

# **Gender inequality and the ‘East-West’ divide in contraception: An analysis at the individual, couple, and country level**

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## **Abstract**

Despite generally low fertility rates in Europe, contraceptive behavior varies to a substantial extent. The dichotomy between Western, and Central and Eastern European countries is particularly relevant. Whereas the former are characterized by the widespread use of modern contraception, the latter show a high prevalence of traditional methods to control fertility. The current study aims to examine whether these differences can be attributed to differences in women's individual status, and in gender inequality at the couple and the country level. We combine data from the Generations and Gender Survey (2004-2011) and the Demographic Health Survey (2005-2009), covering seventeen European countries, to perform multinomial multilevel analyses. The results confirm that higher educated and employed women, and women who have an equal occupational status relative to their partner are more likely to use modern reversible contraception instead of no, traditional, or permanent methods. Absolute and relative employment are also positively related to using female instead of male methods. Furthermore, it is shown that higher levels of country-level gender equality are associated with a higher likelihood of using modern reversible and female methods, but not sterilization. Particularly country levels of gender equality are linked to the East-West divide in type of contraceptive method used. Our findings underscore that women's higher status is closely related to their use of effective, female contraception.

*Key words:* Europe; East-West divide; Contraception; Gender inequality; Comparative research

*Word count (incl. abstract, main text, references and tables): 7,996*

## Introduction

Contraceptive use patterns differ greatly across Europe. Generally, a distinction is made between countries in which the transition to the dominant use of modern contraceptives (i.e., barrier methods such as condom, diaphragm, sponge or cervical cap, hormonal contraception such as the pill, intra-uterine device, injectables or implants, and sterilization) is considered complete, and countries in which change is still progressing (Frejka 2008). Whereas Western and Northern Europe are characterized by widespread reliance on modern contraceptive methods since the 1960s-1970s, Southern, Central, and Eastern Europe have a higher prevalence of traditional methods (i.e., natural family planning, such as withdrawal and rhythm method). The latter regions have shown a sharp increase in modern contraceptive use in recent decades—the Southern region since the 1980s and the Central and Eastern region since the collapse of the socialist regimes in the 1990s—which has narrowed, but not eliminated the contraceptive divide across Europe.

A key factor in distinguishing between traditional and modern contraceptive methods is their effectiveness in preventing conception (Frejka 2008), although not all modern methods are similarly effective (Trussell 2011). Female reversible methods are very effective, as are male and female sterilization, whereas male reversible methods have higher failure rates. Nevertheless, previous research indicates that using a particular contraceptive method is not merely a product of its effectiveness. For instance, dissatisfaction with female hormonal contraceptives is identified as a common motivation for practicing less-effective male barrier methods (Grady et al. 2002), and the prevalence of female sterilization exceeds that of male sterilization, although both are similarly effective, and the first entails higher physical and financial costs (Shih et al. 2011). This suggests that contraceptive behavior is also a social practice, shaped by complex interactions between (gendered) roles and responsibilities (Gribaldo et al. 2009).

A handful of studies link the use of modern methods to female empowerment. It is argued that contraceptive use is highly dependent on women's capability to make decisions about their own fertility (Xu et al. 2011) and, in order to realize their personal and professional aspirations, women should be

able to plan if and when they want to have a child (IPPF 2015). Accordingly, limited use of modern contraception can be interpreted as a manifestation of inequality in women's status (Serbanescu et al. 2004) and an inability to negotiate otherwise (Bentley and Kavanagh 2008). Some scholars add that contraceptive control may be gendered in another way, as it can be employed to affirm or undermine men's and women's gender identities (Bertotti 2013, Fennell 2011, IPPF 2012). However, research that explicitly investigates the relationship between women's social status and contraception is scarce.

Our study aims to examine whether differences in contraceptive use across Europe can be attributed to differences in gender inequality. We focus on Central and Eastern Europe (CEE) and Northern and Western Europe (NWE), also referred to here as 'East-West'. Gender inequality is approached as a multilayered form of stratification (Collins et al. 1993) that influences personal capabilities via individual power resources and gendered definitions, as well as via the broader degree of gender inequality within the household and society. In line, the theoretical framework first focuses on gender equality and contraception at the individual and couple level, and then looks at the regional variation in this relationship. Data from the Generations and Gender Survey (2004-2011; GGP Data Archive 2016) and the Demographic Health Survey (2005-2009) are used to examine the hypotheses.

## **Gender equality and contraceptive use**

Gender equality refers to the extent to which men and women who are otherwise social equals (e.g., in terms of age or social class) are equal in their access to scarce and valued resources in society (Chafetz 1990). Theories concerning gender equality primarily focus on the gendered organization of production, which stresses the economic positions of men and women, and the gendered organization of reproduction, which focuses on childbirth and parenting (Collins et al 1993).

Accordingly, only a few studies have integrated the theoretical viewpoint of the gendered division of labor to investigate contraceptive behavior (Bertotti 2013, Fennell 2011). Their attention focuses on two types of mechanisms. The first is in line with classic resource theories and describes how the spouse with the greater resources (e.g., the highest education or income) has greater influence in the couple's choice of contraceptive method (Grady et al. 2010). It remains unclear, however, whether higher

absolute or relative power leads men and women to use contraceptives themselves or to transfer this task to their partner. Previous research repeatedly confirms the relationship between higher socioeconomic status and modern reversible contraceptive use (Dereuddre et al. 2016, Janevic et al. 2012, Serbanescu et al. 2004). Men's and women's high educational attainment, high household income, and paid employment are positively associated with consistent use of both male barrier methods or female oral contraceptives (Martinez et al. 2006, Moreau et al. 2006, Mosher and Jones 2010, Spinelli et al. 2000). In contrast, the use of withdrawal and rhythm method is linked to lower education and unemployment (Dereuddre et al. 2016; Spinelli et al. 2000). Other research indicates that as women's educational attainment rises, the rate of switching from the pill to less-effective methods or non-use declines, but the rate of switching from the pill to male condom use rises (Grady et al. 2002). Empirical evidence of partners' relative resources and bargaining processes concerning reversible contraceptive use is lacking. For sterilization, it is found that the higher educated or those with a higher income are less likely to rely on female sterilization and more likely to use male sterilization, compared with the lower-educated or those with a lower income (Anderson et al. 2012, Barone et al. 2004, Bertotti 2013, Bumpass et al. 2000, Martinez et al. 2006, Mosher and Jones 2010). The positive association between socioeconomic status and male sterilization however seems unique to the US (Eeckhaut and Sweeney 2016). Interestingly, a higher *relative* level of education for either partner, prompts that partner to opt for sterilization themselves (Bertotti 2013, Bumpass 2000).

