihood of coming from societies with more traditional gender role attitudes. As multiple authors suggest, cultural preferences and norms play an important role in forming opinions about the role of a woman in the family as well as whether a woman is supposed to supply market or household work (e.g. Reimers, 1985; Fernández & Fogli, 2009; Buser, Niederle & Oosterbeek, 2014). The results further substantiate previous literature which shows that gender role attitudes develop early in life (e.g. Vella, 1994; Fernández, Fogli & Olivetti, 2004).

In the last column, I conduct the same regression on a sample of only men. Anti-egalitarian views (‘*Scare jobs should go to men first*’) is the only gender role attitude which shows a significant negative, but small, effect on men’s employment status. The other gender role attitudes show no effect on men’s employment and, therefore, indicate that no other economic effects are captured by the gender role attitudes.

Surprisingly, the only significant female employment effect among the included work values is a positive impact of ‘*competition is good*’. For men, this effect is highly significant and larger. This is in line with my expectations that competitive people invest more effort into work and, therefore, increase their labor supply positively. Volunteering activities affect labor supply in the expected direction, however, only volunteering activities with ‘leadership-building skills’ show significant high positive results. For immigrant women (column (5)), volunteering is insignificant and for men (column (6)) its effect is lower than for women. The differences in the explanatory power of work values for women and men confirm previous

research which shows that women and men have different preferences regarding their work (e.g. Fortin, 2008; Croson & Gneezy, 2009; Buser, Niederle & Oosterbeek, 2014; Niederle and Vesterlund, 2007).

Table 6 displays the marginal effects on part-time work status among working women and men. Higher education levels, being divorced and not having children makes it less likely to work part-time than full-time. As expected, *'Being a housewife is fulfilling'* increases the probability of part-time work. Agreement with *'Both spouses should contribute to income'* decreases the probability of working part-time and agreement with *'Working mother warm with children'* shows weakly significant, negative effects on part-time work. Controlling for men's average gender role attitudes does not change those effects (column (4)). *'Good hours'* and volunteering in religious or cultural institutions increases the probability of working part-time by 4 percent each, whereas *'good pay'* decreases this probability by 4 percent. Since volunteering in religious and cultural institutions can be regarded as an altruistic activity, it is in line with Fortin's (2006) results, which suggest that altruistic rewards are traded off for pay. The sample of immigrant women in part-time work was too small to perform this regression and, therefore, is left out. Column (5) shows that gender role attitudes do not influence men's probability of working part-time, except for *'Being a housewife is fulfilling'*, which increases men's probability of part-time work by 0.7 percent.

Overall, the results from the Probit analysis of individual women's employment status and the probability of part-time work are very similar to the findings of Fortin (2005) and, therefore, substantiate that gender role attitudes are an important determinant of female labor force participation. Surprisingly, the explanatory power of many variables, e.g. agreement with *'Scarce jobs should go to men first'* is almost identical to Fortin's findings. However, the explanatory power of *'mother's guilt'* is lower in my sample: Agreement with *'Working mother warm with children'* increases women's probability of employment by 11 percent in my sample (column (3)), whereas Fortin estimated 14.7 percent. Also, agreeing with *'Being a housewife is fulfilling'* has an explanatory power of -10.6 percent (column (3)) in my analysis, which is higher compared to Fortin's results of -8.4 percent.

**Table 5: Determinants of Employment Status: Marginal Effects from a Probit Model**

Sample	Women				Immigrant women	Men	
	(1)	(2)	(3)	(4)			
Education (primary omitted)							
Secondary	0.128*** (0.0129)	0.106*** (0.00991)	0.110*** (0.0125)	0.113*** (0.0122)	0.113*** (0.0121)	-0.0967 (0.128)	0.0644*** (0.0133)
Upper secondary	0.234*** (0.0188)	0.218*** (0.00864)	0.203*** (0.0175)	0.210*** (0.0175)	0.204*** (0.0174)	0.119* (0.0715)	0.102*** (0.0123)
Tertiary	0.304*** (0.0216)	0.274*** (0.0108)	0.261*** (0.0208)	0.269*** (0.0206)	0.263*** (0.0208)	0.0815 (0.114)	0.135*** (0.00919)
Age	0.00254* (0.00131)	0.00255*** (0.000316)	0.00271** (0.00127)	0.00260** (0.00127)	0.00272** (0.00128)	0.00201 (0.00261)	-0.00169*** (0.000442)
Married	-0.0154 (0.0138)	-0.0273*** (0.00916)	-0.0101 (0.0133)	-0.00350 (0.0125)	-0.0103 (0.0133)	-0.0594 (0.0561)	0.0793*** (0.00906)
Divorced, seperated	0.0647*** (0.0129)	0.0596*** (0.0126)	0.0603*** (0.0123)	0.0590*** (0.0127)	0.0604*** (0.0123)	0.190** (0.0910)	-0.00788 (0.00890)
No children	0.154*** (0.0205)	0.125*** (0.0103)	0.151*** (0.0200)	0.146*** (0.0200)	0.151*** (0.0199)	0.0152 (0.0797)	-0.0243** (0.0100)
Gender role attitudes							
Scarce jobs should go to men first		-0.0907*** (0.00905)	-0.0679*** (0.0134)	-0.0653*** (0.0134)	-0.0668*** (0.0134)	0.0318 (0.0575)	-0.0273*** (0.00694)
Working mother warm with children		0.116*** (0.00854)	0.110*** (0.0128)	0.0969*** (0.0130)	0.110*** (0.0128)	0.170*** (0.0547)	0.00267 (0.00761)
Being a housewife is fulfilling		-0.103*** (0.00666)	-0.106*** (0.00892)	-0.0954*** (0.00864)	-0.107*** (0.00839)	-0.151** (0.0599)	-0.00525 (0.00598)
Both spouses should contribute to income				0.104*** (0.0125)			
Important in a job							
good pay		-0.000256 (0.00843)	0.00357 (0.0105)	-0.000363 (0.0105)	0.00422 (0.0105)	0.0260 (0.0902)	0.0189** (0.00845)
good hours		-0.00858 (0.00683)	0.00318 (0.00835)	0.00397 (0.00834)	0.00318 (0.00831)	-0.0546 (0.0501)	0.00348 (0.00590)
Competition is OK		0.0352*** (0.0125)	0.0395** (0.0186)	0.0360* (0.0190)	0.0385** (0.0186)	0.0809 (0.102)	0.0651*** (0.0136)
Volunteer in organizations with leadership-building skills		0.136*** (0.0128)	0.113*** (0.0137)	0.113*** (0.0139)	0.113*** (0.0136)	-0.0328 (0.211)	0.0598*** (0.00667)
Philanthropic		-0.000685 (0.0147)	-0.0132 (0.0136)	-0.0120 (0.0133)	-0.0127 (0.0135)	-0.0570 (0.129)	0.00820 (0.00675)
Religious and Cultural		-0.0137 (0.0115)	-0.0107 (0.0160)	-0.00375 (0.0159)	-0.0109 (0.0161)	-0.0920 (0.150)	0.0210* (0.0123)
Men's averages							
Men's average housewife					0.231 (0.174)		
Men's average Scarce jobs					0.0283 (0.120)		
No. Countries	25	25	25	25	25	13	25
No. Observations	19,366	19,366	19,366	19,013	19,366	340	15,513

Standard errors in parentheses

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

Notes: I use the sample of women aged 18-64. The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Country and time dummies are included in all regressions, except for column (2), where country dummies are excluded. Z-values from robust clustering by country in parentheses.

**Table 6: Determinants of Incidence of Part-time Work among Employees: Marginal Effects from a Probit Model**

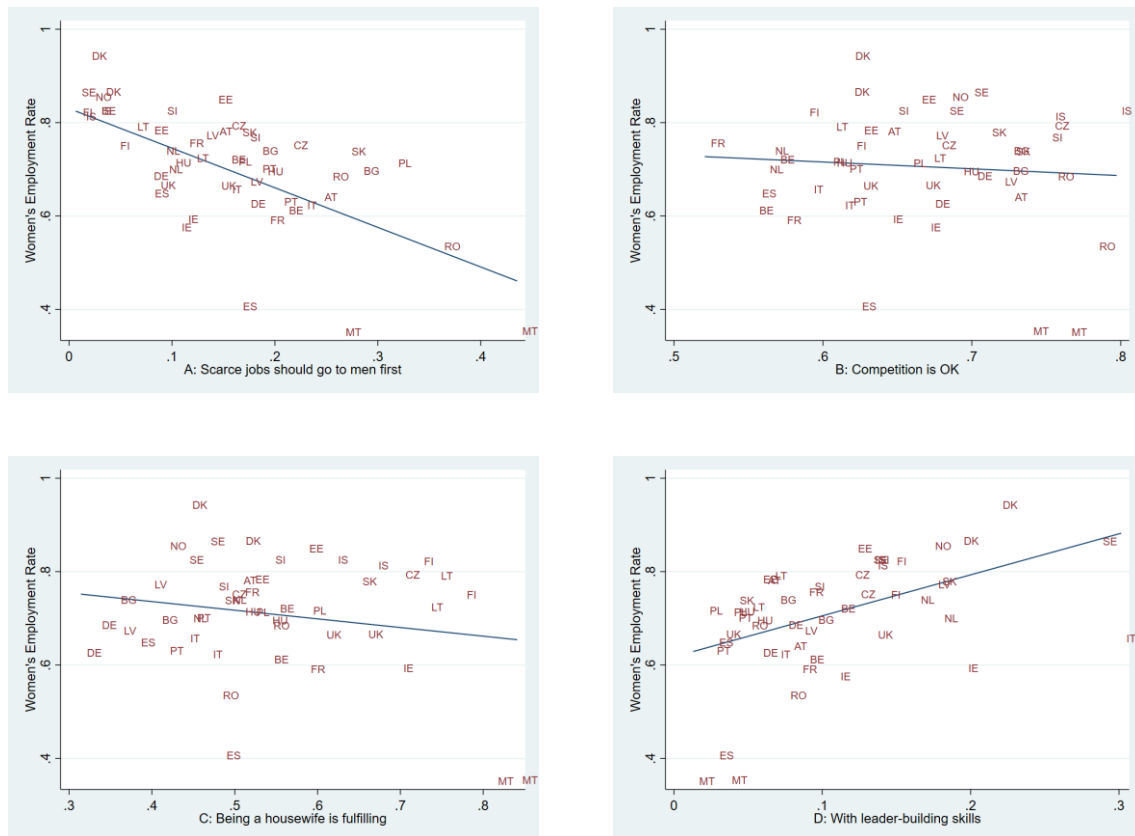
Sample	Women				Men
	(1)	(2)	(3)	(4)	(5)
Education (primary omitted)					
Secondary education	-0.0350*** (0.0129)	-0.0340*** (0.0129)	-0.0332** (0.0129)	-0.0333*** (0.0125)	-0.0165*** (0.00572)
Upper secondary education	-0.0539*** (0.00867)	-0.0531*** (0.00923)	-0.0538*** (0.0101)	-0.0526*** (0.00905)	0.00469 (0.00588)
Tertiary education	-0.0614*** (0.0220)	-0.0592** (0.0235)	-0.0598** (0.0240)	-0.0588** (0.0230)	0.00457 (0.00893)
Age	-0.00102* (0.000591)	-0.00109* (0.000605)	-0.00104* (0.000603)	-0.00109* (0.000607)	0.000218 (0.00174)
Married	0.0111 (0.0124)	0.00930 (0.0119)	0.00715 (0.0116)	0.00913 (0.0118)	-0.0260*** (0.00491)
Divorced, seperated	-0.0616*** (0.0118)	-0.0605*** (0.0116)	-0.0602*** (0.0116)	-0.0606*** (0.0116)	-0.0145*** (0.00484)
No children	-0.0762*** (0.0265)	-0.0744*** (0.0260)	-0.0762*** (0.0259)	-0.0745*** (0.0260)	0.0128*** (0.00443)
Gender role attitudes					
Scarce jobs should go to men first		-0.00886 (0.0115)	-0.0102 (0.0125)	-0.00807 (0.0107)	0.00553 (0.00520)
Working mother warm with children		-0.0267* (0.0138)	-0.0266* (0.0138)	-0.0269* (0.0139)	-0.000426 (0.00342)
Being a housewife is fulfilling		0.0279*** (0.00829)	0.0254*** (0.00834)	0.0276*** (0.00818)	0.00695** (0.00286)
Both spouses should contribute to income			-0.0257*** (0.00876)		
Important in a job good pay		-0.0415*** (0.00650)	-0.0402*** (0.00675)	-0.0414*** (0.00649)	-0.0189*** (0.00551)
good hours		0.0409*** (0.00741)	0.0419*** (0.00783)	0.0414*** (0.00767)	0.00173 (0.00378)
Competition is OK		-0.0175 (0.0145)	-0.0166 (0.0147)	-0.0179 (0.0143)	-0.00536 (0.00616)
Volunteer in organizations					
Volunteer with leadership-building skills		-0.00912 (0.0123)	-0.00766 (0.0126)	-0.00905 (0.0122)	-0.00264 (0.00450)
Volunteer Philanthropic		0.00694 (0.0133)	0.00889 (0.0124)	0.00722 (0.0134)	0.00144 (0.00672)
Volunteer Religious and Cultural		0.0422** (0.0170)	0.0411** (0.0171)	0.0423** (0.0171)	0.0172*** (0.00603)
Men's averages					
Men's average housewife				0.0344 (0.139)	
Men's average Scarce jobs				-0.0679 (0.137)	
No. Countries	25	25	25	25	25
Observations	12,943	12,943	12,749	12,943	11,947

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: I use the sample of women aged 18-64. The independent variable is a binary variable equal to 1 if the individual is employed in part-time and 0 if the individual is employed in full-time or self-employed. Country and time dummies included in all regressions. Z-values from robust clustering by country in parentheses.

