

Women's working hours

The interplay between gender role attitudes, motherhood, and public childcare support in 23 European countries

Wouter Andringa

*I&O Research, Enschede, The Netherlands and
Institute for Innovation and Governance Studies (IGS),
University of Twente, Enschede, The Netherlands*

Rense Nieuwenhuis

*Swedish Institute for Social Research (SOFI),
Stockholm University, Stockholm, Sweden, and*

Minna van Gerven

*Institute for Innovation and Governance Studies (IGS),
University of Twente, Enschede, The Netherlands*

Abstract

Purpose – The purpose of this paper is to show how the interplay between individual women's gender role attitudes, having young children at home, as well as the country-context characterized by gender egalitarianism and public childcare support, relates to women's working hours in 23 European countries.

Design/methodology/approach – This study presents results of multilevel regression analyses of data from the European Social Survey (Round 2). These micro-level data on 23 European countries were combined with country-level measures on gender traditionalism and childcare expenditure.

Findings – The authors found that the negative association between having young children at home and women's working hours is stronger for women with traditional gender role attitudes compared to women with egalitarian attitudes. The gap in working hours between women with and without young children at home was smaller in countries in which the population holds egalitarian gender role attitudes and in countries with extensive public childcare support. Furthermore, it was found that the gap in employment hours between mothers with traditional or egalitarian attitudes was largest in countries with limited public childcare support.

Social implications – Policy makers should take note that women's employment decisions are not dependent on human capital and household-composition factors alone, but that gender role attitudes matter as well. The authors could not find evidence of the inequality in employment between women with different gender role attitudes being exacerbated in association with childcare support.

Originality/value – The originality of this study lies in the combined (rather than separate) analysis of how countries' social policies (childcare services) and countries' attitudes (gender traditionalism) interact with individual gender role attitudes to shape cross-national variation in women's working hours.

Keywords Women, Labour market, Family, Social policy

Paper type Research paper

Background and research question

Key explanations of women's employment refer both to the individual characteristics of women and households, as well as to the influences of country-level determinants. Recently, the academic interest has turned toward answering the question how macro-level contexts of countries shape micro-level outcomes of individuals (Cooke and Baxter, 2010; Crompton and Lyonette, 2006; Pettit and Hook, 2005; Maldonado and



Nieuwenhuis, 2015; Matysiak and Vignoli, 2008; Van der Lippe and Van Dijk, 2002; Nieuwenhuis *et al.*, 2012). This study provides such a macro-micro analysis of how individual women's gender role attitudes and having young children at home are associated with their working hours, and how these associations vary across countries with different levels of expenditure on childcare services and across countries in which the population typically has either traditional or egalitarian gender role attitudes.

Individual-level factors that are often found to be associated with women's employment include women's educational level, marital status, motherhood, and gender role attitudes (Becker, 1981, 1985; Cohen and Bianchi, 1999; Fuwa, 2004; Polavieja, 2008). The degree to which these individual-level factors influence women's employment decisions, however, is not constant but varies between countries. This variation is thought to be associated with contextual factors, such as social policy (Nordenmark, 2004) and country-level egalitarianism regarding the role of mothers in the labor force (Albrecht *et al.*, 2000; Crompton and Lyonette, 2006).

Explanations of women's employment based on the interplay between individual-level gender role attitudes and country-level gender egalitarianism regarding women's employment refer to the mismatch between the promotion of gender equality for individuals on the one hand and societal values and institutions that still promote traditional family models on the other. This creates a situation where many women pursue education and work on the same level as men, then later find out that professional life is not very compatible with family life (McDonald, 2000). The key idea in this perspective is that gender role attitudes, ideas about the social roles that men and women are supposed to perform in society, are important in explaining work behavior of women. This notion of a mismatch is also found in the research of Rindfuss *et al.* (2003) on role incompatibility between women's worker and family roles. In their conclusion, Rindfuss *et al.* (2003, p. 430) discuss the need for "comparable surveys across countries indicating the attitudinal/normative climate in those countries regarding various aspects of both combining of work and child-rearing and aspects of the linkage between marriage and motherhood." One such study found that a woman's individual background was more important in shaping her employment decisions when she lives in a gender egalitarian country, compared to when she lives in a country in which the population holds a traditional gender ideology (Fuwa, 2004). Alternatively, Uunk *et al.* (2005) found that country-level egalitarianism toward women's employment affected women's employment, although the effect could be explained by also including publicly supported childcare arrangements. In this latter study, however, person-level gender role attitudes were not be accounted for, nor the interplay between person-level gender role attitudes, having young children at home and childcare support. In general, many studies have either focussed on how the association between demographic characteristics of women (e.g. motherhood) and their employment is shaped by the country-context, or how their personal gender role attitudes shape employment decisions. We combine both. Therefore, in this study we answer two questions:

- (1) To what extent are the number of weekly hours women spend on paid employment associated with personal gender role attitudes, having young children at home, and their interplay?
- (2) To what extent are the associations between personal gender role attitudes, having young children at home and women's working hours affected by country-level gender egalitarianism and countries' expenditure on childcare services?

By answering these questions, we contribute to the literature in two ways. First, we adopt a macro-micro comparative perspective that is based on a micro-level theory on women's employment. From different assumptions, we derive contrasting hypotheses on how country-context is linked with the interplay between women's personal-level gender role attitudes, having young children at home and working hours. These contrasting hypotheses are tested in our empirical analyses, to show that only one position is supported by the data. Second, by combining household economic theories with theories on gender role attitudes we demonstrate that explanations from these perspectives are complementary rather than competing. Doing so, we show how the interplay between women's employment, personal gender role attitudes and having young children at home are shaped by the macro-level country-context in which they live. Previous studies found that country-level attitudes on women's employment affect the impact of motherhood on women's working hours (Uunk *et al.*, 2005), as well as the interplay between country-level and person-level attitudes on women's employment (Fuwa, 2004), but did not study the interplay between having children and gender role attitudes, simultaneously with the country-level context characterized by both family policies and gender role attitudes in the countries' population. The current study contributes explicit tests of hypotheses on how the interaction effect of children and individual attitudes on women's working hours is moderated by the country-level gender egalitarianism and expenditure on childcare services.