The second theoretical perspective approaches contraceptive choice as a gendered decision, that is part of men's and women's socialization process into socially-normative gender identities and interactions (Bertotti 2013, Fennell 2011). As for resources and contraception, the relationship between gender identities and contraceptive practice proves to be ambiguous. On the one hand, contraception is often perceived as a female sphere of influence because women bear the physical costs of pregnancy and birth, and are traditionally responsible for childcare (Grady et al. 2010, Thomson 1997). Although women can feel compelled to take responsibility for contraception as part of their female role, others suggest that women engage in 'contraceptive gatekeeping' and that they report a clear preference for being primarily in charge of contraception (Fennell 2011). This touches the unsolved question on women's trust in their

partner for using a male hormonal pill (Glasier 2010) and serves as one explanation why women with a higher relative education are more likely to opt for tubal ligation than vasectomy (Bertotti 2013, Bumpass et al. 2000). In turn, disadvantaged men's reluctance for sterilization has been linked to male sterilization as a treat for their masculinity (Bertotti 2013). On the other hand, men may define their participation in contraceptive responsibility—both in terms of actually using a male method or engaging in decision-making—as part of their role as a responsible man and as a way of taking care of their partner (Fennell 2011). In line, performing withdrawal successfully is a source of pride and masculinity in some CEE and Southern European countries, and is perceived as a sign of commitment, trust, and intimacy (IPPF 2012, Gribaldo et al. 2009).

## **Explaining the East-West divide**

During recent decades, both NWE and CEE have experienced a transition in terms of gender inequality. In NWE, there has been a notable increase in women's employment, that was not accompanied by an equal increase in men's care work and housework (Lewis et al. 2008, Ma 2010). This resulted in a trend of men working full-time and women working varying employment arrangements, ranging from housewife, to part-time or full-time employment. In CEE, social policy during the Soviet period stimulated women to join the labor force by introducing highly developed and affordable childcare services, and generous systems of state support for maternity and family (Szelewa and Polakowski 2008). However, few efforts were made to encourage men to do their share at home, and policy continued to be based on male-centered concepts of society and the family, and aimed at making a male-dominated society function better (David 1999). The collapse of the regime has led many women to return to the private sphere, among others because of a backlash in the provision of public childcare (Ma 2010, Szelewa and Polakowski 2008). Nevertheless, recent empirical evidence shows that female employment rates in CEE countries are still similar to those in NWE countries (UNDP 2015).

These very distinct contexts may be relied on to explain the contraceptive divide in Europe. Although women may have achieved relatively higher 'net economic power', male control over the political economy, and male-dominated ideologies at the societal level may act as a 'discount factor', countering

the power of women's individual resources (Blumberg and Coleman 1989). On the one hand, country-level gender inequality may directly affect contraceptive use, because it influences social and financial barriers to accessing contraception (IPPF 2015). Besides a few NWE countries, most European countries do not include a component about sexual and reproductive health and rights (such as reimbursement schemes for contraception) in their gender equality policies. On the other hand, it may indirectly affect contraceptive use via two pathways. A decrease in socioeconomic opportunities available to women may reduce their bargaining power within the household (Fuwa 2004). Alternatively, gender unequal societies, where traditional gender norms are more likely to be dominant, may cause women with a relatively high socioeconomic status to opt for female-appropriate contraceptives in an attempt to neutralize their gender nonconforming behavior (Greenstein 2000).

The majority of literature on contraception, however, is limited to the individual level, and to a lesser extent the couple level. One study, by Bentley and Kavanagh (2008), examines the influence of district and country-level gender inequality on contraceptive use in a European context. They found that increasing female labor-force participation within certain districts in the United Kingdom was related to a growing probability of contraceptive use. This association remained after controlling for women's individual sociodemographic characteristics and was stronger for those with lower levels of education. An inverse relationship was found across European countries, in which contraceptive use was lower when labor force participation was higher. Interestingly, this association was explained by the inclusion of an indicator for economies in transition in the 1990s. An important limitation of this study is that it does not distinguish between contraceptive methods. Dereuddre and colleagues (2016) add that higher levels of country-level gender inequality, measured as the gender gap in income and political participation, are related to a higher likelihood of non-use or traditional contraceptives, instead of modern ones across different European countries.

## **Study aim and hypotheses**

The aim of the current study is to explain the East-West divide in contraceptive use by examining its association with gender inequality. We differentiate between women who intend to have children in the

future and those who have no desire, because childbearing intentions are closely linked to reversible versus permanent contraceptive options. Only for the latter group, sterilization is included. In all hypotheses, the most commonly used contraceptive category is relied on as the reference group. This enables us to investigate the processes at play when couples decide to use an alternative method.

In a first step, we look at the relationship between gender inequality at the individual, couple and country level, and the type of contraceptive method used. First, we distinguish between non-use, and traditional and modern (reversible and permanent) methods. For women with a childbearing desire, we hypothesize—in line with most existing literature—that contraceptive efficacy will surpass other arguments, and that *higher levels of gender inequality will be associated with a higher probability of using no or traditional methods, rather than modern reversible methods (H1)*. For those with no childbearing intentions, previous comparisons between reversible and permanent modern methods remain lacking, but the observation that modern reversible use is generally related to higher socioeconomic status whereas—particularly female—sterilization is linked to lower socioeconomic status (Anderson et al. 2012, Bertotti 2013, Bumpass et al. 2000, Mosher and Jones 2010) leads us to suggest that *higher levels of gender inequality will be associated with a higher probability of using no, traditional or modern permanent methods, rather than modern reversible methods (H1)*. Second, a comparison is made between non-use, and male and female methods. Other research often ignores this gendered division, and results from the few studies that consider male *and* female sterilization are inconclusive (Eeckhaut and Sweeney 2016). Therefore, our third hypothesis is more exploratory. Prompted by either having fewer resources or the perception of contraception as a female domain, we argue that *higher levels of gender inequality may lead women either to retain female contraceptive methods (H2a) or to transfer contraceptive use to their male partner (H2b)*.

In a second step, we examine whether the East-West divide in contraceptive use can be attributed to differences in gender inequality. The sharp distinction between both gender inequality and contraceptive practices in the NWE and CEE regions suggests that *at least part of the differences in contraceptive prevalence can be explained by differences in gender inequality (H3)*.



## Methods

### *Data*

We combine data from the Generations and Gender Survey (UNECE 2005) and the Demographic Health Survey (DHS 2013). Both survey programs start from a standard model questionnaire to ensure between-country comparability, and use probability sampling.

The GGS is a longitudinal panel survey with representative data for people aged 18 to 79 in eighteen European countries plus Australia. Face-to-face interviews were conducted with an average of 10,000 respondents per country per wave. For the current study, we use data from the first wave (2004-2011) for four WE countries (Austria, France, Germany, Norway) and eight CEE countries, grouped together based on their post-communist character (Bulgaria, the Czech Republic, Estonia, Georgia, Lithuania, Poland, Romania, the Russian Federation). Belgium is excluded because of the inability to distinguish between male and female traditional methods; Hungary, Italy, the Netherlands, and Sweden due to missing information on key variables; and Australia because its geographical location is not appropriate for this study.

The DHS is a cross-sectional representative survey with large sample sizes (usually between 5,000 and 30,000 households) collected in more than ninety developing countries. In the sample households, women aged between 15 and 49 were interviewed face-to-face and if possible, also their male partner (aged 15-54). We use data from five CEE countries (Albania, Armenia, Azerbaijan, Moldova, Ukraine), gathered between 2005 and 2009.

In our analyses, we focus on a subsample of 31,632 women of reproductive age (18-49) with a male partner. Only women who meet all criteria for having ‘a need for contraception’ are included (Klijzing 2000): those who were not pregnant, who were physically able to have children and had a fertile partner (apart from being sterilized), and who had no desire for children at the time of the survey (‘Do you yourself want to have a/another baby *now*?’). We perform parallel analyses for two groups: (1) women who intended to have one or more children *in the future* but not now (N=8,427) and (2) women who had

no childbearing desire (N=23,205). Cases with missing information were removed from the sample (accumulated percentage: 7.5%).