## 4.2 Determinants of Employment Rates across Countries

The second aim of this paper is to investigate whether social norms can explain country differences in women's employment rates. Figure 1 presents women's average gender role attitudes, competitiveness, and volunteering in 'leadership-building organizations' and their relation to women's time- and country-specific employment rates. The figure displays countries by their acronyms, which can be found in Appendix A. In panel A, most country's average employment rates of women line up very well on the negative correlation line of 'Scarce jobs should go to men first'. Malta and Spain are the exceptions in all four panels because their female average employment rates (even though for Spain only in 1999) are far below the ones of the other European countries.



Notes: I use the sample of women aged 18-64. To obtain employment rates at the country level, I aggregate individual employment status' (see Appendix A).

**Figure 1: Women's Employment Rates Across Countries**

Panel B shows a different picture than Fortin's (2005) study: While she finds a positive relationship between '*Competition is good*' and women's employment rates, the relationship is slightly negative in my analysis. However, the countries are not aligned close to the line but are very spread out. This suggests that preferring competition does not correlate with female labor force participation in the European sample. Panels C and D show the expected relationships and are in line with Fortin's (2005) findings across OECD countries, again: Panel C shows a negative relationship between female employment rates and '*Being a housewife is fulfilling*'. In panel D the positive relationship between women's employment and volunteering in 'leadership building organizations' is expressed and, as in panel A, the countries line up quite well on the line.

In Table 7, I investigate the effects of gender role attitudes and work values on women's employment rates on a country level more formally. Column (1) shows the effects of education levels only. In contrast to Fortin (2005), who finds largely significant impacts, my results suggest that only upper secondary education has a significant positive impact on employment rates. In column (2), I add women's average gender role attitudes and work values, which reduce the effects of education and suggest a correlation between education and egalitarian views. Adding men's averages in column (3) increases the effects of secondary and upper secondary education, whereas it reduces the effects of tertiary education. Overall, educational levels seem to have less explanatory power in my sample. This may be due to the fact that differences in education between the genders became even closer in the last years and women have exceeded men in education (Goldin, Katz & Kuziemko, 2006). Including women's or men's average gender role attitudes and work values increases the adjusted R-squared of the OLS-regression from 0.26 to 0.53-0.67, which seems quite high for such a small sample. Thus, it might reflect other unobservable differences, which are picked up by the gender role attitudes.

Due to the low number of observations and the fact that some countries are only included in one wave, I do not use country fixed effects. Alternatively, to control for country-specific institutions, I include a variable for public expenditure on childcare (OECD, 2019b) in columns (4) and (5). In contrast to Fortin's results, those expenditures only show a weak significant effect in column (4) and no significant effect when work values and gender role attitudes are included in the regression in addition (column (5)). However, including both average gender role attitudes and expenditures on childcare diminishes both effects and reveal a potential correlation between childcare expenditures and gender role attitudes.



**Table 7: Determinants of Women's Employment Rates across Countries**

	(1)	(2)	(3)	(4)	(5)	(6)
Women's education (primary omitted)						
Secondary	0.123 (0.0839)	0.0796 (0.0789)	0.158* (0.0886)	0.107 (0.0878)	0.0118 (0.0759)	0.0475 (0.0724)
Upper Secondary	0.376** (0.149)	0.186 (0.115)	0.394** (0.159)	0.286** (0.124)	0.0449 (0.108)	0.232** (0.106)
Tertiary	0.452 (0.269)	0.205 (0.177)	0.279 (0.183)	0.515** (0.228)	0.364 (0.251)	0.309 (0.188)
Log of public expenditures on childcare				0.0509* (0.0250)	0.0187 (0.0320)	
Averages by country		Women's	Men's		Women's	Women's lagged
Gender role attitudes						
Competition is OK		0.105 (0.181)	-0.00678 (0.278)		0.432** (0.154)	-0.0710 (0.234)
Being a housewife is fulfilling		-0.113 (0.105)	-0.0959 (0.145)		-0.0177 (0.129)	-0.0736 (0.124)
Scarce jobs should go to men first		-0.531*** (0.166)	-0.502*** (0.122)		-0.143 (0.228)	-0.321** (0.145)
Volunteer in organizations						
With leadership-building skills		0.994** (0.388)	0.310 (0.293)		1.034** (0.457)	0.753* (0.377)
Religious and cultural		-0.525*** (0.132)	-0.356* (0.207)		-0.444*** (0.153)	-0.745*** (0.266)
Time trend	0.00958 (0.0262)	0.0143 (0.0302)	-0.00664 (0.0343)	-0.000789 (0.0236)	0.0412 (0.0310)	-0.00251 (0.0317)
Observations	51	49	49	43	41	49
R-squared	0.260	0.671	0.531	0.337	0.591	0.609

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Notes: The women's employment rates by country are reported in Appendix A. T-values from robust clustering by country in parentheses. The public expenditures on formal day-care and pre-primary education per child are from OECD (2019b). The lagged average attitudes by country are lagged by one wave (about 5-10 years) from the employment rates.

To address the problem of reverse causality, I use lagged values of women's attitudes in column (6). The only three variables which pass the reverse causality test are '*Scarce jobs should go to men first*' and volunteering in religious and cultural organizations, which influence female employment rates negatively, as well as volunteering with 'leadership-building skills', which increase female employment rates. The results from other controls are not always significant. The direction of the correlation is in line with my expectations: competitiveness increases women's employment rates, whereas traditional gender roles decrease them. Overall, my results are consistent with Fortin's (2005) findings, even though my results are not always significant and at the same level. As an example, while Fortin (2005) measures, that an increase of 10

percent in the proportion of country to men who agree that '*Scare jobs should go to men first*' reduces women's employment rates by 5-9 percent, it leads to a diminution in women's employment rates by 3-5 percent in my sample.

### 4.3 Heterogeneous Effects of Gender Role Attitudes across Family Policy Groups

The third objective of this study is to identify whether gender role attitude effects on individual women's labor market participation are heterogeneous across different family policy groups. Table 8 and 9 show how gender role attitudes and work values affect a mother's labor market participation and part-time work, respectively, separately for Bahle's (2009) five family policy groups. Since the dependent variables are binary, I use a Probit Model and the tables report the marginal effects.

Column (1) displays the results for all countries, considered by Bahle (2009), together. While higher education shows significant positive effects for all country groups, marital status does only influence mother's labor supply in strategy group four (Ireland, the United Kingdom, the Netherlands), where both being married and being divorced or separated influences mother's labor supply positively. I expected being married to decrease mother's labor supply, and since the employment status includes part-time, full-time and self-employed mothers, it is difficult to interpret the result. However, a possible explanation for this might be that married mothers offer more part-time work, whereas divorced mothers work full-time more often since they are the only earner of the family and have a higher need for a sufficient income. The results from table 9, which shows the determinants of mother's part-time work, support this interpretation, even though the differences were statistically insignificant: In group four (column (5)) marriage increases the likelihood of part-time work, whereas being divorced decreases this probability.

Work values show only rarely significant impacts on mother's labor supply. 'Good pay' shows significant negative effects for individuals in all countries together (column (1)) and for group five (Italy, Malta, Portugal, Spain; column (6)). A possible explanation is the inclusion of part-time working women, since valuing 'good pay' decreases the probability of working part-time by 13 percent, whereas the probability of employment decreases by only 6.3 percent. Competitiveness shows significant effects only in country group four (Ireland, the UK, and the

Netherlands), where it increases the probability of employment by 21.8 percent. As Figure 1 suggests, average competitiveness does not seem to correlate much with women's employment rates. However, it seems like in countries without state interference into the family-work relationship (e.g. group four), being competitive influences mother's decisions about their labor supply to a higher extent than in the other European countries.

Column (1) also displays significant coefficients for all gender role attitudes. Comparing the results from table 5, which considers both childless women and mothers together, and the effects for only mothers in table 8 (column (1)), one can observe that the effects of gender role attitudes are higher for only mothers than for childless women. This suggests that gender role attitudes are especially important for mother's decisions about their labor supply. While it becomes more and more common across Europe for childless women to work, it seems like bearing children brings women closer to traditional gender roles. As already shown in table 2, the average gender role attitudes differ among mothers and childless women and mothers prefer more traditional gender roles to a higher extent. An explanation may be that in most countries it is still common that within a family the men is the main breadwinner and childcare is undertaken by the mother.

Therefore, a mother's decision depends on her possibilities to substitute childcare with market-work. Since mothers face limitations in those possibilities, their gender role attitudes and decisions about labor market participation might depend on the country's family policy. In many of the European countries family policies do not support alternative family models, like the dual-earner model and, thus, do not influence mother's thoughts about the traditional gender roles. Women without children do not face those limitations and, thus, their gender role attitudes might matter less for their labor market decisions.

While *'Scarce jobs should go to men first'* shows significant negative results solely for group three (Germany, Luxembourg, Austria, Hungary, Czech Republic, Poland, Lithuania, Slovenia) and group four (Ireland, the UK, the Netherlands), all further gender role attitudes and the inner-conflict variable show the expected results for all country groups. However, the extent of the impacts varies across the groups. Overall, gender role attitudes influence mother's labor force participation strongest in group four (Ireland, the UK, and the Netherlands) and lowest in group one (Denmark, Sweden, Finland, Estonia, and Latvia). Agreeing with the statement *'Working mother warm with children'* increases individual women's labor supply by 8.9 percent in group one and by 27.2 percent in group four. Over all countries, the agreement with this statement influences a mother's decisions by 15.9 percent. The statement *'Being a housewife is fulfilling'* shows differing results as well: Agreeing with it in a country of group

one decreases individual mother's labor supply by 8.8 percent and by 17.2 percent in group four.

To control for the significance of those results, column (7) shows the interactions of gender role attitudes and family policy groups. The coefficients show that in comparison to the reference group (group one: Denmark, Sweden, Finland, Estonia, and Latvia), the correlations are higher in the other groups. The results are almost never significant. However, this might be an issue of statistical power, because the number of countries included in my test of heterogeneity is limited. Considering the interaction terms in table 9 for part-time work, the interactions of *'Working mother warm with children'* and the family policy group are highly significant. It shows that for group two and, to a much higher extent, group four, the probability of working part-time instead of full time is higher than in group one when the woman agrees with the statement *'Working mother warm with children'*. This is in line with previous results, which show, for example, that the Netherlands has a high rate of women working part-time (Jaumotte, 2003). In contrast, mothers in group three and group five have a lower probability of working part-time, when they agree with this statement.

Overall, my results suggest that family policies influence the importance of gender role attitudes for mother's labor market decisions: State interference into the family-work relationship is highest in group one and lowest in group four and five (Bahle, 2009) and, thus, family policies enhance egalitarian-views between genders to the highest extent in the Nordic countries and to a comparably low extent in the UK and Ireland. Since the effects of gender role attitudes vary across country groups, I suppose that different policy strategies affect gender role attitudes and labor market outcomes.