Theory

In this theoretical paragraph, we combine three types of individual-level factors that are often found to be associated with women's employment and working hours: investments in human capital, household composition, and individual women's gender role attitudes. We argue that studying how the interplay between individual women's demographic background and their attitudes affects their employment decisions can contribute to our understanding of women's employment. First, we outline the economic household theories on the effects of human capital and household composition, then the theories on gender role attitudes. Finally, we hypothesize on how country-level gender egalitarianism and childcare service provision shape the micro-level outcomes.

Economic household theories on women's employment view employment decisions as resulting from an allocation issue within the family and subjected to expected returns from investments in human capital (Polavieja, 2008; Becker, 1981, 1985). The basis of the human capital approach is that continued investments in human capital such as educational level result in increasing returns on the labor market. Differences in employment rates between men and women are then attributed to differences in human capital investments, such as the education gap between men and women. The decline of the "male breadwinner" model in practice, and the increased labor force participation of married women in the twentieth century are, according to Becker (1985), a result of women's increased earning power.

Next to investments in human capital, household composition is considered as an important factor in human capital models of female employment. According to the economic perspective, partnered households have the advantage over single households that its members can choose to specialize in market work or housework, while in a single person household one person must allocate time and effort to both activities (Becker, 1985). Based on the human capital theory outlined above, it is

argued that men often can expect higher returns from employment on the labor market than their spouses, and therefore women are less likely to specialize in market work compared to men. As a result, women living in shared households are less likely to be employed than single women. The presence of young children in the household has strong repercussions for work decisions as the demand for care activities at home (outside of the labor market) is increased. The economic perspective hypothesizes, again based on the human capital theory, that this predominantly affects women because they – on average – have fewer investments in human capital. Time and energy spent on childcare competes with allocation to employment responsibilities and this leads to a higher risk of interrupted work careers, especially when children are young (Becker, 1985; Polavieja, 2008). When children are present in the household, the task distribution between spouses is renegotiated, and as a result of differences in human capital investments and earning potential on the labor market, women leave employment more often than men.

The economic perspective has not been without criticism, and other factors affecting women's employment have been suggested. Hakim's (2002) preference theory challenges the utility of human capital theory. Hakim (2002, p. 432) claims that conventional human capital factors overlook the importance of motivations, values and attitudes as key determinants of female labor market behavior. This claim is also put forward in an extensive body of literature discussing gender role attitudes as a set of ideas about the goals, expectation, and actions associated with a particular gender (see also Eagly and Wood, 1999; Nordenmark, 2004). Through the socialization process children inherit the social norms, customs and beliefs of their society and learn to reproduce the behavior and attitudes that are appropriate for men and women in social interaction. That is, in the words of West and Zimmerman (2009), they are "doing gender": the assumption and formation of gender role attitudes and associated behavior in interaction with normative expectations expressed by the social context (Cooke, 2006, p. 443). A distinction is often made between traditional and egalitarian gender role attitudes (Nordenmark, 2004; Fuwa, 2004). In the traditional view women are better off training interpersonal skills that are useful in both nurturing and occupations more compatible with having children at home (teacher, nurse, social worker) (Eagly and Wood, 1999), although it should be mentioned that the concept of "women friendly" jobs has been questioned (England, 1992; Glass and Camarigg, 1992; Glauber, 2011). In contrast, the egalitarian view is linked to the equal opportunities revolution that established equal access to all professions for women.

The key argument in this strand of literature is that egalitarian gender role attitudes stimulate women's employment independently of other (economic) determinants of women's employment such as having young children at home. We further this argument by testing whether women's employment is not only associated with gender role attitudes and having young children at home independently, but also by the interplay between attitudes and having young children. We focus on the interplay between gender role attitudes and having children at home, as it was found in country-comparative research that the presence of children in the household was the most important factor in explaining women's employment (Van der Lippe and Van Dijk, 2002). In our introduction traditional gender role attitudes were described as the attitude that professional life for women is not very compatible with family life (McDonald, 2000), and egalitarian gender role attitudes as those entailing that

women's employment is not at odds with family responsibility. Hence, we expect gender role attitudes to affect women's employment more strongly among those who have children in the household:

- H1.* Women with egalitarian gender role attitudes work more hours than women with traditional gender role attitudes, and women with children at home work fewer hours than women without children. The degree to which gender role attitudes are associated with women's working hours is stronger among women who have children in the household compared to women without children.

This first hypothesis provides a preliminary answer to our first research question. Below, we hypothesize on how the interplay between individual women's gender role attitudes, having children at home and working hours is affected by the degree of gender egalitarianism of a country's population and public childcare provision.

The literature on gender role attitudes views differences in employment levels of women between countries as representative of differences in gender ideology. In most studies, countries are classified as having more traditional or more egalitarian norms regarding the distribution of tasks between men and women (Fuwa, 2004; Nordenmark, 2004; Uunk *et al.*, 2005). Gender roles are transferred to individuals through a national education system, labor market organization, legal system, and media. Likewise social policies, such as public childcare services, recognize and offer institutional support for specific models of caregiving and family organization while sanctioning others (cf. Ferree, 2009; Orloff, 2009). Thus, a country-level context that impedes the employment of particularly mothers, as characterized by either a population with traditional gender role attitudes or by limited provision of public childcare services, were argued to negatively affect women's working hours (Uunk *et al.*, 2005):

- H2.* The negative association between having children at home and women's working hours is weaker in country-contexts that are characterized as gender egalitarian (e.g. a population with egalitarian gender role attitudes and extensive childcare services).