## ***Variables***

### *Dependent variable*

Contraception is classified into seven categories: (1) no method, (2) traditional male (withdrawal), (3) traditional female (the rhythm method), (4) modern male reversible (male condom), (5) modern female reversible (the pill, intra-uterine device, diaphragm, injectable, implants, spermicidal foam or jelly), (6) modern male permanent (vasectomy), and (7) modern female permanent (tubal ligation) (see Appendix 1 for the descriptives). Respondents combining traditional and modern methods (N=1,428), or male and female methods (N=1,006) were excluded from the analyses in order to not further complicate them; sensitivity analyses indicate that this does not substantially influence our results (Appendices 2-3). Using ‘other’ contraceptives (N=282) and answer categories that were not included in both survey programs (lactational amenorrhea method [N=146], emergency contraception [N=113], patch [N=25], Persona [N=133], female condom [N=3]) were omitted. Depending on the hypothesis, different sets of categories were combined. For *contraceptive use* (H1, H3), we distinguish between no, traditional, modern reversible (reference group), and modern permanent methods; for *contraceptive division* (H2, H3), we distinguish between no, male, and female (reference group) methods.

### *Independent variables*

Appendices 4-5 show the descriptive statistics for the independent variables. Women’s *individual socioeconomic position* is measured by their educational attainment and employment status. For the level of education, the GGS relies on the International Standard Classification of Education (ISCED97). Corresponding with the standardized answer categories provided in the DHS, we differentiate between three categories: (1) lower educated (primary education or lower), (2) middle educated (secondary education), and (3) higher educated (higher education). A fourth category was added to account for respondents who were students. The higher educated are used as the reference category. Occupational

status is coded as a dummy variable, with the employed as the reference group (0=employed; 1=not employed).

Women's *relative socioeconomic position* is assessed by comparing their educational and employment statuses with those of their partner. For relative education, we use a set of dummy variables: (1) both partners equally educated, (2) the woman is higher educated than the man, (3) the man is higher educated than the woman, and (4) one of the partners is a student. Equally educated partners are used as the reference group. In order to assess women's relative occupational status, we distinguish between three categories: (1) both partners are (not) employed, (2) the woman is employed and the man is not, and (3) the man is employed and the woman is not. The first is used as the reference category.

*Gender inequality at the country level* is assessed using the Gender Inequality Index (GII). This index reflects country-level gender inequality in achievements in three key areas: (1) reproductive health, measured by maternal mortality and adolescent birth rates, (2) empowerment, measured by proportion of parliamentary seats occupied by females and female/male ratio of adults aged 25 or above with at least some secondary education, and (3) economic status, measured by labor market participation ratio of women and men aged 15 or above. A higher score indicates a higher level of gender inequality.

We control for age and age squared, to account for nonlinear effects. Two family-related indicators are used: partner status and parity. For partner status, respondents were either (1) married (reference group), (2) cohabiting, or (3) had a non-resident partner. The number of biological children for each respondent is a categorical variable: (1) no children (reference group), (2) one child, (3) two children, and (4) three or more children. Lastly, a dummy variable to control for urbanity is included as a proxy for the supply of modern contraceptives (0=rural; 1=urban) (Klijzing 2000). At the country level, we control for the Gini coefficient to take correlations between countries' levels of income and gender inequality into account. A higher score indicates a higher level of income inequality (World Bank 2016).

## *Analysis*

We use multinomial logistic multilevel models to examine our hypotheses. Given that the respondents (level 1) are hierarchically nested in countries (level 2), the assumption of independence of observations would be violated if we did not take this clustered data structure into account (Hox 2010).

In order to examine hypotheses 1-2, we analyzed the association between women's absolute and relative socioeconomic characteristics, and their choice of contraceptive method. Two similar analyses are shown. The first illustrates the association between socioeconomic status and using no, traditional, modern reversible, or modern permanent methods (*contraceptive use*). The second demonstrates the relationship between socioeconomic status and using no, male, or female contraceptives (*contraceptive division*). Next, we added the GII to the models. As the estimates for the individual and couple variables did not change substantially, we limit our discussion to the latter analyses.

To investigate hypothesis 3, we start from a model that only includes an East-West dummy (0=West; 1=East). All other variables are added stepwise, to examine whether regional differences in contraceptive use and division can be attributed to differences in gender inequality at the individual, couple, or country level.

Our models were analyzed using the software program HLM 7.01 and were estimated with the penalized quasi-likelihood method (full PQL). We tested the models with absolute and relative education and employment separately, in order to avoid multicollinearity problems. All metric independent variables were grand-mean centered. Caution is necessary when comparing the log odds, as they reflect a certain degree of unobserved heterogeneity (Mood 2010). Therefore, all coefficients were y-standardized to enhance comparability across different models. This procedure does not alter the interpretation of the findings. The log odds are transformed to odds ratios (ORs) for the interpretation of our results.

## **Results**

Before turning to our main analyses, we look whether the data confirms the expected variation in contraceptive use patterns between NWE and CEE (Appendix 6). Differences in prevalence rates range

from 8.7 to 13.8% for non-use, from 3.6 to 32.8% for traditional methods, from 0.3 to 43.1% for modern reversible methods, and from 3.8 to 4.7% for modern permanent methods. Whereas NWE displays a higher prevalence of modern reversible female methods and permanent methods, CEE is characterized by more non-use, traditional use, and reversible male method use.

First, we examine whether an association between women's absolute and relative socioeconomic status, and using no, traditional, or modern reversible and permanent methods (*contraceptive use*) could be established (Tables 1-2). Model 1 shows that women who are in education, the higher educated, and the employed are more likely to rely on modern reversible methods than to use no or traditional methods. This relationship holds true for women with and without childbearing intention. For the latter group, the results indicate that socioeconomic status is also negatively related to being sterilized rather than using modern reversible methods. Model 2 indicates that woman's education relative to her partner's is not significantly related to contraceptive use, apart from couples in which one of the partners is a student. These couples show a higher likelihood of using modern reversible methods rather than no or traditional methods, as compared with equally-educated couples. Interestingly, we find a consistently positive link for couples in which the man is employed and the woman is not, and their non-use, traditional method use or sterilization. At the same time, the results for women without childbearing intention indicate that couples in which the woman is employed and the man is not, are also more likely not to use contraception instead of using modern reversible methods.

Second, for the relationship between women's socioeconomic status, and *contraceptive division* (i.e., no, male, or female methods), we find similar patterns for non-use to those in the analyses for *contraceptive use* (Tables 1-2). The results show that women's absolute education and employment status (Model 1), as well as their relative education—in the case of one studying partner—and employment status (Model 2), are positively related to using female methods rather than using no contraception. For the subsample of women with a childbearing intention, being a student or being employed is associated with a lower likelihood of using male instead of female methods. In addition, couples in which one or both partners are students and in which the partners have an equal occupational status (rather than in which the woman is not employed) are more likely to rely on female methods. For the subsample of

women with no childbearing intent, only absolute and relative employment status plays a role. Women who are not employed, and women who are not employed but who have an employed partner, show a higher likelihood of practicing male instead of female methods.