**Table 8: Determinants of Employment Status across Bahle's Family Policy Groups:  
Marginal Effects from a Probit Model**

Sample	All Groups (1)	Group 1 (2)	Group 2 (3)	Group 3 (4)	Group 4 (5)	Group 5 (6)	All Groups (7)
Education (primary omitted)							
Secondary	0.0965* (0.0514)	0.0893* (0.0530)	0.240*** (0.00629)	0.0393 (0.0918)	0.183*** (0.0476)	0.147 (0.129)	0.0878* (0.0473)
Upper secondary	0.212*** (0.0369)	0.0607* (0.0330)	0.394*** (0.0550)	0.190** (0.0743)	0.188*** (0.0179)	0.210*** (0.0359)	0.195*** (0.0344)
Tertiary	0.308*** (0.0482)	0.148** (0.0624)	0.498*** (0.0753)	0.298*** (0.0988)	0.195*** (0.0507)	0.293*** (0.0932)	0.289*** (0.0467)
Age	0.0180*** (0.00279)	0.0223*** (0.00268)	0.0118*** (0.00140)	0.0257*** (0.00351)	0.00803* (0.00424)	0.00329 (0.00546)	0.0182*** (0.00287)
Married	-0.0104 (0.0270)	-0.0320 (0.0343)	0.0667 (0.0468)	-0.0121 (0.0401)	0.151* (0.0810)	-0.0842** (0.0401)	-0.00455 (0.0252)
Divorced, seperated	0.0577* (0.0318)	0.0676 (0.0621)	-0.00913 (0.103)	0.0720 (0.0628)	0.172* (0.0998)	0.0189 (0.0358)	0.0617* (0.0324)
Gender role attitudes							
Scarce jobs should go to men first	-0.0899*** (0.0253)	-0.0807 (0.0557)	-0.0747 (0.0598)	-0.0899** (0.0430)	-0.205* (0.115)	-0.0408 (0.0449)	-0.0928 (0.0664)
Working mother warm with children	0.159*** (0.0292)	0.0888*** (0.0235)	0.154*** (0.0322)	0.134*** (0.0299)	0.272*** (0.0731)	0.194 (0.132)	0.180*** (0.0474)
Being a housewife fulfilling	-0.125*** (0.0179)	-0.0881** (0.0373)	-0.131** (0.0664)	-0.108*** (0.0316)	-0.172*** (0.0246)	-0.154*** (0.0538)	-0.0759** (0.0354)
Important in a job							
good pay	-0.0629** (0.0307)	-0.0691 (0.0754)	0.00655 (0.0153)	0.00867 (0.0370)	-0.0569 (0.106)	-0.195*** (0.0738)	-0.0497 (0.0313)
good hours	0.00300 (0.0215)	0.0439 (0.0298)	0.00442 (0.0488)	-0.0372 (0.0293)	0.0972 (0.0811)	0.0211 (0.0638)	0.00498 (0.0217)
Competition is OK	0.0353 (0.0340)	0.108 (0.0712)	0.0795 (0.140)	0.0168 (0.0568)	0.218*** (0.0819)	-0.0208 (0.0981)	0.0439 (0.0333)
Interaction Effects							
Scarce jobs x Group 2							-0.0119 (0.0747)
Scarce jobs x Group 3							0.00172 (0.0782)
Scarce jobs x Group 4							-0.0745 (0.113)
Scarce jobs x Group 5							0.0295 (0.0890)
Warm relationship x Group 2							0.103 (0.0914)
Warm relationship x Group 3							-0.0591 (0.0503)
Warm relationship x Group 4							-0.0128 (0.0653)
Warm relationship x Group 5							-0.0361 (0.0507)
Housewife x Group 2							-0.108 (0.0669)
Housewife x Group 3							-0.0295 (0.0430)
Housewife x Group 4							-0.0971*** (0.0349)
Housewife x Group 5							-0.0760 (0.0876)
No. Countries	21	5	2	7	3	4	21
No. Observations	3,094	657	320	1,128	454	535	3,094

Standard errors in parentheses

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

Notes: The sample consists of mothers aged 18-40 in 2008 (wave 4). The independent variable is a binary variable equal to 1 if the individual is employed in part-time and 0 if the individual is employed in full-time or self-employed. Z-values from robust clustering by country in parentheses.

**Table 9: Determinants of Part-Time Work across Bahle's Family Policy Groups:  
Marginal Effects from a Probit Model**

Sample	All Groups (1)	Group 1 (2)	Group 2 (3)	Group 3 (4)	Group 4 (5)	Group 5 (6)	All Groups (7)
Education (primary omitted)							
Secondary	-0.00832 (0.0668)	-0.0463 (0.0470)	-0.157 (0.249)	0.0993 (0.0718)	0.101 (0.100)	-0.131** (0.0580)	0.0237 (0.0505)
Upper secondary	-0.0923** (0.0453)	-0.0616 (0.0573)	-0.169 (0.195)	-0.0158 (0.0564)	-0.156* (0.0794)	-0.0241 (0.0209)	-0.0748** (0.0301)
Tertiary	-0.125** (0.0592)	-0.0464 (0.0582)	-0.279** (0.109)	0.0222 (0.0670)	-0.308*** (0.0339)	-0.0833 (0.0713)	-0.0861** (0.0399)
Age	-0.000224 (0.00249)	-0.00460 (0.00356)	0.00504 (0.0105)	0.00521 (0.00565)	0.00142 (0.00726)	-0.00433* (0.00235)	-0.000268 (0.00271)
Married	0.0178 (0.0286)	0.00945 (0.0227)	-0.0333 (0.0412)	-0.0196 (0.0455)	0.128 (0.146)	-0.00300 (0.0402)	0.0215 (0.0291)
Divorced, seperated	-0.0833** (0.0410)	-0.0382 (0.0508)	-0.0927 (0.0644)	-0.115 (0.0836)	-0.0997*** (0.0365)	-0.174*** (0.0618)	-0.0884** (0.0387)
Gender role attitudes							
Scarce jobs should go to men first	-0.0426 (0.0439)	-0.0665 (0.0791)	-0.0672*** (0.0255)	-0.0123 (0.0404)	0.0440 (0.349)	0.0299 (0.0660)	-0.118 (0.111)
Working mother warm with children	-0.0289 (0.0317)	-0.0344 (0.0296)	0.175*** (0.0465)	-0.0362 (0.0427)	-0.110 (0.119)	-0.124 (0.115)	-0.183*** (0.0665)
Being a housewife is fulfilling	0.0546** (0.0265)	0.106*** (0.0231)	0.0519 (0.0843)	0.0701** (0.0327)	0.0262 (0.0724)	-0.0185 (0.0353)	0.134*** (0.0356)
Important in a job							
good pay	-0.130*** (0.0283)	-0.0974*** (0.0238)	-0.0710 (0.131)	-0.153** (0.0736)	-0.121*** (0.0286)	-0.0503 (0.105)	-0.123*** (0.0347)
good hours	0.0690** (0.0318)	0.0149 (0.0227)	0.0725 (0.0876)	0.0712* (0.0432)	0.105 (0.117)	-0.0288** (0.0141)	0.0569** (0.0234)
Competition is OK	0.00446 (0.0524)	0.105*** (0.0343)	-0.304*** (0.0306)	0.0243 (0.0696)	-0.256* (0.143)	0.133* (0.0797)	0.0118 (0.0448)
Interaction Effects							
Scarce jobs x Group 2							0.0785 (0.108)
Scarce jobs x Group 3							0.0831 (0.116)
Scarce jobs x Group 4							0.250 (0.221)
Scarce jobs x Group 5							0.163 (0.144)
Warm relationship x Group 2							0.208*** (0.0397)
Warm relationship x Group 3							0.119 (0.0763)
Warm relationship x Group 4							0.395*** (0.0859)
Warm relationship x Group 5							0.130** (0.0588)
Housewife x Group 2							-0.117** (0.0580)
Housewife x Group 3							-0.0773 (0.0477)
Housewife x Group 4							-0.0782* (0.0473)
Housewife x Group 5							-0.157*** (0.0418)
No. Countries	21	5	2	7	3	4	21
No. Observations	1,961	481	231	691	259	299	1,961

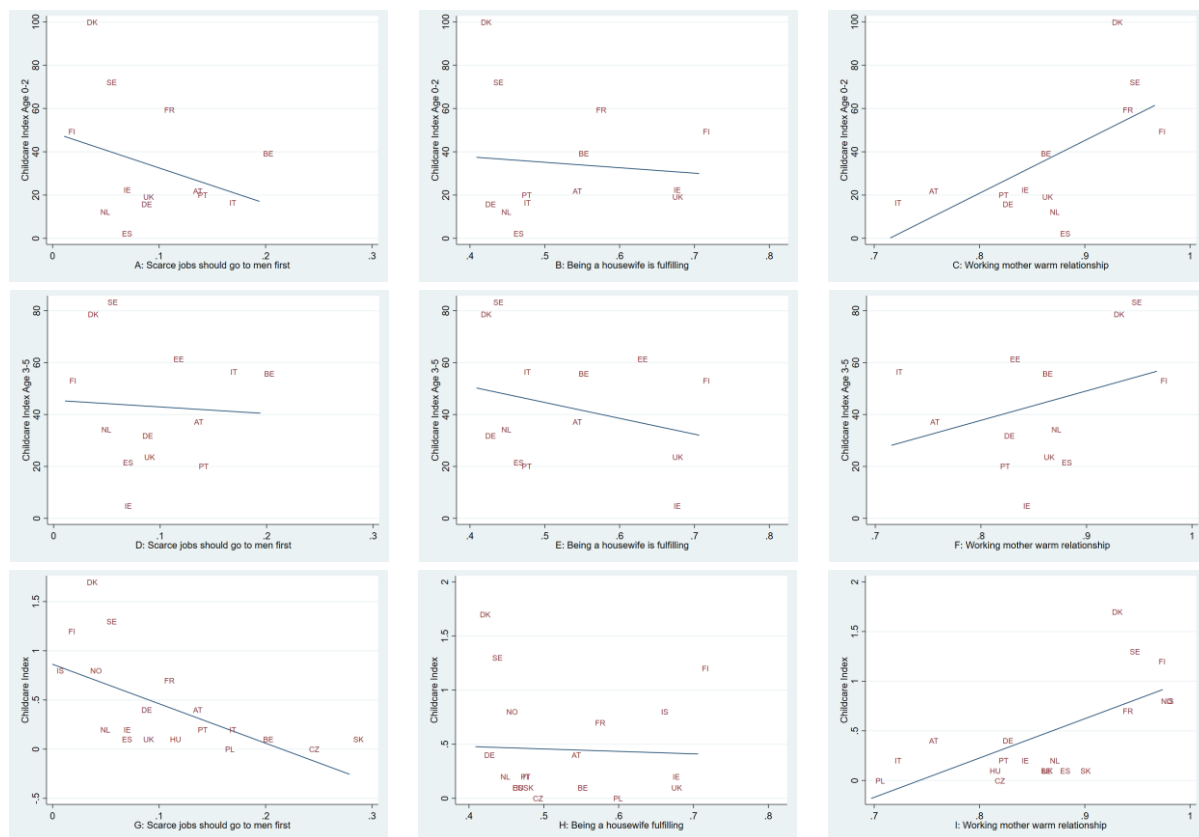
Standard errors in parentheses

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

Notes: The sample consists of mothers aged 18-40 in 2008 (wave 4). The independent variable is a binary variable equal to 1 if the individual is working in part-time and 0 if she is working full-time or is self-employed. Z-values from robust clustering by country in parentheses.

## 4.4 Robustness Checks

To test the robustness of my results regarding my first research question (section 4.1), I use different family policy indices generated by previous research (Abendroth, van der Lippe & Maas, 2012; De Henau, Meulders and O’Dorchai’s, 2007a, 2007b; Kangas & Rostgaard, 2007). Those indices are explained in Appendix C. The results of the robustness checks can be found in Appendix E - G and show that, regardless of controlling for country fixed effects or country’s family policy indices, gender role attitudes are of high relevance for an individual woman’s labor force participation.



Notes: I use the sample of mothers aged 18-40. Panel A-C show country’s childcare indices for children aged 0-2 by De Henau, Meulders and O’Dorchai’s (2007a), Panel D-F show country’s childcare indices for children aged 3-5 by De Henau, Meulders and O’Dorchai’s (2007a), and panel G-I show country’s childcare indices for children below school age by Abendroth, van der Lippe and Maas (2012).