Here, we combine arguments on how country-level contexts affect women's working hours with our individual-level arguments. The importance of this combination lies in the fact that both the above-mentioned contextual factors are directly related to the employment of women with children at home, rather than all women: the employment decisions of women with young children in the household are most likely to be influenced by a context in which many other people hold a traditional or egalitarian gender role attitude as well as they are likely to be affected by (a lack of) childcare services. Regarding the interplay between having children at home, contextual conditions and individual women's gender role attitudes, we derive opposing hypotheses from two different assumptions encountered in the literature.

The first assumption from which we derive a hypothesis is that a context that facilitates maternal employment (or alternatively does not impede maternal employment) will be associated with more working hours of women with young children at home (compared to women without children) and of women who individually have egalitarian gender role attitudes. This assumption is in line with findings by Fuwa (2004), who found that women's individual assets for employment were more important in explaining their employment in a gender egalitarian context. In countries in which the population has more traditional gender role attitudes women who themselves have egalitarian attitudes will be held accountable more strongly for being employed while having young children

at home, thus depressing working hours, while traditional women in a gender egalitarian context can (more) freely choose their working hours. Similarly, a country-context characterized by high expenditure on public childcare services more strongly facilitates maternal employment than a country-context characterized by low such expenditure. From this, we extend *H2* to derive the following hypothesis:

H3a. The negative association between having children at home and women's working hours is weaker in country-contexts that are characterized as gender egalitarian, and this influence of a gender egalitarian country-context is lower among women with traditional gender role attitudes than among women with egalitarian gender role attitudes.

An alternative hypothesis is derived from the assumption that because women with egalitarian gender role attitudes are less strongly affected in their working hours by having children at home than women with traditional gender roles attitudes (cf. *H1*), they benefit less from a gender egalitarian country-context that facilitates or condones maternal employment. This assumption treats egalitarian gender role attitudes as a resource for women's employment. It is in line with the argument found in the literature that those women with a strong inclination (or resources) for employment will likely be employed even in a context that does not favor women's or maternal employment (e.g. Korpi *et al.*, 2013). An alternative formulation of this argument reads that traditional gender role attitudes are reinforced by a country-context that impedes maternal employment. This leads to the alternative hypothesis:

H3b. The negative association between having children at home and women's working hours is weaker in country-contexts that are characterized as gender egalitarian, and this influence of a gender egalitarian country-context is lower among women with egalitarian gender role attitudes than among women with traditional gender role attitudes.

Data and method

The hypotheses in this study are tested using data from the European Social Survey (ESS) Round 2 2004/2005, edition 3.2[1]. The ESS uses biennial rounds of surveys consisting of a core module that is repeated at each round and two or three rotating modules. The core module provides continuity in the measurement of socio-economic, political and demographic variables, while the rotating modules provide more in depth information centered on a specific theme. We used the ESS because it contains a rotating module specifically focussed on the interrelations between work, family and well-being. All countries use probability sampling, sometimes single-stage but often multi-stage. The average response rate for all countries is 61.6 percent, varying from 43.6 percent in France to 79.1 percent in Estonia.

Sample

There are 26 participating countries in ESS, of which 25 are included in the integrated data file with a total sample size of 47,537 individuals. The data for Italy is not included because no respondents were asked the full version of the questionnaire and the expert panel of ESS did not sign off the sample design (ESS Round 2: European Social Survey, 2011). Based on preliminary descriptive statistics we removed Turkey from the analysis as it is too much of an outlier in the dependent variable: while all other countries had female employment rates of at least 50 percent Turkey only had 13 percent. Observations from Ukraine had to be removed from the data, as the required country-level data on this

country could not be found. We limit our analyses to the women in our sample. Further sample restrictions are to ensure we observe a working age population: no pensioners, no students in full-time education and an age restriction of 20-59 years. Only observations without missing values on any variable were used. This resulted in a final sample size of 12,665 in 23 countries. All analyses use the design and population weights provided in the ESS to account for selection bias resulting from national differences in sampling methods and variation in sample sizes relative to country populations. Table I displays a summary of the variables used in the analysis, including sample sizes, percentages or means and standard deviations where appropriate.

Measures

The dependent variable in this study is hours spent on paid employment per week, excluding any paid and unpaid overtime. We used working hours to account for the substantial variation across Europe in part time working rates and because the item used for one of our key independent variables, gender role attitudes, reflects “cutting down on employment,” which pertains to women working fewer hours. We used a measure that is commonly applied in comparative research (e.g. Crompton and Lyonette, 2006; Uunk *et al.*, 2005). We point out that for our purpose, using this measure is not very sensitive to country bias across working time regimes. The reason for that is that to test our hypotheses, our analyses compare two groups of women within countries (mothers/women without children, and women with traditional/egalitarian gender role attitudes) in how their working hours differ. This means that any bias in the measurement of working hours that differs across countries is not picked up in the analyses, as we compare these groups of women within countries. After it is established to what extent the number of working hours of mothers and women with traditional gender role attitudes differ (within countries, that is), it is determined to what extent these differences relate to country-level variables.