Next, we assess the relationship between country-level gender inequality, and women's contraceptive use and division, irrespective of their individual and couple-level characteristics (Tables 1-2). In both subsamples, higher levels of country-level gender inequality are associated with a higher likelihood of using no or traditional methods instead of modern reversible methods, and of relying on non-use or male instead of female methods. Interestingly, no significant association is found between GII and practicing sterilization instead of modern reversible methods.

Lastly, we examine whether the East-West divide in contraceptive use can be attributed to differences in gender inequality (Table 3). With regard to *contraceptive use*, the East-West dummy is related to non-use and traditional contraceptive use, but not to sterilization. The association for non-use vanishes when including the control variables in the model among those with childbearing intentions, and the GII among those with no intentions. Also the association between the East-West dummy and traditional methods for respondents with a childbearing intention becomes non-significant by adding the GII, whereas the relationship between region and traditional use holds among those with no additional childbearing intention. With regard to *contraceptive division*, the relationship between living in CEE and being more likely to practice no or male methods instead of female methods disappears by taking the GII differences into account.

## **Discussion and conclusion**

Our study provides evidence for the pivotal role that gender inequality plays in predicting women's contraceptive method usage across a number of NWE and CEE countries. First, we examined the influence of gender inequality on contraceptive use. We hypothesized that higher levels of gender inequality would be associated with a higher probability of using no, traditional or—only for those with no childbearing desire—modern permanent rather than modern reversible methods (H1). We are able to confirm this hypothesis, except for the relationship between country-level gender inequality and

sterilization. At the individual level our results are in line with studies in the European and US context that show a positive association between women's higher socioeconomic status and modern reversible contraceptives (Dereuddre et al. 2016, Janevic et al. 2012, Martinez et al. 2006, Moreau et al. 2006, Mosher and Jones 2010, Serbanescu et al. 2004, Spinelli et al. 2000), and a negative association with (female) sterilization (Anderson et al. 2012, Bertotti 2013, Bumpass et al. 2000, Eeckhaut and Sweeney 2016, Mosher and Jones 2010). Available research that goes beyond the individual level is generally lacking for reversible methods, and comparisons between modern reversible and permanent methods are scarce, but in this study, we find that higher levels of occupational gender equality between spouses are associated with a higher likelihood of relying on modern reversible methods instead of no, traditional, or permanent methods. Furthermore, Bentley and Kavanagh (2008), and Dereuddre et al. (2016) similarly conclude that district/country-level gender inequality is associated with lower levels of (modern) contraceptive use. In all, contraceptive efficacy and reversibility thus seem to trump other arguments as higher levels of gender equality prompt women to use modern and reversible contraception. In line with the relative resources perspective, these results provide evidence that a higher social status enables women to opt for a more effective, reversible method. Interestingly, only for non-use, we find that both women's higher *and* lower relative employment status are related to a lower likelihood of modern methods. This might indicate that attention could also be shifted towards a heterogamy argument rather than a gendered-power thesis. Studies carried out in the United States stress that the fewer similarities partners have—in terms of age, education, etc.—the less likely it is that they will rely on contraceptive methods (Ford et al. 2001, Kusunoki and Upchurch 2011). A commonly-made explanation is that heterogamous couples have more difficulty in communicating effectively with each other about contraceptive method choice because of diverse sexual experience and knowledge.

Turning to our results for contraceptive division (H2a-b), no association is found between educational attainment, and male versus female methods. At the same time, women's individual employment and equal employment status relative to her partner's, and country-level gender equality are related to a lower likelihood of using male methods. These results suggest that more gender equality goes hand in hand with a higher likelihood of female contraceptive usage. However, additional sensitivity analyses

reveal that the relationship between education and type of contraception is more complex (Appendix 7). For example, when we focused only on those who use modern reversible methods, we find that women with a higher education are more likely to rely on male, rather than female methods. This is surprising, given that modern reversible male methods, such as the condom, are defined as the less-effective contraceptive than modern reversible female methods (Trussell 2011). Likewise, when we focused on the sterilized respondents, we found that women living in a country with lower levels of gender inequality were more likely to rely on vasectomy than tubal ligation. Although the first set of results about contraceptive use indicate that efficacy, unsurprisingly, is a primary factor in women's contraceptive choices, these findings add that the assumption that contraceptive behavior advances linearly—from irrational, ineffective, or traditional methods to rational, effective, or modern methods (Gribaldo et al. 2009)—should be nuanced. We argue that neither H2a (higher levels of gender inequality lead women to retain female contraceptives) nor H2b (higher levels of gender inequality lead women to transfer this task to their partner) can be confirmed or rejected. Instead, it can be suggested that contraceptive decision-making is influenced by multiple factors, and that the resource and gender perspectives as such do not offer a clear explanation yet. This echoes the repeated conclusion in the comprehensive literature about the division of paid and unpaid labor (Lachance-Grzela and Bouchard 2010).

In the final step, we link our findings to the East-West divide in contraception (H3). Similarly to Bentley and Kavanagh's (2008) observation that the link between female labor force participation and contraception vanishes by including an indicator 'economies in transition during the 1990s' in their models, our results confirm that levels of gender inequality at the country level associate with the regional differences for no and traditional instead of modern method use, and for no and male instead of female method use. Thus, the observation that CEE countries are characterized by a significantly higher prevalence of no, traditional and modern reversible male method use (Appendix 6) can be connected to the higher GII scores in this region (Appendices 4-5). It is somewhat surprising that variations in country-level gender inequality have a more pronounced explanatory power for the East-West divide than variations at the individual and couple level. This may be a reflection of limited health



care systems for women (Carlson 1998) impeding access to modern contraceptives, as well as the presence of stigmatizing ideas related to modern and female methods (IPPF 2012). More in general, this adds to sociological studies that focus on the East-West dichotomy from a health perspective, such as those linking deteriorating behavior (e.g., heavy smoking or drinking), lack of resources in the health care system, and social stagnation and disorganization in CEE to higher levels of mortality and worse self-perceived health (Carlson 1998, Monden and de Graaf 2013).

Before we turn to the conclusion, it is important to acknowledge some limitations. First, we combine data from two survey programs (DHS 2005-2009, GGP Data Archive 2016) to enable multilevel analysis. Methodological strategies to handle possible differences between the GGS and DHS (e.g., adding a survey dummy) assume that both include a representative set of countries, but the latter only contains CEE countries. Nevertheless, sensitivity analyses with the GGS sample only, at the individual and couple level, indicate that the estimates remain largely similar. All datasets are nationally representative, collected within the same time period and via similar data collection techniques, and the country specific sample sizes are similar. Moreover, the questions used to construct the variables are asked in a similar way and we only use the answer categories that are available in both survey programs (e.g., contraceptive options). This also led us to not include an income measurement in our analysis, although previous research demonstrates that household income is positively associated with using contraception (Janevic et al. 2012) and negatively with contraceptive failure (Mosher and Jones 2010). Whereas the GGS asks respondents about their personal, partners', and total household income, the DHS contains a wealth index based on, among other things, household ownership of a television, type of drinking water source, and toilet facilities (DHS 2004). By taking two other important indicators into account (education and employment), we do pay attention to the multidimensional character of women's socioeconomic status. Second, empirical studies repeatedly showed that socioeconomic differences in contraceptive use are likely to be shaped by financial barriers and limited access to contraceptive use (Eeckhaut and Sweeney 2016). The type of residence is considered a proxy for respondents' access to modern contraceptives, although we are aware that this indicator does not capture all aspects of contraceptive availability and accessibility. This is mainly due to a lack of better alternatives in the