**Figure 2: Family Policy Indices across Countries**

To see, whether family policies and gender role attitudes of mothers correlate, I look at the correlations between childcare indices and mothers’ gender role attitudes. Appendix H shows

figures about the correlations of Abendroth, van der Lippe and Maas' (2012) further family policy indices and mothers' average gender role attitudes.

Since childcare indices seem to correlate to the highest extent with average gender role attitudes, figure 2 presents the correlations from De Henau, Meulders and O'Dorchai's (2007a) childcare indices for children aged zero to two (panel A-C) and three to five (panel D-F) as well as Abendroth, van der Lippe and Maas' (2012) childcare index for all children below school starting age (panel G-I) and mother's average gender role attitudes across countries. Agreement with the statement '*Scare jobs should go to men*' and childcare indices correlate negatively, the same is true for '*Being a housewife is fulfilling*' and childcare indices. '*Working mother warm with children*' and childcare indices correlate positively. The figures present that childcare for children of the younger age group (panel A-C) correlates stronger with gender role attitudes than for the older age group (panel D-F). This is in line with Saraceno's suggestions (2011), that children of the older age group are widely expected to go to childcare facilities, while this is less common for children of very young age. Overall, the correlations are in line with my expectations and substantiate my assumption that childcare policies matter for mother's gender role attitudes.

Table 10 shows the correlations of women's employment-rates on country-level. As mentioned in part 4.2, I assume that using indices, which cover multiple aspects like childcare quality, availability, and costs, as well as other family policies like parental leave, lead to more accurate results than using only public expenditures on childcare. Therefore, I will use the four family policy indices by Abendroth, van der Lippe and Maas (2012) in this analysis. The results show that education levels have no explanatory power, not even if no further controls are included (column (1)). Parental leave seems to influence employment negatively, whereas childcare benefits and part-time availability correlate positively with employment. However, those three indices show only weakly or no significant results and are very small (columns (3)-(4)). The childcare index, in contrast, explains about 16.9 - 19.3 percent of mothers' employment rates.

Both mothers' average attitudes (columns (2) and (4)) and lagged average attitudes (column (5)) about '*Being a housewife is fulfilling*' and '*Scare jobs should go to men first*' influence mothers' employment rates negatively, even though the results are at most weakly significant. Including both family policies and average gender role attitudes in column (4) increases the R-squared to 0.80 and shows that including family policies is important to explain mothers' employment rates. Also, family policies and gender role attitudes lose explanatory power when they are included together. Therefore, this analysis suggests a correlation between family



policies and gender role attitudes, as well. Using mothers' lagged attitudes from 1999 shows that those lagged attitudes have some weakly significant explanatory power for mothers' employment rates. This result might confirm my expectation that family policies, gender role attitudes, and decisions about employment affect each other with a time lag.

With regards to my third research question, I try to validate the robustness of my results by performing the same regression as in 4.3, but with alternative clusters of family policy groups generated in previous research (e.g. Ferragina, 2019; Mischke, 2011). The results are displayed in Appendix D.

Overall, the performed robustness checks underline my findings. Even though the results are not always significant, the direction of the correlations is clear and encourages further research in this field.

**Table 10: Determinants of Mother's Employment Rates across Countries**

	(1)	(2)	(3)	(4)	(5)
Mother's education (primary omitted)					
Secondary	-0.0221 (0.167)	0.0500 (0.176)	-0.101 (0.167)	-0.0577 (0.210)	-0.0456 (0.169)
Upper Secondary	0.246 (0.170)	0.315* (0.170)	0.00134 (0.166)	0.0833 (0.175)	0.180 (0.236)
Tertiary	0.465* (0.261)	0.250 (0.258)	0.634** (0.286)	0.587* (0.284)	0.277 (0.244)
Family Policy Indices					
Abendroth childcare			0.193*** (0.0521)	0.169*** (0.0568)	
Abendroth parental leave			-0.00280*** (0.000816)	-0.00284*** (0.000978)	
Abendroth child benefits			0.0125** (0.00456)	0.0105* (0.00539)	
Abendroth part-time			-0.00638 (0.00995)	-0.00806 (0.00741)	
Averages by country		Mother's		Mother's	Mother's lagged
Gender role attitudes					
Competition is OK		-0.325 (0.372)		-0.382 (0.261)	-0.551 (0.364)
Being a housewife is fulfilling		-0.511* (0.250)		-0.349 (0.216)	-0.353* (0.188)
Scarce jobs should go to men first		-0.648* (0.313)		-0.233 (0.334)	-0.802 (0.460)
Observations	19	19	19	19	17
R-squared	0.256	0.532	0.707	0.804	0.649

Robust standard errors in parentheses

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

Notes: I use the sample of mothers aged 18-40. The mother's employment rates by country are reported in Appendix A. T-values from robust clustering by country in parentheses. The lagged average attitudes by country are lagged by one wave (about 5-10 years) from the employment rates.

## 5 Conclusion

Detecting whether gender differences in labor market participation are resulting from women's own preferences and attitudes and whether those are influenced by family policies is important for the formulation of such policies. Only few studies have examined whether family policies correlate with gender role attitudes and whether they affect female labor supply not just directly through the possibility to better combine working and caring, but also due to a change in attitudes towards working women.

I contribute to the existing literature on the effects of women's gender role attitudes on female labor market outcomes by focussing on three research questions. First, I examined whether gender role attitudes and work values impact an individual woman's labor market participation in the European Union. Secondly, I assessed whether social norms (measured by country-specific average work values and gender role attitudes) can explain country differences in women's employment rates. And thirdly, I raised the question of whether the correlations between gender role attitudes and individual women's labor market participation are heterogeneous across different family policy clusters.

I developed a regression framework that combines Fortin's (2005) model of the effects of gender role attitudes and work values on female labor force participation with Bahle's (2009) family policy clusters across countries in the European Union. Fortin (2005) investigates the effect of gender role attitudes and work values on female labor force participation in OECD countries from 1990 to 1999. Bahle (2009) divides European countries into family policy groups, according to their size and scope of family allowances, as well as the size and mix of parental benefits and childcare services. The corresponding clusters evaluate how much a state's family policies enable mothers to combine work and child-rearing.

For my study, I used the data of the most recent two waves from 1999 and 2008 from the European Values Survey. I focused solely on the European Union, which has specific policy goals for its member states, but countries vary in their historical backgrounds and implementation of family policies.

This study has identified that both, preferences and gender role attitudes, are important for female labor market participation. This highlights the importance of beliefs and personal ideology for labor market decisions. My three research questions can be answered in the

following ways. Firstly, my results from the Probit analysis of individual women's employment status and the probability of part-time work substantiate that gender role attitudes are an important determinant of an individual woman's labor force participation. Secondly, my results show that social norms matter for female employment rates.

Thirdly, my evaluation shows that gender role attitudes influence mother's labor force participation to different extents across family policy clusters, which has not been revealed in previous literature. The correlation is strongest in countries with a low state interference into the family-work relationship (e.g. Ireland, the United Kingdom, and the Netherlands), and lowest in the group of Nordic countries, which have the highest levels of institutionalization (e.g. Denmark, Sweden, Finland, Estonia, and Latvia). I find evidence for large heterogeneity of the relationship between gender role attitudes and female labor market participation across European countries with different family policies: Agreeing with the statement '*A working mother can establish just as warm and secure a relationship with her children as a mother who does not work*' increases individual women's labor supply by 8.9 percent in Nordic countries and by 27.2 percent in countries with low state interference into the family-work relationship (e.g. Ireland, the UK, and the Netherlands).

The statement '*Being a housewife is just as fulfilling as working for pay*' shows differing results as well: Agreeing with it decreases individual mother's labor supply by 8.8 percent in the Nordic countries and by 17.2 percent in countries with low state interference into the family-work relationship (e.g. Ireland, the UK, and the Netherlands). Therefore, this study makes a major contribution to the research by demonstrating that family policies matter for the effect of gender role attitudes on female labor force participation. To further increase female labor force participation rates, family policies should be considered as an important instrument.

Comparing my results of the first research question to Fortin's (2005) findings reveals that the explanatory power of many variables (e.g. '*Scare jobs should go to men first*') is almost identical. This is contrary to my expectations. Since anti-egalitarian views decrease from older to younger cohorts and the European Union has specific policy goals for its member states (e.g. increase gender equality and labor participation), I expected the influence of anti-egalitarian views on individual women's employment to be lower than in Fortin's sample. I expected similar results to Fortin's findings in the previous decade for traditional gender role attitudes and feeling of 'mother's guilt' because those attitudes do not change over birth cohorts. However, the explanatory power of agreement with '*Being a housewife is just as fulfilling as working for pay*' is 2.2 percent higher in my sample (Fortin evaluates -8.4 percent).

The impact of ‘mother’s guilt’ is 3.7 percent lower in my sample (14.7 percent in Fortin’s sample). This might be because combining working and child-bearing has recently become more common. Not feeling ‘mother’s guilt’ still shows a high positive impact on women’s employment status, thus underlining the importance of taking ‘mother’s guilt’ into account when evaluating women’s employment status. Since attitudes towards working mothers seem to be formed later in life, policies and firm practices might be the key to facilitate work-children reconciliation.

Regarding my second research question, whether social norms matter for female employment rates, my results are consistent with Fortin’s (2005) findings, even though my estimates are not always significant and at the same level. An increase of 10 percent in the proportion of countrymen who agree that ‘*Scare jobs should go to men first*’, for example, reduces women’s employment rates by 5-9 percent in Fortin’s sample, whereas it leads to a diminution in women’s employment rates by 3-5 percent in my sample.

Further, Fortin (2005) finds that positive attitudes towards competition influence female labor force participation positively, whereas my results suggest weaker impacts. The same is true for the influence of education: She finds a firm relationship between higher education and egalitarian views, but the impact of education is lower in my analyses. The direction of my estimates, though, is the same compared to her analysis. I suggest that policies which enhance competition might be beneficial to working women and policies enhancing women’s access to higher education are convenient instruments to affect female employment directly and indirectly.

My investigation has some limitations. Firstly, even though I write about expected effects at times, the results might be better interpreted as correlations. It is not clear whether women’s attitudes influence their labor market decisions or whether women form their attitudes because of their labor market participation. I applied lagged attitudes to my second model in order to help to detect causal effects, but with the EVS data, it is not possible to generate such lagged attitudes at the individual level. Secondly, with the usage of family policy groups generated in previous literature, I can only assess the overall effects of the policies. The division of each policy into its single characteristics (e.g. quality, availability, costs) and the assessment of corresponding impacts on gender role attitudes is not possible.

Thirdly, it was not possible to get sufficient information about past family policies. The indices used in this study were generated for family policies at the beginning of the 2000s. I expect that the adjustment of attitudes to family policies happens slowly and that some women need to set good examples for other women to adopt new opinions and to also choose to

combine motherhood with market work. The effect of family policies on gender role attitudes and ‘mother’s guilt’ might be lagged. I cannot conclude whether family policies, especially childcare policies, affect gender role attitudes or the other way around. Also, I cannot judge whether family policies affect the labor supply of mothers or mother’s labor force participation is causal for family policies. On one hand, higher levels of childcare may motivate mothers to participate in the labor market and on the other hand, higher numbers of working mothers might increase the demand for childcare and subsequently increase childcare supply.

This is an important issue for future research, as the long-term effects of family policies on gender role attitudes need to be investigated further. Lastly, many European countries have had big changes in family policies in recent years, which I could not take into account in this study since the EVS data only included data until 2008. Future research should take these family policy changes into account.

This study makes a first comprehensive assessment of heterogeneity in the relationship between mother’s gender role attitudes and labor force participation across countries with different family policies. Several questions still remain to be answered. A natural progression of this work is to perform longitudinal studies. This way, it would be possible to substantiate the causality of family policies, gender role attitudes, and female labor force participation. Moreover, a longitudinal study may reveal how long it takes until policy changes affect gender role attitudes. Longitudinal studies might also help to detect how the intensity of correlations changes over time. Lastly, future research needs to investigate whether the changes in correlations with female employment status differ among anti-egalitarian views, traditional gender role attitudes and the feeling of ‘mother’s guilt’.