There are two independent variables of key interest at the level of the individual. The first is the degree to which a woman has traditional gender role attitudes. These were measured using a single item in the special ESS rotating module on the interrelations between work, family and well-being: “A woman should be prepared to cut down on her paid work for the sake of the family” (question G6). Possible responses ranged from “disagree strongly” (scored -2) to “agree strongly” (scored 2) in five increments. These scores were used as an interval variable (higher values representing more traditional gender role attitudes). We did not construct a scale of gender role attitudes as is common

	Proportion	Min.	Max.	Mean	SD
Working hours		0	75	25.35	19.56
Age		20	59	40.55	10.46
Age (standardized)		-1.97	1.76	0	1
Education		0	32	12.61	3.62
Partnered household	0.70	0	1	–	–
Young child at home	0.37	0	1	–	–
Traditionalism of gender role attitudes		-2	2	0.07	1.16
Country: childcare expenditure (centered)		-1.65	4.04	0	1.45
Country: gender traditionalism (centered)		-0.76	0.46	0	0.34

Table I.
Descriptive statistics **Note:** *n* = 12,665

in sociological research on relations between attitudes and behavior (Braun *et al.*, 1994; Greenstein, 1995; Fuwa, 2004; Nordenmark, 2004), but instead opted for the measure in the ESS that is most specific about the relation between family and work responsibilities.

The second independent variable of key interest is having children at home. This was measured using the presence of any children aged 12 or under in the household. Children aged 12 or under can be considered young since they still need supervision for many of their daily tasks. Even though children will go to school (instead of childcare) at a much younger age than 12, part of the gender role attitudes pertain to the expectation that mothers are at home when their children come home from school – therefore potentially reducing women's working hours.

Education is measured as the number of years of full-time education completed. Shared households refer to women who reported living together with a husband or partner, as in this situation the household as a whole could benefit from specialization by its members. The ESS team calculated the age of respondents based on year of birth and date of the interview.

Prevailing gender norms in society are measured by aggregating the person-level gender role traditionalism to the average score per country (with higher values represent higher levels of gender traditionalism). For each country we calculated the mean score on this variable given by all respondents in that respective country (i.e. also including the men in the sample). The resulting variable is called country traditionalism.

Finally, we measured public provision of childcare services as government expenses on childcare by head of the population. This expenditure was expressed in 2004 US dollars. This measure was obtained from the OECD Social Expenditure database (Adema *et al.*, 2011).

To illustrate both the levels of (average) gender traditionalism and childcare expenditure for the 23 countries in our study, and in addition the relationship between these two country-level characteristics, Figure 1 visualizes the bivariate association between the (uncentered) scores for our two country-level variables. There is substantial variation across countries with respect to both childcare expenditure (ranging from about 600 US dollars annually per head of the population in Denmark to less than 50 in for instance Greece) and traditional gender attitudes (most traditional in Hungary and least traditional in Denmark). It is clear from Figure 1 that countries in which the population holds (on average) traditional attitudes toward women's employment, expenditure on childcare support tends to be low. Nevertheless, even at similar levels of childcare expenditure differences across countries persist in terms of gender traditionalism. For instance, at an expenditure level of around \$300, Luxembourg and France display more traditional gender role attitudes than Finland and Norway.

Method

Our hypotheses are tested using multilevel regression modeling. The data are analyzed using the LME4 extension package (Bates *et al.*, 2010) in the R software (R Core Team, 2012). Person-level observations were nested within countries. In all models the intercept is random within countries, accounting for country-variation in women's working hours. In addition, we estimate random slopes for the associations of women's working hours with both women's gender role attitudes and of having children at home.

We included no country-level control variables in our regression models, as these models are based on 23 countries. With such a relatively small number of country-level observations, the regression model is easily over-specified (Achen, 2002). Therefore, we only estimate one cross-level interaction at a time.

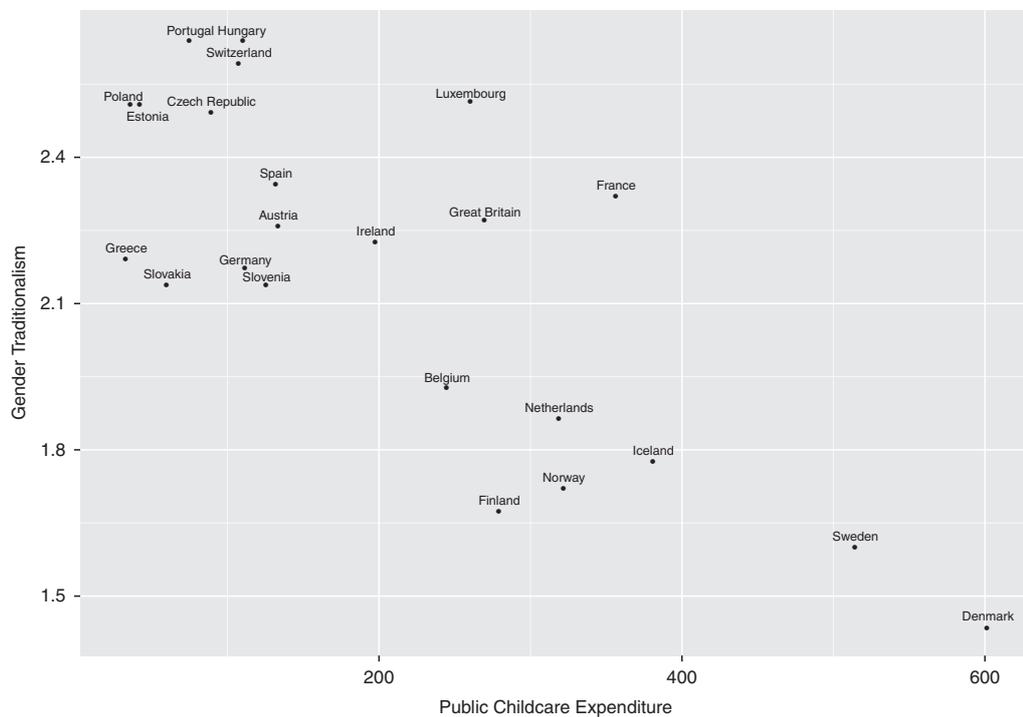


Figure 1. Public childcare expenditure and gender traditionalism in 23 European countries