questionnaires, and we prefer *some* control over *no* control. Comparison between our urbanity dummy and IPPF's (2015) evaluation of European countries' policies concerning accessing modern contraceptives indicates that the general patterns are similar. For instance, most NWE countries in our study show a higher percentage of urbanity as well as better scores in terms of reimbursement of contraception or sex education for young people (IPPF 2015). In reverse, CEE countries display higher levels of women living in a rural residence and score lower on these indicators. Third, because gender inequality is manifest in many aspects of women's lives, it is important to approach it as a multidimensional construct (Collins et al. 1993). For example, limiting gender inequality to labor-force participation would lead us, given the CEE background, to inaccurate conclusions, because the high prevalence of female employment does not necessarily translate into a better social position (David 1999). We tried to take this multilayered character into account by paying attention to multiple measurements of women's social position at the individual, household, and country level. Finally, it would be worthwhile to take other parts of Europe—for instance the Southern region—into account, as this region shows similarly high rates of traditional method use than CEE (UN 2013), despite the introduction of more effective methods (Dalla Zuanna et al. 2005, Gribaldo et al. 2009). Unfortunately, neither the GSS nor DHS include key information concerning contraceptive use for these regions.

In sum, our results indicate that the East-West divide in contraceptive use remains relevant to this day. At the same time, these findings should not distract our attention from the enormous heterogeneity among countries in both regions (Szelewa and Polakowski 2008) as large variations in terms of contraceptive patterns can be identified (Appendix 1). We conclude that women's status at the individual and couple level are important predictors for contraceptive use and division, but that diverging patterns between NWE and CEE in non-use, and traditional and male methods are particularly linked to varying levels of country-level gender inequality. The introduction and spread of female methods has shifted responsibility from men to women and given women greater power to maintain couples' reproductive decision making (Dalla Zuanna et al. 2005). Despite commonly-reported dissatisfaction concerning hormonal contraceptives (e.g., side effects) (Johnson et al. 2013), it seems that overall, women primarily

continue to rely on female reversible contraceptives in contexts that display higher levels of gender equality.

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Appendix 1: Prevalence of contraceptive method per country and according to women's childbearing intention

|                      | Women who intend to have children (N=8,427) |             |             |              |                |                  | Women who do not intend to have children (N=23,205) |             |            |              |                |                  |                 |                   |
|----------------------|---|-------------|-------------|--------------|----------------|------------------|---|-------------|------------|--------------|----------------|------------------|-----------------|-------------------|
|                      | No  |             | Trad. male  | Trad. female | Mod. rev. male | Mod. rev. female | No  |             | Trad. male | Trad. female | Mod. rev. male | Mod. rev. female | Mod. perm. male | Mod. perm. female |
|                      | N   | %           | %           | %            | %              | %                | %   | %           | %          | %            | %              | %                | %               | %                 |
| <b>Total NWE</b>     | <b>5,927</b>                                | <b>13.7</b> | <b>0.7</b>  | <b>1.1</b>   | <b>13.2</b>    | <b>71.3</b>      | <b>15.4</b>   | <b>0.4</b>  | <b>1.5</b> | <b>8.3</b>   | <b>61.9</b>    | <b>3.9</b>       | <b>8.6</b>      |                   |
| Austria <sup>a</sup> | 1,777                                       | 13.0        | 0.7         | 1.7          | 18.8           | 65.9             | 13.7  | 0.2         | 1.5        | 12.7         | 49.3           | 9.6              | 13.0            |                   |
| France               | 1,584                                       | 8.1         | 0.5         | 0.9          | 8.3            | 82.2             | 10.2  | 1.0         | 0.4        | 5.1          | 74.6           | 1.1              | 7.6             |                   |
| Germany              | 1,293                                       | 17.8        | 0.9         | 0.5          | 5.5            | 75.3             | 17.7  | 0.3         | 4.1        | 6.3          | 52.5           | 5.3              | 13.8            |                   |
| Norway               | 1,273                                       | 25.6        | 0.8         | 0.0          | 12.8           | 60.8             | 19.6  | 0.1         | 0.1        | 9.5          | 70.8           | - <sup>b</sup>   | - <sup>b</sup>  |                   |
| <b>Total CEE</b>     | <b>25,705</b>                               | <b>27.5</b> | <b>21.3</b> | <b>4.6</b>   | <b>18.3</b>    | <b>28.2</b>      | <b>24.0</b>   | <b>33.2</b> | <b>5.3</b> | <b>8.6</b>   | <b>24.9</b>    | <b>0.1</b>       | <b>3.9</b>      |                   |
| Albania              | 3,749                                       | 28.0        | 65.8        | 0.1          | 3.6            | 2.4              | 16.1  | 73.9        | 0.0        | 1.7          | 4.6            | 0.0              | 3.7             |                   |
| Armenia              | 2,493                                       | 40.6        | 33.1        | 2.5          | 12.7           | 11.1             | 21.6  | 47.5        | 4.1        | 9.5          | 16.6           | 0.0              | 0.6             |                   |
| Azerbaijan           | 3,629                                       | 47.7        | 36.2        | 2.4          | 2.2            | 11.5             | 32.6  | 46.7        | 3.9        | 2.2          | 14.4           | 0.0              | 0.3             |                   |
| Bulgaria             | 2,082                                       | 24.0        | 25.1        | 1.9          | 28.8           | 20.3             | 28.0  | 32.9        | 2.3        | 12.7         | 21.0           | 0.1              | 3.0             |                   |
| Czech Rep.           | 1,025                                       | 12.0        | 5.7         | 0.9          | 14.8           | 66.6             | 21.2  | 7.8         | 0.4        | 13.4         | 46.6           | 0.1              | 10.4            |                   |
| Estonia <sup>a</sup> | 852   | 22.4        | 1.6         | 1.6          | 20.4           | 54.0             | 20.8  | 2.2         | 6.8        | 11.1         | 59.0           | 0.0              | 0.2             |                   |
| Georgia              | 1,195                                       | 33.5        | 1.4         | 22.9         | 11.5           | 30.7             | 46.4  | 1.5         | 12.6       | 5.7          | 22.2           | 0.2              | 11.4            |                   |
| Lithuania            | 981   | 24.1        | 7.4         | 7.4          | 22.8           | 38.3             | 34.2  | 8.9         | 7.2        | 10.1         | 33.9           | 0.7              | 5.1             |                   |
| Moldova              | 3,233                                       | 17.6        | 22.7        | 4.2          | 17.0           | 38.4             | 9.9   | 27.3        | 4.6        | 6.0          | 44.7           | 0.0              | 7.5             |                   |
| Poland               | 1,844                                       | 35.8        | 4.9         | 5.8          | 28.6           | 24.9             | 43.3  | 6.2         | 7.0        | 21.8         | 21.7           | - <sup>b</sup>   | - <sup>b</sup>  |                   |
| Romania              | 1,265                                       | 16.3        | 3.1         | 14.0         | 21.4           | 45.1             | 27.4  | 4.9         | 19.1       | 12.1         | 28.1           | 0.1              | 8.3             |                   |
| Russian Fed.         | 906   | 12.3        | 5.3         | 10.3         | 19.9           | 52.2             | 15.7  | 6.4         | 10.7       | 13.9         | 42.6           | 0.2              | 10.4            |                   |
| Ukraine              | 2,451                                       | 26.8        | 13.7        | 3.3          | 31.1           | 25.2             | 15.7  | 17.5        | 8.1        | 18.4         | 38.8           | 0.0              | 1.4             |                   |

<sup>a</sup> Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21.