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# Appendix A

## Women's Employment Rates by Country

EVS country no.	country	Acronym	Women's employment rates (18-64-year-olds)		Mother's employment rates (18-40year-olds)	
			EVS		OECD	EVS
			1999	2008	2008 (25-54)	2008
40	Austria	AT	64.1	78.2	77.8	0.66
56	Belgium	BE	61.3	72.1	73.8	0.79
100	Bulgaria	BG	69.7	74	–	0.64
203	Czech Republic	CZ	79.4	75.3	75.2	0.62
208	Denmark	DK	86.7	94.3	84	0.95
233	Estonia	EE	78.4	85	79.7	0.74
246	Finland	FI	75.1	82.3	81.2	0.71
250	France	FR	59.1	75.7	77.2	0.72
276	Germany	DE	62.6	68.6	74.7	0.57
348	Hungary	HU	69.6	71.5	68	0.58
352	Iceland	IS	82.5	81.3	82	0.8
372	Ireland	IE	57.7	59.4	69	0.53
380	Italy	IT	62.4	65.8	60.3	0.64
428	Latvia	LV	67.5	77.3	79.7	0.69
440	Lithuania	LT	72.5	79.2	79.4	0.7
470	Malta	MT	35.4	35.2	–	0.4
528	Netherlands	NL	70	74	78.4	0.78
909	Northern Ireland		62.8	52.7	–	–
578	Norway	NO	–	85.6	84	0.85
616	Poland	PL	71.3	71.8	71	0.61
620	Portugal	PT	63.2	70.2	75.8	0.73
642	Romania	RO	53.6	68.5	–	0.62
703	Slovak Republic	SK	78	73.9	73.7	0.57
705	Slovenia	SI	76.9	82.6	84.8	0.86
724	Spain	ES	40.74	64.8	66.5	0.63
752	Sweden	SE	86.6	82.6	83.5	0.82
826	United Kingdom	UK	66.5	66.6	75.1	0.54

*Sources:* The employment rates in the first two columns are computed among women aged 18-64 from the two EVS waves. The third column is from the OECD (2019c) 'Short-Term Labour Market Statistics' at <https://stats.oecd.org/viewhtml.aspx?datasetcode=STLABOUR&lang=en>. The last column is computed among mother's aged 18-40 from the last EVS wave in 2008.

# Appendix B

**Average (over Time) Gender Role Attitudes and Work Values by Country**

Country	Women									Men								
	Gender role attitudes				Work values					Gender role attitudes				Work values				
	Scarce jobs	Working mother	House-wife	Both income	Good pay	Good hours	Useful job	People	Comp OK	Scarce jobs	Working mother	House-wife	Both income	Good pay	Good hours	Useful job	People	Comp OK
AT	0.19	0.78	0.5	0.84	0.66	0.5	0.36	0.48	0.68	0.22	0.71	0.57	0.81	0.71	0.41	0.36	0.42	0.73
BE	0.18	0.87	0.54	0.82	0.62	0.42	0.35	0.51	0.56	0.17	0.81	0.68	0.74	0.72	0.33	0.33	0.42	0.59
BG	0.22	0.85	0.38	0.94	0.96	0.74	0.63	0.65	0.72	0.31	0.86	0.48	0.95	0.97	0.67	0.6	0.66	0.78
CZ	0.18	0.82	0.6	0.93	0.8	0.42	0.38	0.45	0.72	0.25	0.77	0.7	0.91	0.83	0.39	0.34	0.35	0.73
DK	0.02	0.92	0.47	0.74	0.51	0.37	0.24	0.47	0.62	0.03	0.89	0.49	0.73	0.64	0.3	0.2	0.38	0.71
EE	0.12	0.8	0.56	0.86	0.92	0.72	0.34	0.56	0.65	0.23	0.71	0.63	0.82	0.94	0.63	0.27	0.45	0.65
FI	0.03	0.97	0.75	0.76	0.62	0.55	0.28	0.45	0.6	0.07	0.94	0.8	0.78	0.68	0.52	0.28	0.33	0.63
FR	0.15	0.87	0.55	0.85	0.6	0.33	0.31	0.5	0.55	0.14	0.8	0.57	0.83	0.69	0.29	0.3	0.37	0.56
DE	0.13	0.82	0.32	0.86	0.72	0.39	0.32	0.52	0.69	0.24	0.76	0.38	0.85	0.81	0.28	0.27	0.39	0.71
HU	0.13	0.81	0.52	0.93	0.89	0.64	0.48	0.48	0.64	0.18	0.74	0.57	0.89	0.91	0.6	0.42	0.45	0.68
IS	0.02	0.94	0.64	0.7	0.83	0.58	0.4	0.54	0.78	0.03	0.85	0.64	0.64	0.87	0.51	0.38	0.47	0.81
IE	0.11	0.81	0.7	0.75	0.9	0.68	0.45	0.6	0.66	0.16	0.81	0.73	0.76	0.91	0.65	0.45	0.52	0.69
IT	0.2	0.73	0.46	0.88	0.81	0.64	0.61	0.65	0.6	0.22	0.64	0.53	0.81	0.83	0.56	0.57	0.59	0.66
LV	0.14	0.81	0.38	0.92	0.85	0.44	0.33	0.52	0.69	0.21	0.73	0.39	0.91	0.85	0.39	0.31	0.39	0.7
LT	0.08	0.81	0.74	0.85	0.95	0.62	0.31	0.53	0.63	0.31	0.76	0.78	0.87	0.97	0.59	0.31	0.44	0.65
MT	0.33	0.74	0.82	0.83	0.9	0.8	0.62	0.57	0.75	0.36	0.62	0.86	0.83	0.92	0.75	0.62	0.52	0.78
NL	0.09	0.87	0.47	0.46	0.7	0.57	0.5	0.74	0.56	0.08	0.79	0.56	0.37	0.81	0.43	0.47	0.63	0.62
NO	0.02	0.95	0.42	0.92	0.52	0.29	0.28	0.4	0.68	0.03	0.87	0.51	0.89	0.65	0.3	0.27	0.32	0.75
PL	0.22	0.65	0.56	0.87	0.92	0.53	0.41	0.54	0.62	0.3	0.58	0.63	0.86	0.95	0.55	0.42	0.52	0.66
PT	0.19	0.77	0.43	0.94	0.83	0.6	0.63	0.51	0.62	0.25	0.72	0.5	0.92	0.85	0.56	0.62	0.52	0.62
RO	0.3	0.87	0.52	0.87	0.93	0.7	0.61	0.57	0.76	0.3	0.86	0.5	0.85	0.94	0.66	0.6	0.56	0.81
SK	0.22	0.87	0.56	0.92	0.93	0.55	0.32	0.35	0.72	0.29	0.81	0.69	0.9	0.93	0.45	0.27	0.26	0.71
SI	0.13	0.89	0.51	0.92	0.79	0.33	0.62	0.64	0.69	0.15	0.84	0.58	0.87	0.84	0.29	0.57	0.56	0.72
ES	0.11	0.82	0.42	0.88	0.79	0.55	0.31	0.31	0.58	0.18	0.79	0.47	0.87	0.82	0.54	0.31	0.27	0.6
SE	0.02	0.93	0.45	0.91	0.6	0.51	0.2	0.41	0.69	0.03	0.83	0.49	0.89	0.67	0.43	0.18	0.38	0.73
GB/UK	0.11	0.83	0.63	0.7	0.77	0.61	0.33	0.47	0.65	0.14	0.76	0.61	0.71	0.83	0.54	0.32	0.4	0.69

*Source:* Proportions of respondents computed from wave 3 (1999) and wave 4 (2008) EVS. Individuals are aged 18-64. Students and Retirees are excluded. The gender role attitudes and work values are as in Table 1. With approximately 1000 respondents per country (except Norway with only wave 4 and 500 respondents).

# Appendix C

## Overview of Family Policy Groups generated by previous literature

Author	General information	Groups
Mischke, 2011	<ul style="list-style-type: none"> <li>- perform a cluster analysis to divide countries from the European Union into five different policy groups</li> <li>- evaluate general family support and dual-earner support (Korpi, 2000; Ferrarini, 2006): <i>General family support</i> indicates family support which does not explicitly supports mother's labor market participation, whereas <i>dual-earner support</i> explicitly supports female labor market participation and additionally enhances fathers' involvement in child care</li> <li>- use leave entitlements, service provision, cash benefits, and taxation to generate family policy indicators</li> <li>- those family policy clusters can explain female labor-market participation, fertility, child poverty, and gender equality</li> <li>- results suggest that the dual-earner support cluster (Denmark and Sweden) and the pluralistic cluster (Finland, France, and Belgium) achieve best in labor-market participation, fertility, child poverty and gender equality. The general family-support cluster (Germany and Austria) ranges in the middle, while the two low levels of support (Ireland, United Kingdom, Spain, Italy, Portugal, and the Netherlands) perform worst.</li> </ul>	<ul style="list-style-type: none"> <li>- 1: Austria, Germany, Luxembourg (rather low dual-earner support, but a comparatively high general family support)</li> <li>- 2: Greece, Portugal, Spain, Italy, the Netherlands (relatively low support in both dimensions)</li> <li>- 3: Ireland, the United Kingdom (low support for families in both dimensions, but more generous child allowances, whereas the maternity and paternity leave, is more modest than in group two)</li> <li>- 4: Denmark, Sweden (highest level of dual-earner support and a reasonable level of general family support)</li> <li>- 5: Finland, France, Belgium (medium levels in both general family and dual-earner support)</li> </ul>
Misra, Budig, and	<ul style="list-style-type: none"> <li>- divide ten countries according to their welfare state strategies into four different groups</li> </ul>	<ul style="list-style-type: none"> <li>- 1: Austria, Germany, Luxembourg, the Netherlands (<i>primary caregiver strategy</i>: values women's care</li> </ul>

<p>Moller, 2007;</p> <p>Ferragina, 2019</p>	<ul style="list-style-type: none"> <li>- investigate how the variations in those strategies influence mother's employment, earnings, and poverty relative to women without children.</li> <li>- focus on reconciliation policies, which include parental leave, formal childcare and flexible work-time policies (Gornick &amp; Meyers, 2003; Hantrais, 2000).</li> <li>- results suggest that the earner-carer strategy might be most effective to increase equality for both single and married mothers</li> <li>- Ferragina (2019) uses Misra, Budig and Moller's (2007) four welfare state strategy groups and adds a fifth group: the Mediterranean group</li> <li>- Ferragina (2019) also adds the other Nordic countries to the earner-carer strategy group</li> </ul>	<p>work by generous cash allowances for care work of mothers, supports the male breadwinner model)</p> <ul style="list-style-type: none"> <li>- 2: Canada, the United States, the United Kingdom (<i>primary earner strategy</i>: encourages women's employment without significant state provision of care)</li> <li>- 3: France, Belgium (<i>choice strategy</i>: supports women's employment or caregiving for young children; policies might support women's full-time work by high-quality childcare, while providing generous parental leave and caregiver allowances as well as part-time work opportunities as well)</li> <li>- 4: Sweden (<i>earner-carer strategy</i>: helps both women and men to balance work and care by offering shorter working weeks and generous support for childcare within and outside of the home)</li> <li>- 5: Greece, Italy, Portugal and Spain (<i>Mediterranean group</i>: like the primary caregiver strategy but offers fewer provisions and services)</li> </ul>
<p>Bahle, 2009</p>	<ul style="list-style-type: none"> <li>- evaluates European countries according to their size and scope of family allowances as well as the size and mix of parental benefits and childcare services</li> <li>- countries with a high work-compatibility tend to have universal uniform family allowances, whereas countries with no work-related policies tend to have limited family allowances</li> </ul>	<ul style="list-style-type: none"> <li>- 1: Denmark, Sweden, Finland, Estonia, Latvia (high levels in both measures)</li> <li>- 2: France, Belgium (high work-compatibility and medium levels of child allowances)</li> <li>- 3: Germany, Luxembourg, Austria, Hungary, Czech Republic, Poland, Lithuania, Slovenia (a very heterogeneous group where policies support child care in the home and where family allowances are size-graded)</li> <li>- 4: The Netherlands, United Kingdom, Ireland (following an autonomy model)</li> <li>- 5: Italy, Malta, Cyprus, Portugal, Spain, Greece low levels in both measures)</li> </ul>