Results

Our hypotheses are tested using the multilevel regression models presented in Table II. First, a baseline model is presented (indicated as Model 0) in which women's working hours are regressed on the two independent variables of key interest: having a young child at home and the level of traditionalism of women's gender role attitudes. In addition, a random intercept and random slopes for the independent variables were estimated. As was expected, having a young child at home and traditional gender role attitudes are negatively associated with women's working hours. In addition, substantial cross-national variation exists in the strength of these associations. This is indicated by the random slope variation.

In Model 1, several individual-level controls and two country-level variables are added. The controls indicate that women's working hours are lower with age (and the curvilinear effect indicates that this association is increasingly negative with age). In line with the economic arguments outlined in our theoretical section, higher educated women work more hours, and women living in a partnered household work fewer hours. The findings still indicate that women with traditional gender role attitudes work fewer hours than women with egalitarian gender role attitudes, and women with young children at home work fewer than women without children. With these individual controls the country-level variables on gender role traditionalism and childcare expenditure are not (significantly) associated with women's working hours. This is in line with our argument that both indicators may specifically affect women who have young children in the household, which will be tested in subsequent models.

The inclusion of individual-level controls and two country-level explanatory variables accounts for part of the variation across countries in the number of hours worked by women (indicated by the random intercept variance that decreased from 24 in Model 0 to 18.4 in Model 1). Similarly, the addition of the individual-level variables accounts for part

	Model 0	Model 1	Model 2	Model 3	Model 4
	B (se)				
<i>Fixed effects</i>					
Intercept	28.14 (1.11) ***	19.30 (1.21) ***	19.30 (1.21) ***	19.34 (1.20) ***	19.29 (1.20) ***
Age		-1.54 (0.18) ***	-1.56 (0.18) ***	-1.56 (0.18) ***	-1.56 (0.18) ***
Age ²		-2.26 (0.18) ***	-2.26 (0.18) ***	-2.26 (0.18) ***	-2.26 (0.18) ***
Education		1.00 (0.05) ***	1.00 (0.05) ***	1.00 (0.05) ***	1.00 (0.05) ***
Partnered household		-0.76 (0.38) **	-0.75 (0.38) **	-0.74 (0.38) **	-0.73 (0.38) *
Young child at home		-9.32 (1.12) ***	-9.26 (1.10) ***	-9.28 (1.06) ***	-9.09 (1.04) ***
Traditionalism of gender role attitudes		-1.67 (0.26) ***	-1.43 (0.28) ***	-1.43 (0.28) ***	-1.47 (0.28) ***
Young child × traditional attitudes			-0.65 (0.29) **	-0.59 (0.30) **	-0.68 (0.29) **
Country: childcare expenditure		0.61 (0.83)	0.57 (0.83)	0.51 (0.82)	0.40 (0.92)
Country: gender traditionalism		2.67 (3.71)	2.55 (3.71)	3.86 (4.01)	3.02 (3.72)
<i>Country: gender traditionalism ×</i>					
Young child at home				-5.11 (3.06) *	
Traditionalism gender role attitudes				-0.24 (0.99)	
Young child at home × traditional attitudes				-0.30 (1.29)	
<i>Childcare expenditure ×</i>					
Young child at home					1.35 (0.68) **
Traditionalism gender role attitudes					-0.03 (0.20)
Young child at home × traditional attitudes					0.60 (0.23) ***
<i>Variance components</i>					
Intercept	24.00	18.43	18.35	18.00	18.08
Young child at home	24.75	20.23	19.49	17.05	16.64
Traditionalism of: gender role attitudes	1.14	0.67	0.68	0.72	0.67
Residual	334.81	315.10	314.99	314.96	314.76
Deviance	109,692	108,913	108,908	108,905	108,896

Notes: Multilevel regression of 12,665 individuals in 23 countries. Hypotheses were tested one-tailed. Variance components tested with log likelihood tests. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table II.
Women's working hours regressed having children at home and gender role attitudes, interacted with country-level egalitarianism and childcare expenditure

of the variation across countries in the degree to which women’s working hours are associated with traditional gender role attitudes (random slope variance decreased from 1.14 in Model 0 to 0.67 in Model 1) and having a young child at home (random slope variance decreased from 24.75 to 20.2). Even though country-level variables were included in this model as well, these did not affect the random slope variance (this was confirmed in additional model estimates, not presented here). To test the degree to which these country-level variables can account for the cross-national variability in these associations between having children at home and traditional gender role attitudes and women’s working hours, cross-level interactions need to be estimated.