<sup>b</sup> The data from Norway and Poland do not contain information on sterilization.

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 2: The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with a childbearing desire, inclusive cross-category use (N<sub>women</sub>=9,332; N<sub>countries</sub>=17)

|                                  | Contraceptive use (Ref.=Modern reversible method only) |               |                                      |               |   |               | Contraceptive division (Ref.=Female method only) |               |                               |               |  |               |
|----------------------------------|--|---------------|--------------------------------------|---------------|---|---------------|--|---------------|-------------------------------|---------------|--|---------------|
|                                  | No method <sup>a</sup>                                 |               | Traditional method only <sup>a</sup> |               | Traditional method in combination with modern reversible <sup>a</sup> |               | No method <sup>a</sup>                           |               | Male method only <sup>a</sup> |               | Male method in combination with female method <sup>a</sup> |               |
|                                  | Model 1<br>OR  | Model 2<br>OR | Model 1<br>OR                        | Model 2<br>OR | Model 1<br>OR   | Model 2<br>OR | Model 1<br>OR                                    | Model 2<br>OR | Model 1<br>OR                 | Model 2<br>OR | Model 1<br>OR  | Model 2<br>OR |
| Intercept                        | 0.572 ***  | 0.617 ***     | 0.421 ***                            | 0.445 ***     | 0.289 ***   | 0.291 ***     | 0.690 **   | 0.736 *       | 0.852                         | 0.874         | 0.495 ***  | 0.502 ***     |
| Education                        |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Low                              | 1.644 ***  |               | 1.400 **                             |               | 1.043   |               | 1.532 ***  |               | 1.185                         |               | 1.109  |               |
| Middle                           | 1.165 ***  |               | 1.178 ***                            |               | 1.046   |               | 1.104 **   |               | 1.006                         |               | 0.945  |               |
| High (Ref.)                      |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Studying                         | 0.520 ***  |               | 0.758 *                              |               | 0.876   |               | 0.444 ***  |               | 0.741 ***                     |               | 0.979  |               |
| Occupational status              |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Employed (Ref.)                  |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Not employed                     | 1.354 ***  |               | 1.180 ***                            |               | 1.090   |               | 1.441 ***  |               | 1.244 ***                     |               | 1.066  |               |
| Relative education               |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Equally educated (Ref.)          |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Woman higher educated            |  | 1.036         |                                      | 1.001         |   | 0.967         |  | 0.996         |                               | 0.910 *       |  | 0.909         |
| Man higher educated              |  | 1.097         |                                      | 1.123 *       |   | 1.248 **      |  | 1.048         |                               | 1.012         |  | 1.037         |
| Studying partner                 |  | 0.599 ***     |                                      | 0.800 *       |   | 0.938         |  | 0.551 ***     |                               | 0.803 **      |  | 1.015         |
| Relative occupational status     |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Both (not) employed (Ref.)       |  |               |                                      |               |   |               |  |               |                               |               |  |               |
| Woman employed, man not employed |  | 0.968         |                                      | 1.192         |   | 0.957         |  | 0.927         |                               | 1.010         |  | 0.892         |
| Man employed, woman not employed |  | 1.300 ***     |                                      | 1.176 ***     |   | 1.059         |  | 1.366 ***     |                               | 1.208 ***     |  | 1.005         |
| GII                              | 1.033 **   | 1.035 **      | 1.071 ***                            | 1.072 ***     | 1.028   | 1.029         | 1.035 **   | 1.037 **      | 1.045 **                      | 1.046 **      | 1.014  | 1.014         |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> Model controlled for age, age squared, partner status, parity, urbanity, and Gini

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 3: The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with no childbearing desire, inclusive cross-category use (N<sub>women</sub>=24,734; N<sub>countries</sub>=17)

|                               | Contraceptive use (Ref.=Modern reversible method only) |               |                                      |               |   |               |   |               |                        |               |                               |               | Contraceptive division (Ref.=Female method only)           |               |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|--|---------------|--------------------------------------|---------------|---|---------------|---|---------------|------------------------|---------------|-------------------------------|---------------|--|---------------|--|--|--|--|--|--|--|--|--|--|
|                               | No method <sup>a</sup>                                 |               | Traditional method only <sup>a</sup> |               | Traditional method in combination with modern reversible <sup>a</sup> |               | Modern permanent method only <sup>a</sup> |               | No method <sup>a</sup> |               | Male method only <sup>a</sup> |               | Male method in combination with female method <sup>a</sup> |               |  |  |  |  |  |  |  |  |  |  |
|                               | Model 1<br>OR  | Model 2<br>OR | Model 1<br>OR                        | Model 2<br>OR | Model 1<br>OR   | Model 2<br>OR | Model 1<br>OR                             | Model 2<br>OR | Model 1<br>OR          | Model 2<br>OR | Model 1<br>OR                 | Model 2<br>OR | Model 1<br>OR  | Model 2<br>OR |  |  |  |  |  |  |  |  |  |  |
| Intercept                     | 0.731 **   | 0.790 *       | 0.581 **                             | 0.618 **      | 0.264 ***   | 0.252 ***     | 0.310 ***                                 | 0.330 ***     | 0.715 **               | 0.758 *       | 0.803                         | 0.831         | 0.426 ***  | 0.405 ***     |  |  |  |  |  |  |  |  |  |  |
| Education                     |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Low                           | 1.494 ***  |               | 1.168 **                             |               | 0.886   |               | 1.298 **                                  |               | 1.430 ***              |               | 1.087                         |               | 0.893  |               |  |  |  |  |  |  |  |  |  |  |
| Middle                        | 1.168 ***  |               | 1.121 ***                            |               | 0.927   |               | 1.157 **                                  |               | 1.126 **               |               | 1.045                         |               | 0.878  |               |  |  |  |  |  |  |  |  |  |  |
| High (Ref.)                   |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Studying                      | 0.750 *  |               | 0.763                                |               | 0.989   |               | 1.158                                     |               | 0.735 ***              |               | 0.968 ***                     |               | 1.281  |               |  |  |  |  |  |  |  |  |  |  |
| Occupational status           |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Employed (Ref.)               |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Not employed                  | 1.205 ***  |               | 1.117 ***                            |               | 1.004   |               | 1.138 **                                  |               | 1.190 ***              |               | 1.101 ***                     |               | 1.027  |               |  |  |  |  |  |  |  |  |  |  |
| Relative education            |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Equally educated (Ref.)       |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Woman higher educated         |  | 0.997         |                                      | 0.993         |   | 1.007         |   | 1.027         |                        | 0.986         |                               | 0.964 *       |  | 1.022         |  |  |  |  |  |  |  |  |  |  |
| Man higher educated           |  | 1.023         |                                      | 0.956         |   | 0.926         |   | 1.052         |                        | 1.024         |                               | 0.974         |  | 0.908         |  |  |  |  |  |  |  |  |  |  |
| Studying partner              |  | 0.907         |                                      | 0.803 *       |   | 0.996         |   | 1.139         |                        | 0.938 ***     |                               | 0.973 **      |  | 1.121         |  |  |  |  |  |  |  |  |  |  |
| Relative occupational status  |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Both (not) employed (Ref.)    |  |               |                                      |               |   |               |   |               |                        |               |                               |               |  |               |  |  |  |  |  |  |  |  |  |  |
| Woman employed, man not empl. |  | 1.114 *       |                                      | 1.069         |   | 1.003         |   | 1.168 *       |                        | 1.079         |                               | 0.998         |  | 1.003         |  |  |  |  |  |  |  |  |  |  |
| Man employed, woman not empl. |  | 1.193 ***     |                                      | 1.092 ***     |   | 1.009         |   | 1.132 **      |                        | 1.188 ***     |                               | 1.092 ***     |  | 1.027         |  |  |  |  |  |  |  |  |  |  |
| GII                           | 1.025 **   | 1.027 **      | 1.079 ***                            | 1.080 ***     | 1.035 *   | 1.035 *       | 1.014                                     | 1.014         | 1.021 **               | 1.022 **      | 1.038 **                      | 1.038 **      | 1.017  | 1.017         |  |  |  |  |  |  |  |  |  |  |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> Model controlled for age, age squared, partner status, parity, urbanity, and Gini