### Overview of Family Policy Indices generated by previous literature

Author	General Information	Indices
Kangas and Rostgaard, 2007	<ul style="list-style-type: none"> <li>- investigate whether they can substantiate Hakim's Preference Theory or whether the opinions on working and family life react to family policies.</li> <li>- They use the International Social Survey Programme data from 2002</li> <li>- generate three indicators for the family policies in Denmark, Finland, Norway, Sweden, Germany, the Netherlands, and England.</li> <li>- On one hand, the results support Hakim's theory and show that opinions are relevant for female labor force participation.</li> <li>- on the other hand, the results suggest that the opinions are constrained by women's structural and institutional factors, like the availability of daycare.</li> <li>- High levels of childcare and generous leave schemes enhance women's employment.</li> <li>- Also, the husband's preferences regarding the employment of his wife seem to influence her decision about labor force participation.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>childcare indices</i>: separated for children below the age of three and between the age of three and school-age and are generated by focusing on access, price and quality of the available daycare in each age group.               <ul style="list-style-type: none"> <li>○ The access to daycare contains information about the share of children in daycare (as full-time equivalents), whether there is a public guarantee of day care provision and the social expenditure for daycare.</li> <li>○ The costs are generated by looking at parents' share of total childcare costs and the cost of the fee to the parent.</li> <li>○ And lastly, the quality is measured by the staff-child ratio, staff education, weekly opening hours and whether daycare is available only during school terms or throughout the year. The components have been standardized to values between 0 and 1 by dividing them by the maximum value.</li> </ul> </li> <li>- <i>index of leave</i>: contains information about the maximum time available for maternity leave, paternity leave and parental leave and the part of the leave, which is set as a quota (mostly the father's quota).</li> <li>- To qualify the lengths of the leaves, they are multiplied by the compensation paid during the leave. To standardize the values, they are also divided by the maximum value.</li> </ul>

<p>De Henau, Meulders, and O’Dorchai, 2007</p>	<ul style="list-style-type: none"> <li>- generate similar childcare and parental leave indices as Kangas and Rostgaard (2007), but for 15 EU-member states</li> </ul>	<ul style="list-style-type: none"> <li>- two <i>childcare indices for the age groups 0-2 years and 3-5 years</i>: <ul style="list-style-type: none"> <li>o the coverage rate of the childcare system (opening hours of care facilities)</li> <li>o public share in the cost and proportion of children covered)</li> <li>o the child/staff ratio and the public spending on children aged 3-5 to generate</li> </ul> </li> <li>- <i>index of the parental leave’s supportiveness of working mothers</i>: combines information about the attractiveness of the parental leave (job protection, flexibility, and wage replacement) and the potential gender balanced take-up rate.</li> </ul>
<p>Abendroth, van der Lippe and Maas, 2002</p>	<ul style="list-style-type: none"> <li>- investigate the influence of family policies on women’s working hours and use four indices</li> <li>- find evidence that state policies easing the traditional family roles (e.g. child benefits) affect women’s working hours negatively and weak evidence that policies which facilitate the dual-earner family (e.g. leave arrangements and public funded childcare) affect women’s working hours positively</li> <li>- results suggest that most of the support is complementary: supportive workplace arrangements and supportive family role models, as well as supportive workplace arrangements and public funded childcare, reinforce each other</li> </ul>	<ul style="list-style-type: none"> <li>- <i>availability of publicly funded child care</i>: is measured by the expenditure on formal daycare as a percentage of the countries GDP in 1999</li> <li>- <i>effective parental leave</i>: measured as in Plantenga and Remery (2005). The total weeks of maternity and parental leave are weighted by the level of payment. When the benefit is in the range of 0%-33% the weight is 33%, the weight is set to 66% if the benefit is in the range of 34%-66% and to 100% for a benefit between 67% and 100% of the minimum wage. Additionally, the weighted leave period is multiplied by two if the parental leave is an individual and not a family right (Plantenga &amp; Remery, 2005).</li> <li>- <i>Child benefits</i>: measured by the percentage increase in disposable income families face with two children and with no children due to child benefits.</li> <li>- <i>availability of part-time work</i>: measured by the percentage of men in part-time employment in the ESS 2004. The underlying assumption is that state policies which make part-time work striking for men do so for women as well (Abendroth, van der Lippe &amp; Maas, 2012).</li> </ul>



### Overview of the actual values of Family Policy Indices generated by previous literature

Country	De Henau Parental leave	De Henau Childcare Aged 0-2	De Henau Childcare Aged 3-5	Abendroth Childcare	Abendroth Parental leave	Abendroth Child benefits	Abendroth Part-time availability	Kangas Childcare Aged 0-2	Kangas Childcare Aged 3-5	Kangas Parental leave
Austria	32.9	22	37.2	0.4	64	18	9.9	.	.	.
Belgium	71.5	39.2	55.8	0.1	18	15	10.3	.	.	.
Bulgaria	.	.	.	.	.	.	.	.	.	.
Czech Republic	.	.	.	0	58	12	3.5	.	.	.
Denmark	61.5	100	78.6	1.7	47	8	11.4	2.24	1.77	2.51
Estonia	.	.	61.4	.	.	.	.	.	.	.
Finland	61.6	49.4	53.1	1.2	99	9	10.2	2.15	1.92	3.58
France	40.9	59.4	.	0.7	50	9	8	.	.	.
Germany	40.7	15.8	31.9	0.4	49	12	7.9	1.19	1.3	1.15
Hungary	.	.	.	0.1	114	21	2.6	.	.	.
Iceland	.	.	.	0.8	26	7	6.3	.	.	.
Ireland	42	22.5	4.9	0.2	11	5	10.4	.	.	.
Italy	77.3	16.5	56.4	0.2	5	5	11.2	.	.	.
Latvia	.	.	.	.	.	.	.	.	.	.
Lithuania	.	.	.	.	.	.	.	.	.	.
Malta	.	.	.	.	.	.	.	.	.	.
Netherlands	40.1	12.3	34.2	0.2	11	8	16.7	1.36	2.1	1.22
Norway	.	.	.	0.8	68	8	7.4	1.8	1.38	2.03
Poland	.	.	.	0	50	4	6.4	.	.	.
Portugal	70.8	20.1	20.1	0.2	21	7	5.5	.	.	.
Romania	.	.	.	.	.	.	.	.	.	.
Slovak Republic	.	.	.	0.1	58	10	6.7	.	.	.
Slovenia	.	.	.	.	.	.	.	.	.	.
Spain	17.6	2.2	21.6	0.1	50	2	5.2	.	.	.
Sweden	79.5	72.1	83.4	1.3	78	10	8.9	2.37	2.42	3.22
United Kingdom	47.8	19.2	23.7	0.1	25	9	12.1	0.9	1.75	1.09

*Sources:* The family policy indices are collected from the following studies: De Henau, Meulders and O'Dorchai's, 2007a, 2007b; Abendroth, van der Lippe & Maas, 2012; Kangas & Rostgaard, 2007

# Appendix D

**Determinants of Employment Status by Mischke's (2011) Policy strategy groups: Marginal Effects from a Probit Model**

Sample	All Groups	Group 1	Group 2	Group 3	Group 4	Group 5
	(1)	(2)	(3)	(4)	(5)	(6)
Education (primary omitted)						
Secondary	0.123*** (0.0338)	0.189** (0.0909)	0.0753 (0.0680)	0.162 (0.104)	0.0959 (0.0948)	0.243** (0.0961)
Upper secondary	0.235*** (0.0300)	0.364*** (0.101)	0.151*** (0.0454)	0.188*** (0.0661)	0.0338 (0.0964)	0.383*** (0.0920)
Tertiary	0.301*** (0.0388)	0.387*** (0.134)	0.167** (0.0782)	0.238* (0.126)	0.0799 (0.0990)	0.463*** (0.0948)
Age	0.0132*** (0.00226)	0.0257*** (0.00608)	0.00641 (0.00408)	0.00360 (0.00564)	0.00571* (0.00346)	0.0152*** (0.00466)
Married	0.0404 (0.0280)	0.00164 (0.0759)	-0.0562 (0.0571)	0.190** (0.0746)	0.0626* (0.0379)	0.00489 (0.0521)
Divorced, seperated	0.0432 (0.0402)	-0.0154 (0.104)	0.0199 (0.0810)	0.257*** (0.0978)	-0.0275 (0.0621)	-0.0167 (0.0762)
Gender role attitudes						
Scarce jobs should go to men first	-0.0630 (0.0386)	0.00665 (0.0962)	-0.0317 (0.0676)	-0.162 (0.121)	-0.0589 (0.112)	-0.0648 (0.0649)
Working mother warm with children	0.184*** (0.0316)	0.202*** (0.0716)	0.136** (0.0530)	0.208** (0.0852)	0.105 (0.0663)	0.146** (0.0744)
Being a housewife is fulfilling	-0.118*** (0.0231)	-0.142** (0.0614)	-0.0897** (0.0410)	-0.174*** (0.0637)	0.0504 (0.0368)	-0.150*** (0.0458)
Important in a job						
good pay	-0.0585** (0.0272)	0.0155 (0.0720)	-0.113** (0.0565)	-0.0201 (0.0851)	-0.0592 (0.0372)	0.0197 (0.0456)
good hours	0.0217 (0.0237)	-0.0495 (0.0610)	0.0189 (0.0442)	0.144** (0.0663)	0.0570* (0.0337)	-0.0300 (0.0452)
Competition is OK	0.108** (0.0461)	0.158 (0.117)	0.128 (0.0825)	0.259** (0.132)	0.0572 (0.0789)	0.0832 (0.0908)
No. Countries	13	2	4	2	2	3
No. Observations	1,745	324	517	320	188	396

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Notes: The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

**Determinants of Employment Status by Ferragina's (2019) Policy strategy groups: Marginal Effects from a Probit Model**

Sample	All Groups	Group 1	Group 2	Group 3	Group 4	Group 5
	(1)	(2)	(3)	(4)	(5)	(6)
Education (primary omitted)						
Secondary	0.104*** (0.0341)	0.0855 (0.0709)	0.266** (0.112)	0.240** (0.0978)	0.0433 (0.0525)	0.0869 (0.0923)
Upper secondary	0.230*** (0.0303)	0.256*** (0.0738)	0.199** (0.0948)	0.394*** (0.0930)	-0.0387 (0.0508)	0.152*** (0.0523)
Tertiary	0.293*** (0.0373)	0.236** (0.105)	0.270 (0.178)	0.498*** (0.0907)	-0.0113 (0.0583)	0.201** (0.0913)
Age	0.0136*** (0.00224)	0.0226*** (0.00493)	0.00404 (0.00753)	0.0118** (0.00484)	0.0103*** (0.00321)	0.00668 (0.00478)
Married	0.0424 (0.0280)	-0.00989 (0.0602)	0.327*** (0.110)	0.0667 (0.0530)	0.0500 (0.0373)	-0.0568 (0.0703)
Divorced, separated	0.0300 (0.0400)	-0.0404 (0.0859)	0.347*** (0.131)	-0.00913 (0.0742)	-0.0341 (0.0642)	0.0410 (0.0958)
Gender role attitudes						
Scarce jobs should go to men first	-0.0595 (0.0376)	-0.0694 (0.0829)	-0.0433 (0.151)	-0.0747 (0.0596)	-0.110 (0.0960)	-5.58e-06 (0.0757)
Working mother warm with children	0.189*** (0.0312)	0.251*** (0.0587)	0.248** (0.112)	0.154** (0.0697)	0.134* (0.0689)	0.0722 (0.0637)
Being a housewife is fulfilling	-0.0936*** (0.0229)	-0.123** (0.0485)	-0.166* (0.0872)	-0.131*** (0.0473)	0.0223 (0.0341)	-0.0876* (0.0490)
Important in a job						
good pay	-0.0429 (0.0263)	0.000311 (0.0562)	0.0755 (0.0995)	0.00655 (0.0478)	-0.0220 (0.0339)	-0.145* (0.0742)
good hours	0.0124 (0.0234)	-0.0433 (0.0503)	0.0592 (0.0885)	0.00442 (0.0484)	0.0603* (0.0332)	0.0479 (0.0519)
Competition is OK	0.120*** (0.0457)	0.155 (0.0986)	0.474** (0.205)	0.0795 (0.0912)	0.0811 (0.0764)	0.108 (0.0929)
No. Countries	13	3	1	2	4	3
No. Observations	1,659	458	189	320	309	383

Standard errors in parentheses

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

*Notes:* The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

# Appendix E

## Determinants of Employment Status: Effects from an OLS-Regression Model, controlling for Abendroth, van der Lippe and Maas' (2012) family policy indices