Before testing our hypotheses, however, we illustrate the magnitude and cross-country variability of how strongly women’s working hours are associated with their personal gender role attitudes and with having children at home. This is done in Figure 2, presenting the so-called post-hoc estimates of the random slopes per country. The values are the sum of the fixed effect and the random effect per country. The countries in Figure 2 are sorted by the magnitude of the effect of having children at home on women’s working hours. The left panel shows the estimated effect size of having children in the household per country, expressed as the number of hours women with children work less compared to women without children. In all countries, women’s working hours are negatively associated with having young children in the household, with women in Portugal working on average two hours less per week, and women in Belgium four hours, when they have children. This association with having children and women’s working hours goes all the way up to women with children working about 15 hours less in the Czech Republic and more than 17 hours less than in Hungary. The panel on the right shows how women’s working hours are associated with their personal gender role attitudes. The effect sizes shown represent the effect of the full range of the gender role attitudes variable (the range between “disagree strongly” to “agree strongly”). The magnitude of this effect varies substantially across

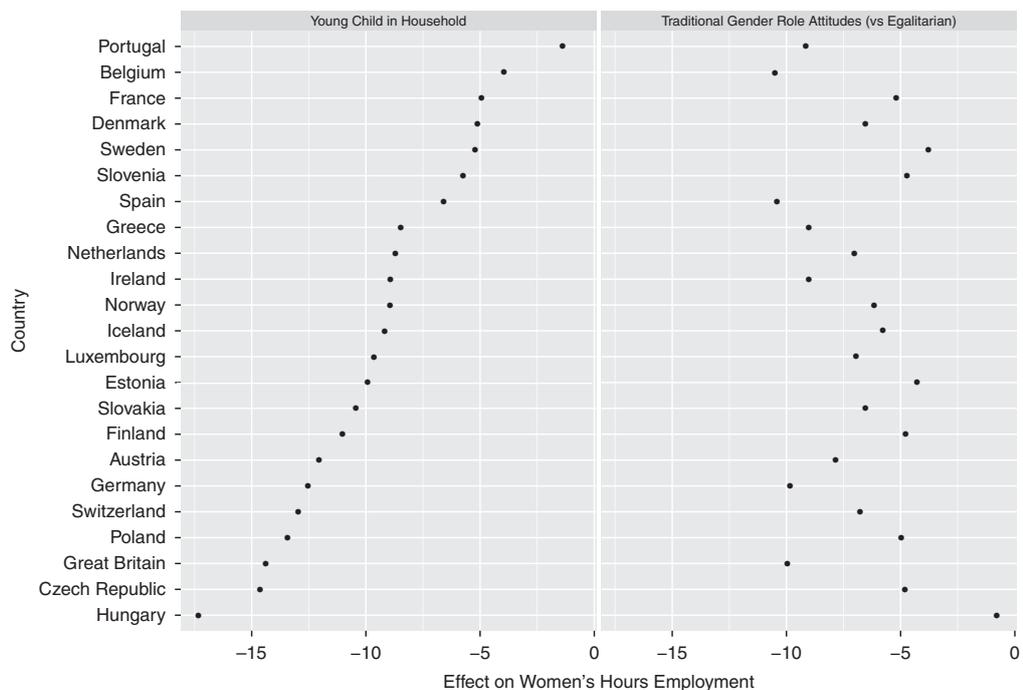


Figure 2. Associations between women’s working hours and having young children (left panel) and gender role attitudes (right panel) in 23 European countries

countries, but somewhat less so than the effect of having children at home. For instance, in Hungary women with different gender role attitudes hardly differ with respect to their weekly working hours (i.e. the estimate is close to 0). In Belgium, Spain, Germany, and Great Britain, on the other hand, women who have traditional gender role attitudes on average work about ten hours less than women who have a gender egalitarian attitudes. Finally, with respect to Figure 2, a comparison between the left and the right panel indicates that there is little to no correlation between the effect size of having children at home and the effect size of gender role attitudes. This means that countries in which women's weekly working hours are lower in association with having children are not necessarily also countries in which women who have traditional role attitudes work fewer hours.

In Model 2 (presented in Table II) our hypothesis is tested that having a young child at home is more strongly associated with fewer working hours among women with traditional gender role attitudes, compared to women with egalitarian attitudes. The interaction parameter between having a young child at home and traditional attitudes is negative (and statistically significant), indicating that the negative association between having children at home and women's working hours is more strongly negative among women with traditional attitudes. An alternative interpretation of this parameter is that traditional gender role attitudes are negatively associated with women's working hours and that this association is stronger among women who have children in the household compared to women without children. These findings corroborate *H1*.

In Model 3, we estimated the cross-level interaction between country traditionalism, having young children at home, and traditional (person-level) gender role attitudes. The results show that having young children in the household is negatively associated with women's working hours, and more so in countries in which the population on average holds traditional attitudes on gender roles. This is indicated by the negative interaction parameter between country traditionalism and having a young child at home. This parameter is statistically significant, but only borderline so. Further estimates show that this interaction effect of country-level gender traditionalism is not different for women who have traditional or egalitarian gender role attitudes.

Finally, in Model 4, we tested the cross-level interaction between childcare expenditure, having a young child at home, and women's gender role attitudes. The results indicate that having young children in the household is less negatively associated with women's working hours in countries with higher expenditure on childcare services. Moreover, the three-way interaction between childcare expenditure, having children in the household and traditionalism of women's gender role attitudes indicates that (expenditure on) childcare services are more effective among women with traditional gender role attitudes (compared to among women with egalitarian gender role attitudes).

The variation across countries in the strength of the association between having children at home and women's working hours is partially explained by the inclusion of both gender traditionalism and childcare expenditure, indicated by the slope variance now estimated at 17.05 and 16.64, respectively. This is substantially lower than in our to baseline Model 0 (indicating 31 percent explained variance) and our Model 1 including all controls (16 percent of the variance in this model was explained by the cross-level interactions). Cross-national variation in the association between women's gender role attitudes and working hour was not further explained (compared to Model 1 with all controls) by either the interaction with country-level gender traditionalism or the interaction with childcare expenditure.