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 4: Descriptive statistics for the main individual-level, couple-level, and country-level independent variables per country for women with a childbearing desire (N=8,427)

|                      | Individual socioeconomic position |             |             |                     |             |              |                  | Relative socioeconomic position |                     |                  |                              |                                  |                                  | GII<br>Mean |
|----------------------|-----------------------------------|-------------|-------------|---------------------|-------------|--------------|------------------|---------------------------------|---------------------|------------------|------------------------------|----------------------------------|----------------------------------|-------------|
|                      | Education                         |             |             | Occupational status |             |              |                  | Relative education              |                     |                  | Relative occupational status |                                  |                                  |             |
|                      | Low                               | Middle      | High        | Studying            | Employed    | Not employed | Equally educated | Woman higher educated           | Man higher educated | Studying partner | Both (not) employed          | Woman employed, man not employed | Man employed, woman not employed |             |
|                      | %                                 | %           | %           | %                   | %           | %            | %                | %                               | %                   | %                | %                            | %                                | %                                |             |
| <b>Total NWE</b>     | <b>2.8</b>                        | <b>42.5</b> | <b>38.4</b> | <b>16.3</b>         | <b>61.0</b> | <b>39.0</b>  | <b>59.8</b>      | <b>17.1</b>                     | <b>9.9</b>          | <b>13.2</b>      | <b>64.3</b>                  | <b>6.2</b>                       | <b>29.4</b>                      | <b>25.9</b> |
| Austria <sup>a</sup> | 0.6                               | 50.5        | 36.0        | 13.0                | 63.0        | 37.0         | 62.7             | 16.2                            | 10.3                | 10.8             | 64.9                         | 5.6                              | 29.5                             | 30.0        |
| France               | 7.6                               | 32.6        | 40.9        | 18.9                | 62.8        | 37.2         | 54.1             | 20.8                            | 11.5                | 13.6             | 67.2                         | 6.0                              | 26.8                             | 26.0        |
| Germany              | 1.4                               | 52.1        | 29.7        | 16.9                | 51.1        | 48.9         | 65.3             | 9.1                             | 11.0                | 14.6             | 60.3                         | 7.8                              | 32.0                             | 24.0        |
| Norway               | 0.4                               | 30.4        | 48.4        | 20.8                | 58.8        | 41.2         | 58.0             | 18.8                            | 4.4                 | 18.8             | 59.6                         | 7.6                              | 32.8                             | 23.4        |
| <b>Total CEE</b>     | <b>7.7</b>                        | <b>52.6</b> | <b>35.2</b> | <b>4.4</b>          | <b>45.6</b> | <b>54.4</b>  | <b>70.7</b>      | <b>14.4</b>                     | <b>10.7</b>         | <b>4.2</b>       | <b>49.6</b>                  | <b>2.9</b>                       | <b>47.5</b>                      | <b>45.4</b> |
| Albania              | 56.8                              | 27.2        | 15.9        | 0.1                 | 25.8        | 74.2         | 68.1             | 13.0                            | 18.7                | 0.3              | 25.9                         | 0.1                              | 73.9                             | 54.5        |
| Armenia              | 0.4                               | 73.7        | 25.9        | 0.0                 | 18.4        | 81.6         | 77.8             | 8.1                             | 10.2                | 3.9              | 30.6                         | 0.9                              | 68.5                             | 57.0        |
| Azerbaijan           | 1.9                               | 82.0        | 16.1        | 0.0                 | 15.0        | 85.0         | 79.8             | 7.1                             | 13.2                | 0.0              | 18.9                         | 0.6                              | 80.5                             | 55.3        |
| Bulgaria             | 6.9                               | 55.2        | 28.8        | 9.1                 | 50.4        | 49.6         | 70.1             | 14.1                            | 7.2                 | 8.5              | 56.0                         | 8.0                              | 36.0                             | 39.9        |
| Czech Rep.           | 0.0                               | 55.7        | 16.3        | 28.0                | 40.7        | 59.3         | 72.6             | 6.0                             | 6.6                 | 14.8             | 56.3                         | 2.1                              | 41.6                             | 33.0        |
| Estonia <sup>a</sup> | 0.8                               | 36.4        | 53.2        | 9.6                 | 65.2        | 34.8         | 53.6             | 14.0                            | 22.4                | 10.0             | 66.8                         | 2.8                              | 30.4                             | 40.9        |
| Georgia              | 0.0                               | 42.7        | 52.3        | 5.0                 | 23.9        | 76.1         | 67.4             | 17.9                            | 8.7                 | 6.0              | 43.1                         | 3.2                              | 53.7                             | 59.7        |
| Lithuania            | 0.5                               | 38.1        | 47.5        | 14.0                | 55.6        | 44.4         | 62.4             | 19.0                            | 8.9                 | 9.6              | 60.2                         | 3.3                              | 36.5                             | 35.9        |
| Moldova              | 0.8                               | 66.4        | 32.8        | 0.0                 | 54.6        | 45.4         | 77.9             | 13.5                            | 8.7                 | 0.0              | 58.1                         | 4.0                              | 37.9                             | 42.9        |
| Poland               | 4.9                               | 55.6        | 36.1        | 3.4                 | 54.9        | 45.1         | 67.0             | 22.4                            | 7.9                 | 2.7              | 55.7                         | 3.8                              | 40.5                             | 32.5        |
| Romania              | 1.9                               | 67.3        | 22.2        | 8.6                 | 62.3        | 37.7         | 73.5             | 11.3                            | 8.6                 | 6.6              | 63.8                         | 3.9                              | 32.3                             | 47.8        |
| Russian Fed.         | 0.0                               | 26.2        | 72.1        | 1.7                 | 58.8        | 41.2         | 58.8             | 28.2                            | 10.6                | 2.3              | 55.8                         | 7.6                              | 36.5                             | 44.2        |
| Ukraine              | 0.3                               | 38.2        | 59.3        | 2.3                 | 66.8        | 33.2         | 70.7             | 14.2                            | 9.2                 | 5.9              | 66.4                         | 1.5                              | 32.1                             | 46.3        |

<sup>a</sup> Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21.