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	0.111*** (0.0236)	0.115*** (0.0245)	0.107*** (0.0291)	0.122*** (0.0303)
Upper secondary education	0.216*** (0.0213)	0.220*** (0.0216)	0.230*** (0.0266)	0.231*** (0.0272)
Tertiary education	0.253*** (0.0257)	0.265*** (0.0258)	0.305*** (0.0329)	0.315*** (0.0334)
Age	0.0123*** (0.00131)	0.0118*** (0.00130)	0.0181*** (0.00187)	0.0169*** (0.00188)
Married	-0.00918 (0.0179)	0.00264 (0.0180)	-0.00755 (0.0237)	0.0172 (0.0240)
Divorced, seperated	0.0299 (0.0275)	0.0385 (0.0275)	0.0307 (0.0340)	0.0529 (0.0342)
No children	0.224*** (0.0192)	0.228*** (0.0192)		
Gender role attitudes				
Scarce jobs should go to men first	-0.0628*** (0.0226)	-0.0562** (0.0227)	-0.0834*** (0.0297)	-0.0716** (0.0298)
Working mother warm with children	0.130*** (0.0185)	0.121*** (0.0185)	0.164*** (0.0259)	0.150*** (0.0259)
Being a housewife is fulfilling	-0.0826*** (0.0138)	-0.0816*** (0.0138)	-0.110*** (0.0190)	-0.112*** (0.0191)
Important in a job				
good pay	-0.0280 (0.0171)	-0.00872 (0.0175)	-0.0650*** (0.0237)	-0.0366 (0.0245)
good hours	0.00981 (0.0142)	0.0125 (0.0142)	0.00287 (0.0194)	0.00343 (0.0196)
Competition is OK	0.0877*** (0.0277)	0.0767*** (0.0276)	0.0616 (0.0378)	0.0499 (0.0378)
Family policy indices				
Abendroth's childcare index		0.117*** (0.0206)		0.174*** (0.0293)
Abendroth's parental leave index		-0.00197*** (0.000409)		-0.00274*** (0.000573)
Abendroth's child benefits index		0.00766*** (0.00175)		0.00772*** (0.00250)
Abendroth's part-time index		-0.00627** (0.00297)		-0.00770* (0.00399)
Observations	4,108	4,108	2,601	2,601

Robust standard errors in parentheses

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

Notes: The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

**Determinants of Part-time work: Effects from an OLS-Regression Model, controlling for Abendroth, van der Lippe and Maas' (2012) family policy indices**

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	-0.0651** (0.0285)	-0.0447 (0.0290)	-0.0604 (0.0382)	-0.0327 (0.0399)
Upper secondary education	-0.0706*** (0.0261)	-0.0577** (0.0259)	-0.113*** (0.0347)	-0.0914*** (0.0352)
Tertiary education	-0.136*** (0.0296)	-0.0951*** (0.0304)	-0.176*** (0.0401)	-0.120*** (0.0421)
Age	-0.00472*** (0.00151)	-0.00605*** (0.00150)	-0.000463 (0.00234)	-0.00215 (0.00236)
Married	0.00246 (0.0203)	-0.000878 (0.0202)	0.000784 (0.0273)	-0.0109 (0.0274)
Divorced, seperated	-0.0833*** (0.0320)	-0.0678** (0.0320)	-0.131*** (0.0401)	-0.128*** (0.0407)
No children	-0.118*** (0.0214)	-0.119*** (0.0212)		
Gender role attitudes				
Scarce jobs should go to men first	-0.0334 (0.0300)	-0.0185 (0.0298)	-0.0662 (0.0411)	-0.0566 (0.0411)
Working mother warm with children	0.0111 (0.0245)	0.00670 (0.0245)	-0.0236 (0.0352)	-0.0348 (0.0358)
Being a housewife is fulfilling	0.0318** (0.0153)	0.0306** (0.0152)	0.0687*** (0.0215)	0.0779*** (0.0216)
Important in a job				
good pay	-0.104*** (0.0176)	-0.0874*** (0.0178)	-0.122*** (0.0245)	-0.0956*** (0.0250)
good hours	0.0497*** (0.0158)	0.0327** (0.0158)	0.0668*** (0.0222)	0.0296 (0.0225)
Competition is OK	-0.0464 (0.0317)	-0.0336 (0.0317)	0.00193 (0.0441)	0.0143 (0.0446)
Family policy indies				
Abendroth's childcare index		-0.0517** (0.0201)		-0.106*** (0.0292)
Abendroth's parental leave index		-0.000612 (0.000441)		0.000168 (0.000638)
Abendroth's child benefits index		0.00303 (0.00199)		0.00478 (0.00295)
Abendroth's part-time index		0.0292*** (0.00309)		0.0431*** (0.00441)
Observations	2,868	2,868	1,648	1,648

Robust standard errors in parentheses

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

*Notes:* The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

# Appendix F

## Determinants of Employment Status: Effects from an OLS-Regression Model, controlling for De Henau, Meulders and O'Dorchai's (2007a, 2007b) family policy indices

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	0.126*** (0.0278)	0.108*** (0.0289)	0.117*** (0.0354)	0.103*** (0.0374)
Upper secondary education	0.203*** (0.0245)	0.184*** (0.0249)	0.221*** (0.0309)	0.186*** (0.0320)
Tertiary education	0.201*** (0.0337)	0.178*** (0.0347)	0.261*** (0.0439)	0.231*** (0.0457)
Age	0.0100*** (0.00160)	0.00990*** (0.00160)	0.0135*** (0.00238)	0.0129*** (0.00237)
Married	0.0225 (0.0224)	0.0282 (0.0224)	0.0470 (0.0296)	0.0565* (0.0298)
Divorced, seperated	0.0408 (0.0353)	0.0497 (0.0353)	0.0679 (0.0437)	0.0859** (0.0436)
No children	0.210*** (0.0236)	0.213*** (0.0236)		
Gender role attitudes				
Scarce jobs should go to men first	-0.0498 (0.0308)	-0.0431 (0.0308)	-0.0560 (0.0414)	-0.0630 (0.0415)
Working mother warm with children	0.137*** (0.0230)	0.129*** (0.0229)	0.183*** (0.0327)	0.171*** (0.0326)
Being a housewife is fulfilling	-0.0865*** (0.0174)	-0.0872*** (0.0175)	-0.124*** (0.0244)	-0.124*** (0.0245)
Important in a job				
good pay	-0.0180 (0.0208)	-0.000874 (0.0212)	-0.0688** (0.0294)	-0.0433 (0.0300)
good hours	0.0215 (0.0182)	0.0224 (0.0181)	0.0196 (0.0254)	0.0168 (0.0254)
Competition is OK	0.129*** (0.0355)	0.122*** (0.0355)	0.128*** (0.0495)	0.118** (0.0495)
Family policy indices				
De Henau's parental leave index		-0.000346 (0.000585)		0.00104 (0.000854)
De Henau's childcare index aged 0-2		0.00162*** (0.000608)		0.00193** (0.000904)
De Henau's childcare index aged 3-5		0.000446 (0.000731)		0.000852 (0.00101)
Observations	2,560	2,560	1,580	1,580

Robust standard errors in parentheses

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

Notes: The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

**Determinants of Part-time work: Effects from an OLS-Regression Model,  
controlling for De Henau, Meulders and O’Dorchai’s (2007a, 2007b) family policy  
indices**

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	-0.0152 (0.0347)	-0.0540 (0.0359)	0.0265 (0.0479)	-0.0175 (0.0505)
Upper secondary education	-0.0330 (0.0306)	-0.0426 (0.0322)	-0.0859** (0.0411)	-0.0660 (0.0435)
Tertiary education	-0.129*** (0.0374)	-0.144*** (0.0385)	-0.188*** (0.0517)	-0.184*** (0.0535)
Age	-0.00407** (0.00200)	-0.00442** (0.00200)	0.000830 (0.00321)	0.00132 (0.00323)
Married	0.0412 (0.0274)	0.0389 (0.0277)	0.0571 (0.0385)	0.0489 (0.0390)
Divorced, seperated	-0.0735* (0.0442)	-0.0736* (0.0441)	-0.111** (0.0561)	-0.131** (0.0564)
No children	-0.147*** (0.0286)	-0.170*** (0.0289)		
Gender role attitudes				
Scarce jobs should go to men first	-0.00961 (0.0425)	-0.00226 (0.0426)	-0.0400 (0.0598)	-0.0363 (0.0599)
Working mother warm with children	-0.0219 (0.0321)	-0.0124 (0.0322)	-0.0867* (0.0477)	-0.0692 (0.0483)
Being a housewife is fulfilling	0.0593*** (0.0208)	0.0760*** (0.0209)	0.0965*** (0.0298)	0.121*** (0.0303)
Important in a job good pay	-0.0889*** (0.0239)	-0.0981*** (0.0244)	-0.0940*** (0.0339)	-0.125*** (0.0353)
good hours	0.0320 (0.0218)	0.0337 (0.0218)	0.0541* (0.0317)	0.0709** (0.0322)
Competition is OK	-0.0230 (0.0439)	0.00806 (0.0439)	0.0841 (0.0633)	0.117* (0.0637)
Family policy indices				
De Henau’s parental leave index		-0.00270*** (0.000714)		-0.00450*** (0.00106)
De Henau’s childcare index aged 0-2		-0.00465*** (0.000690)		-0.00565*** (0.00104)
De Henau’s childcare index aged 3-5		0.00542*** (0.000961)		0.00451*** (0.00134)
Observations	1,797	1,797	1,014	1,014

Robust standard errors in parentheses

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

*Notes:* The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother’s aged 18-40 in 2008 (wave 4).

# Appendix G

## Determinants of Employment Status: Effects from an OLS-Regression Model, controlling for Kangas and Rostgaard's (2007) family policy indices

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	0.0985** (0.0404)	0.0744* (0.0407)	0.0752 (0.0507)	0.0423 (0.0514)
Upper secondary education	0.210*** (0.0360)	0.180*** (0.0375)	0.201*** (0.0458)	0.141*** (0.0488)
Tertiary education	0.175*** (0.0456)	0.148*** (0.0476)	0.231*** (0.0553)	0.174*** (0.0589)
Age	0.0132*** (0.00219)	0.0122*** (0.00218)	0.0163*** (0.00306)	0.0139*** (0.00305)
Married	0.0471 (0.0297)	0.0508* (0.0297)	0.0663* (0.0379)	0.0759** (0.0382)
Divorced, seperated	-0.00781 (0.0448)	0.0164 (0.0447)	0.0305 (0.0548)	0.0697 (0.0550)
No children	0.230*** (0.0320)	0.226*** (0.0319)		
Gender role attitudes				
Scarce jobs should go to men first	-0.0453 (0.0546)	-0.0347 (0.0542)	-0.117* (0.0694)	-0.107 (0.0690)
Working mother warm with children	0.181*** (0.0348)	0.182*** (0.0348)	0.266*** (0.0480)	0.258*** (0.0478)
Being a housewife is fulfilling	-0.0766*** (0.0234)	-0.0513** (0.0239)	-0.0946*** (0.0319)	-0.0707** (0.0325)
Important in a job				
good pay	0.0103 (0.0252)	0.0264 (0.0255)	-0.0213 (0.0344)	-0.00410 (0.0348)
good hours	0.0109 (0.0241)	0.0195 (0.0247)	0.0242 (0.0322)	0.0244 (0.0330)
Competition is OK	0.203*** (0.0530)	0.208*** (0.0534)	0.288*** (0.0731)	0.307*** (0.0737)
Family policy indies				
Kangas's parental leave index		-0.169*** (0.0335)		-0.199*** (0.0473)
Kangas's childcare index aged 0-2		0.340*** (0.0569)		0.417*** (0.0794)
Kangas's childcare index aged 3-5		0.0261 (0.0405)		0.0950* (0.0542)
Observations	1,361	1,361	896	896

Robust standard errors in parentheses

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

Notes: The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).