Our findings are in line with *H2* that stated that the negative association between having children in the household and women's working hours is weaker in country-contexts that are characterized as gender egalitarian (e.g. a population with egalitarian gender role attitudes and extensive childcare services), although the effect of country-level gender egalitarianism was only borderline significant. Regarding our (contrasting) *H3a* and *H3b*, we could not find any evidence that the influence of country-level gender traditionalism was different for women who have traditional or egalitarian gender role attitudes. Our findings regarding childcare support reject *H3a* and are in line with *H3b*, expecting that the influence of a gender egalitarian country-context is stronger among women with traditional gender role attitudes than among women with egalitarian gender role attitudes.

Model evaluation

A common challenge in country-comparative research is the relative limited number of countries available for analysis, and directly related to that is the limited number of country-level variables that can be accounted for in multilevel models. We included two country-level variables in our regression models, but could not estimate the cross-level interactions with these two country-level variables simultaneously. To check whether our regression models were over-specified, we have performed two sets of additional analyses.

First, we estimated a set of regression models with only one country-level variable, and only one random slope at the same time. These regression models are less likely to be over-specified and therefore provide an evaluation of the presented models. However, as these models cannot account for the interplay between country-context and the interaction between having children at home and individual gender role attitudes, these models could not be used to test our hypotheses and are therefore not presented. These additional models confirmed our findings presented above that having children at home is less negatively associated with women's working hours in countries with a context that is characterized by gender egalitarian attitudes and high expenditure on childcare services.

Second, we have evaluated our regression models for the presence of influential cases (Nieuwenhuis *et al.*, 2012). In Model 4, two influential cases at the country-level were identified based on Cook's Distance: Switzerland and the Czech Republic. Separate deletion of either of (the observations nested in) these countries, however, did not substantively alter the conclusions. This conclusion, combined with the results of the additional regression models described above, suggest that our findings are not biased by over specification of our regression model and are consistent across different model specifications.

Conclusion and discussion

An extensive literature exists on how women's employment and working hours are influenced by the context of the country they live in, both dealing with the outcomes of policy contexts (e.g. Jaumotte, 2003) and the (normative) context of a population's attitudes toward women's employment (e.g. Fuwa, 2004; Uunk *et al.*, 2005). Following a call for integrating micro-level and macro-level explanations of women's employment in country-comparative studies (Van der Lippe and Van Dijk, 2002), an increasing interest in the literature is studying how macro-level contexts shape micro-level outcomes (e.g. Maldonado and Nieuwenhuis, 2015; Matysiak and Vignoli, 2008; Pettit and Hook, 2005; Nieuwenhuis *et al.*, 2012). That is, to study how the associations of individual

women's characteristics with her employment decisions are shaped by the context of the country she lives in (Fuwa, 2004). To this literature, the current study contributes answers to two research questions.

The first question was to what extent the number of weekly hours women spend on paid employment were associated with personal gender role attitudes, having young children at home, and their interplay. We found that women with children at home and women with traditional gender attitudes work fewer hours than women without children and women with egalitarian gender role attitudes. Moreover, we showed that the negative association between having children in the household and women's working hours was stronger among women with traditional gender role attitudes. Testing this interplay was important, as attitudes toward women's roles and employment to a large extent relate to the employment of mothers specifically (Uunk *et al.*, 2005), as was also reflected in the survey item we used to measure this attitude.

The main contribution of this study, however, was to examine how the interplay between women's gender role attitudes and having children at home was affected by the country-context. We did so in answer to our second research question, pertaining to the extent to which the associations between personal gender role attitudes, having young children at home and women's working hours are affected by country-level gender egalitarianism and countries' expenditure on childcare services.

Our analyses showed that the degree to which women with children in the household work fewer hours than women without children was stronger in countries in which the population holds traditional gender attitudes (even while controlling for women's personal gender role attitudes), and in countries which lower expenditure on childcare support.

It should be emphasized that due to the cross-sectional nature of our data, no causal claims can be inferred from our findings. It is also not possible to indicate the direction of associations. For instance, we cannot infer whether women with young children at home reduce their working hours, that women who work long hours are less likely to have a child, or that both processes take place. Nevertheless, it is possible to interpret the degree to which women with young children work fewer hours as an indication of role incompatibility between women's employment and having children (cf. Blanchet and Pennec, 1993). This degree of incompatibility was found to vary across women with different role attitudes, and across countries. We evaluated our models for the presence of influential cases, and found that the deletion of single countries did not substantially affect our findings. This points toward how the pattern we found in our analyses did not result from the inclusion of one specific country, but is more general in nature. Switzerland and the Czech Republic, the two countries with a relatively strong influence on the regression findings, fit the overall pattern in the sense that these countries both have low expenditure on public childcare while in these countries women's working hours are strongly negatively influenced by motherhood. More difficult to interpret is the difference between Spain and Hungary shown in the descriptive statistics of Figures 1 and 2. Both countries show similar levels of childcare expenditure and gender traditionalism. In Hungary, however, women's working hours are strongly negatively associated with having a young child in the household, whereas her working hours are not or only weakly associated with having traditional gender role attitudes. In Spain the opposite was found, with women's working hours more strongly negatively associated with gender role attitudes but only to a very limited extent with having children in the household. These latter findings proved not to be problematic in the sense that these countries overly influenced our analyses, but would make for an interesting starting point for future country-specific case studies (cf. Lieberman, 2005).

The importance of explicitly studying the interplay between having children in the household and women's personal gender role attitudes showed in the fact that expenditure on public childcare services was only positively related to the working hours of women with children at home, and that the association between women's personal gender role attitudes and their working hours was particularly salient among women with children at home. Hence, it was found that (expenditure on) childcare support was particularly associated with the working hours of women with traditional gender role attitudes who have children in the household. As we stated in the introduction, previous studies found that country-level attitudes on women's employment affect the impact of motherhood on women's working hours (Uunk *et al.*, 2005), as well as the interplay between country-level and person-level attitudes on women's employment (Fuwa, 2004). However, these studies did not test the interplay between having children at home and gender role attitudes, simultaneously with the country-level context characterized by both family policies and gender role attitudes in the countries' population.

We formulated two contrasting hypotheses on how women with traditional or egalitarian gender role attitudes would respond differently to a country-context that endorsed maternal employment. These hypotheses were derived from different assumptions. The hypothesis that was derived from the assumption that country-contexts that facilitate or condone maternal employment will have the strongest impact among those women who have egalitarian gender role attitudes, had to be rejected. Instead, regarding expenditure on childcare support, we found support for the hypothesis derived from the assumption that women with a strong inclination for employment (including egalitarian gender role attitudes) will more likely be employed even in a context that does not facilitate or condone maternal employment.

This latter finding has a clear, twofold policy relevance. First, it shows that policy makers should take note that women's employment decisions are not dependent on human capital and household-composition factors alone. Even after controlling for women's age, education, having a partner and having children, we found that how many hours a week women work was associated with individual women's gender role attitudes, country-level gender role attitudes and childcare expenditure. Moreover, these latter factors interact: the consequences of changes in childcare policy will vary across mothers who have different gender role attitudes. This means, for instance, that a reduction of state-level expenditure on childcare services will not only be associated with mothers working fewer hours, but that this reduction of working hours will be strongest among mothers who have traditional gender role attitudes. With further development of macro-micro analysis such as employed in this paper, longitudinal cross-national research can inform interested policy makers about aggregate as well as individual-level effects of (proposed) policy changes. Second, and related to the above, the concern has been raised that family policies, such as childcare support, can actually have the unintended result of boosting inequality in employment across social categories within societies, particularly with respect to educational differences in employment (Ghysels and Van Lancker, 2011; Nieuwenhuis, 2014; Van Lancker and Ghysels, 2012). With regard to inequality in employment across women with different gender role attitudes, however, we could not find evidence of this inequality being exacerbated in association with childcare support. On the contrary: differences in working hours between women with traditional or gender egalitarian gender role attitudes are bigger in those countries that do not have family policies providing opportunities to combine work and family.

Note

1. ESS-2 2004/2005 Edition 3.2. was released on February 2, 2011. Participating countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine.

References

- Achen, C.H. (2002), "Toward a new political methodology: microfoundations and ART", *Annual Review of Political Science*, Vol. 5 No. 1, pp. 423-450.
- Adema, W., Fron, P. and Ladaique, M. (2011), "Is the European welfare state really more expensive?: indicators on social spending, 1980-2012; and a manual to the OECD Social Expenditure Database (SOCX)", Working Paper No. 124, Social, Employment and Migration, OECD Publishing.
- Albrecht, J.W., Edin, P.A. and Vroman, S.B. (2000), "A cross-country comparison of attitudes towards mothers working and their actual labor market experience", *Labour*, Vol. 14 No. 4, pp. 591-607.
- Bates, D., Maechler, M. and Dai, B. (2010), "lme4: linear mixed-effects models using S4 classes", *R Package*, available at: <http://CRAN.Rproject.org/package=lme4> (accessed March 1, 2014).
- Becker, G.S. (1981), *A Treatise on the Family*, Harvard University Press, Cambridge, MA.
- Becker, G.S. (1985), "Human capital, effort, and the sexual division of labor", *Journal of Labor Economics*, Vol. 3 No. 1, pp. 33-58.
- Blanchet, D. and Penneç, S. (1993), "A simple model for interpreting cross-tabulations of family size and women's labour force participation", *European Journal of Population*, Vol. 9 No. 2, pp. 121-142.
- Braun, M., Scott, J. and Alwin, D.F. (1994), "Economic necessity of self-actualization? Attitudes toward women's labour-force participation in east and west Germany", *European Sociological Review*, Vol. 10 No. 1, pp. 29-47.
- Cohen, P.N. and Bianchi, S.M. (1999), "Marriage, children, and women's employment: what do we know?", *Monthly Labor Review*, Vol. 122, December, pp. 22-31.
- Cooke, L. (2006), "'Doing' gender in context: household bargaining and risk of divorce in Germany and the United States", *American Journal of Sociology*, Vol. 112 No. 2, pp. 442-472.
- Cooke, L. and Baxter, J. (2010), "'Families' in international context: comparing institutional effects across western societies", *Journal of Marriage and Family*, Vol. 72 No. 3, pp. 516-536.
- Crompton, R. and Lyonette, C. (2006), "Work-life 'balance' in Europe", *Acta Sociologica*, Vol. 49 No. 4, pp. 379-393.
- Eagly, A.H. and Wood, W. (1999), "The origins of sex differences in human behavior: evolved dispositions versus social roles", *American Psychologist*, Vol. 54 No. 6, pp. 408-423.
- England, P. (1992), *Comparable Worth. Theories and Evidence*, Aldine de Gruyter, New York, NY.
- ESS Round 2: European Social Survey (2011), *ESS-2 Documentation Report*, 3.2 ed., Norwegian Social Science Data Services, available at: www.europeansocialsurvey.org/ (accessed August 16, 2015).
- Ferree, M.M. (2009), "Feminist practice meets feminist theory", *Sociological Theory*, Vol. 27 No. 1, pp. 75-80.
- Fuwa, M. (2004), "Macro-level gender inequality and the division of household labor in 22 countries", *American Sociological Review*, Vol. 69 No. 6, pp. 751-767.