**Determinants of Part-time work: Effects from an OLS-Regression Model,  
controlling for Kangas and Rostgaard's (2007) family policy indices**

	Women		Only Mothers	
	(1)	(2)	(3)	(4)
Education (primary omitted)				
Secondary education	-0.0699 (0.0549)	-0.0160 (0.0520)	-0.0787 (0.0710)	0.000880 (0.0732)
Upper secondary education	-0.120** (0.0494)	-0.0293 (0.0474)	-0.206*** (0.0634)	-0.0403 (0.0667)
Tertiary education	-0.223*** (0.0549)	-0.0888 (0.0567)	-0.328*** (0.0713)	-0.119 (0.0794)
Age	-0.0105*** (0.00291)	-0.0105*** (0.00293)	-0.00509 (0.00446)	-0.00428 (0.00463)
Married	0.0792** (0.0379)	0.0639* (0.0385)	0.118** (0.0514)	0.0815 (0.0540)
Divorced, seperated	-0.0861 (0.0629)	-0.111* (0.0645)	-0.0915 (0.0765)	-0.169** (0.0809)
No children	-0.262*** (0.0421)	-0.252*** (0.0425)		
Gender role attitudes				
Scarce jobs should go to men first	0.129 (0.0811)	0.106 (0.0791)	0.0456 (0.123)	0.0196 (0.121)
Working mother warm with children	-0.126** (0.0559)	-0.111** (0.0565)	-0.220** (0.0890)	-0.206** (0.0932)
Being a housewife is fulfilling	0.0618** (0.0300)	0.0819*** (0.0307)	0.111*** (0.0417)	0.153*** (0.0445)
Important in a job				
good pay	-0.0505 (0.0321)	-0.0951*** (0.0330)	-0.0767* (0.0442)	-0.155*** (0.0474)
good hours	0.0848*** (0.0309)	0.0750** (0.0321)	0.105** (0.0428)	0.105** (0.0459)
Competition is OK	-0.112 (0.0716)	-0.0925 (0.0736)	-0.0522 (0.104)	-0.0432 (0.111)
Family policy indies				
Kangas's parental leave index		-0.256*** (0.0499)		-0.299*** (0.0769)
Kangas's childcare index aged 0-2		0.108 (0.0780)		-0.0107 (0.117)
Kangas's childcare index aged 3-5		0.235*** (0.0495)		0.234*** (0.0708)
Observations	983	983	595	595

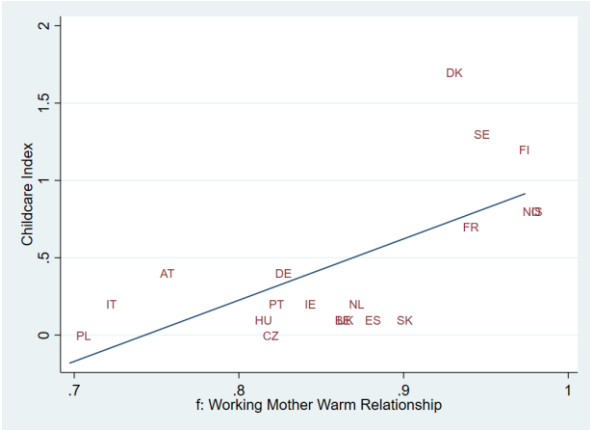
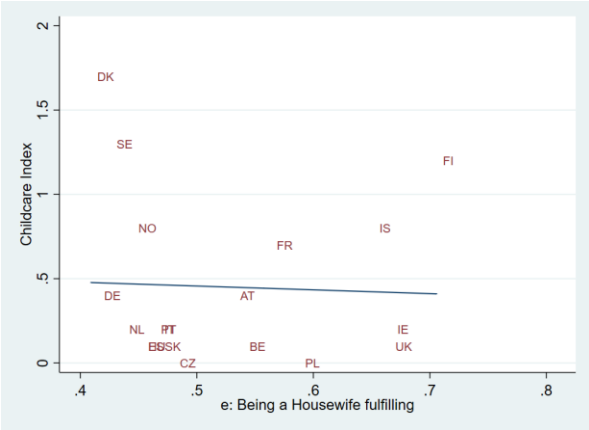
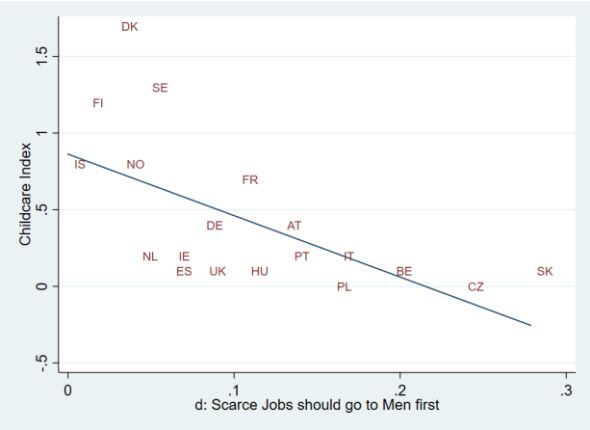
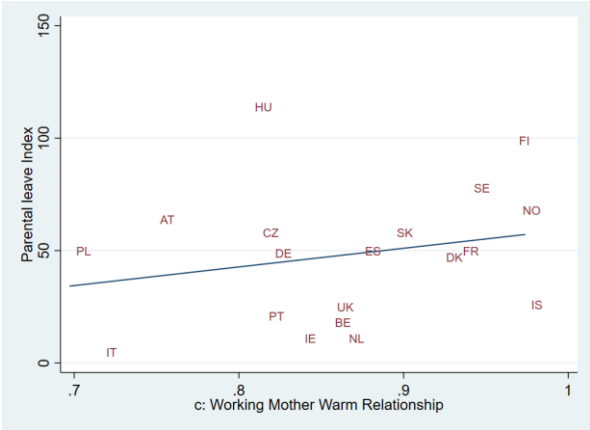
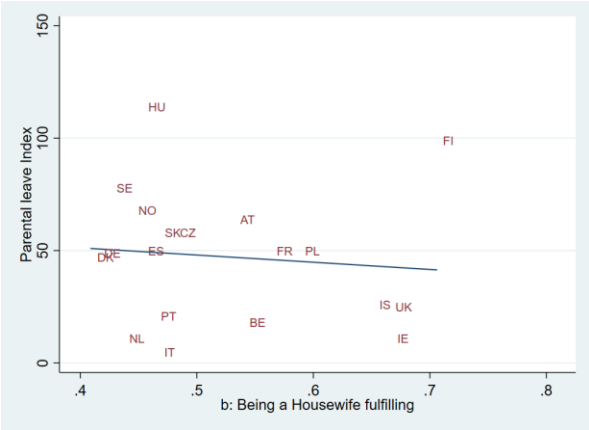
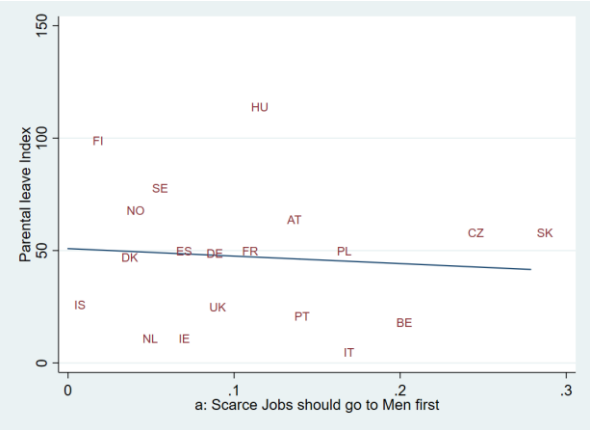
Robust standard errors in parentheses

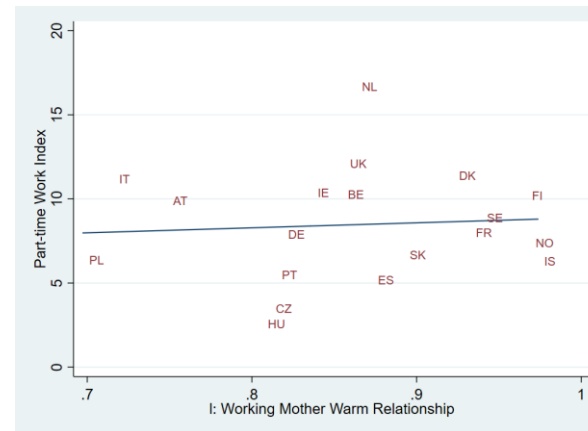
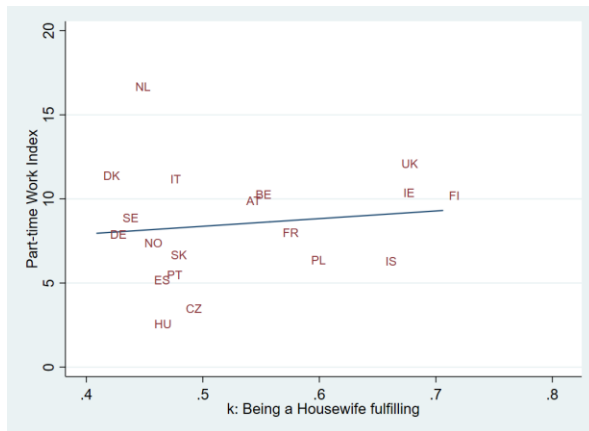
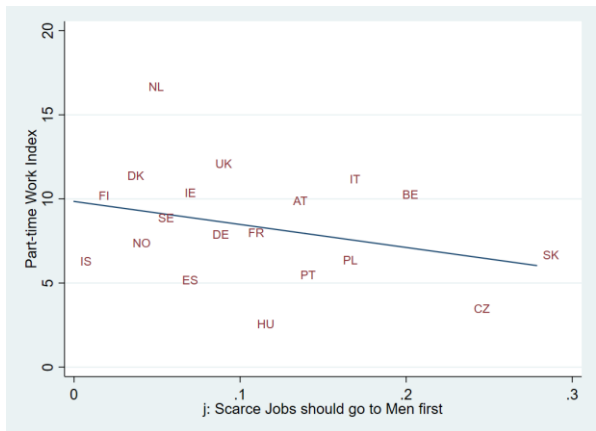
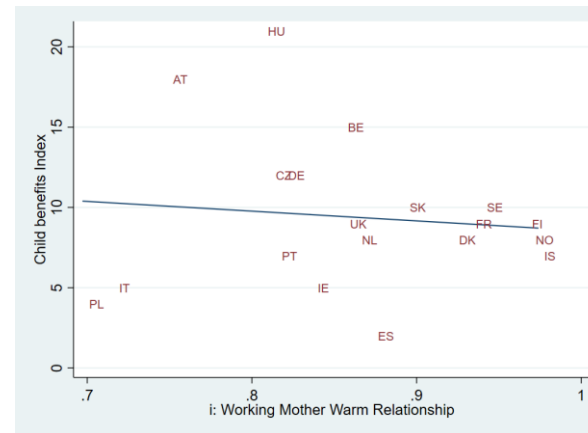
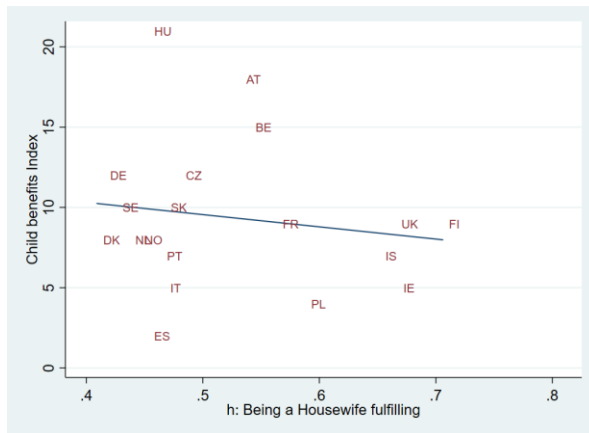
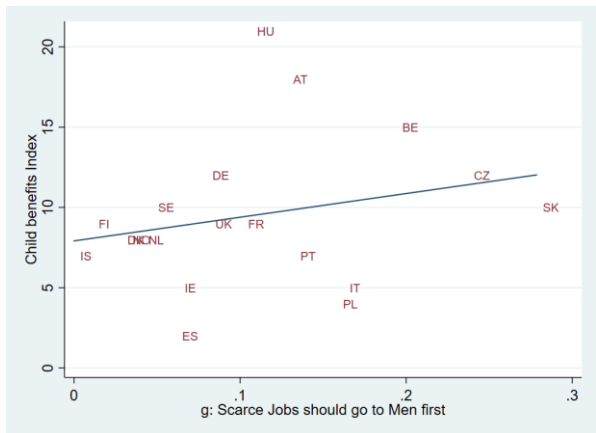
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Notes:* The independent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise. Z-values in parentheses. The sample consists of only mother's aged 18-40 in 2008 (wave 4).

# Appendix H

## Mother's Attitudes and Family Policy Indices across Countries





Notes: This Figure presents the correlations from Abendroth, van der Lippe, and Maas' (2012) four family policy indices and mother's average gender role attitudes across countries.