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 5: Descriptive statistics for the main individual-level, couple-level, and country-level independent variables per country for women with no childbearing desire (N=23,205)

|                      | Individual socioeconomic position |             |             |                     |             |              |                  | Relative socioeconomic position |                     |                  |                              |                                  |                                  | GII<br>Mean |
|----------------------|-----------------------------------|-------------|-------------|---------------------|-------------|--------------|------------------|---------------------------------|---------------------|------------------|------------------------------|----------------------------------|----------------------------------|-------------|
|                      | Education                         |             |             | Occupational status |             |              |                  | Relative education              |                     |                  | Relative occupational status |                                  |                                  |             |
|                      | Low                               | Middle      | High        | Studying            | Employed    | Not employed | Equally educated | Woman higher educated           | Man higher educated | Studying partner | Both (not) employed          | Woman employed, man not employed | Man employed, woman not employed |             |
|                      | %                                 | %           | %           | %                   | %           | %            | %                | %                               | %                   | %                | %                            | %                                | %                                |             |
| <b>Total NWE</b>     | <b>5.6</b>                        | <b>56.6</b> | <b>36.1</b> | <b>1.7</b>          | <b>75.9</b> | <b>24.1</b>  | <b>66.5</b>      | <b>16.9</b>                     | <b>14.9</b>         | <b>1.6</b>       | <b>74.8</b>                  | <b>3.8</b>                       | <b>21.4</b>                      | <b>25.9</b> |
| Austria <sup>a</sup> | 0.5                               | 69.8        | 28.8        | 0.8                 | 75.3        | 24.7         | 70.2             | 12.3                            | 16.6                | 0.8              | 74.8                         | 2.4                              | 22.8                             | 30.0        |
| France               | 21.4                              | 43.4        | 32.8        | 2.4                 | 75.3        | 24.7         | 59.4             | 22.4                            | 16.7                | 1.5              | 73.6                         | 4.9                              | 21.4                             | 26.0        |
| Germany              | 0.5                               | 67.4        | 31.3        | 0.8                 | 67.0        | 33.0         | 71.0             | 9.2                             | 18.6                | 1.1              | 67.8                         | 3.6                              | 28.6                             | 24.0        |
| Norway               | 0.1                               | 46.0        | 51.1        | 2.7                 | 86.3        | 13.7         | 65.5             | 23.9                            | 7.5                 | 3.1              | 83.4                         | 4.0                              | 12.6                             | 23.4        |
| <b>Total CEE</b>     | <b>10.0</b>                       | <b>64.8</b> | <b>25.0</b> | <b>0.3</b>          | <b>51.6</b> | <b>48.4</b>  | <b>76.4</b>      | <b>11.1</b>                     | <b>11.6</b>         | <b>0.9</b>       | <b>52.5</b>                  | <b>4.3</b>                       | <b>43.1</b>                      | <b>45.4</b> |
| Albania              | 52.6                              | 38.9        | 8.5         | 0.0                 | 37.7        | 62.3         | 68.6             | 11.1                            | 20.3                | 0.0              | 37.7                         | 0.0                              | 62.3                             | 54.5        |
| Armenia              | 0.6                               | 81.4        | 17.7        | 0.3                 | 31.7        | 68.3         | 81.2             | 6.4                             | 9.3                 | 3.2              | 36.1                         | 2.0                              | 61.9                             | 57.0        |
| Azerbaijan           | 2.5                               | 88.1        | 9.4         | 0.0                 | 20.7        | 79.3         | 82.5             | 4.3                             | 13.2                | 0.0              | 24.4                         | 1.1                              | 74.5                             | 55.3        |
| Bulgaria             | 5.8                               | 72.1        | 22.1        | 0.1                 | 67.4        | 32.6         | 82.2             | 11.8                            | 5.9                 | 0.1              | 68.2                         | 12.1                             | 19.7                             | 39.9        |
| Czech Rep.           | 0.0                               | 85.7        | 14.0        | 0.3                 | 73.3        | 26.7         | 84.7             | 6.3                             | 8.8                 | 0.1              | 75.2                         | 2.9                              | 21.9                             | 33.0        |
| Estonia <sup>a</sup> | 0.2                               | 40.9        | 58.8        | 0.2                 | 78.6        | 21.4         | 62.1             | 19.4                            | 18.3                | 0.2              | 76.4                         | 4.8                              | 18.8                             | 40.9        |
| Georgia              | 0.9                               | 44.8        | 54.2        | 0.0                 | 37.9        | 62.1         | 68.4             | 16.0                            | 15.7                | 0.0              | 46.0                         | 7.8                              | 46.3                             | 59.7        |
| Lithuania            | 0.0                               | 41.1        | 58.6        | 0.3                 | 79.6        | 20.4         | 64.1             | 24.5                            | 11.1                | 0.3              | 75.5                         | 7.3                              | 17.2                             | 35.9        |
| Moldova              | 0.9                               | 81.0        | 18.2        | 0.0                 | 65.0        | 35.0         | 85.2             | 8.3                             | 6.5                 | 0.0              | 64.7                         | 5.4                              | 30.0                             | 42.9        |
| Poland               | 6.7                               | 66.7        | 26.5        | 0.1                 | 63.6        | 36.4         | 72.0             | 20.0                            | 7.9                 | 0.1              | 61.5                         | 9.2                              | 29.3                             | 32.5        |
| Romania              | 2.7                               | 84.2        | 13.0        | 0.1                 | 65.6        | 34.4         | 85.1             | 5.1                             | 9.6                 | 0.2              | 63.6                         | 8.6                              | 27.8                             | 47.8        |
| Russian Fed.         | 0.2                               | 27.4        | 72.4        | 0.0                 | 76.9        | 23.1         | 65.1             | 22.3                            | 12.6                | 0.0              | 69.9                         | 9.1                              | 21.0                             | 44.2        |
| Ukraine              | 0.1                               | 40.5        | 57.0        | 2.3                 | 78.2        | 21.8         | 67.9             | 17.5                            | 8.3                 | 6.4              | 77.9                         | 1.5                              | 20.6                             | 46.3        |

<sup>a</sup> Two countries applied an alternative age range as compared to the other countries. In Austria, only women between 18 and 45 were selected for the questionnaire and in Estonia, the minimum age of the respondents was 21.

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 6: Percentages and percentage differences in contraceptive method by European region

|                                 | Women who intend to have children (N=8,427) |      |            |                    | Women who do not intend to have children (N=23,205) |      |            |                    |
|---------------------------------|---|------|------------|--------------------|---|------|------------|--------------------|
|                                 | NWE   | CEE  | Difference | Sign. <sup>a</sup> | NWE   | CEE  | Difference | Sign. <sup>a</sup> |
| No method                       | 13.7  | 27.5 | 13.8       | ***                | 15.4  | 24.0 | 8.7        | ***                |
| Traditional male method         | 0.7   | 21.3 | 20.6       | ***                | 0.4   | 33.2 | 32.8       | ***                |
| Traditional female method       | 1.1   | 4.6  | 3.6        | ***                | 1.5   | 5.3  | 3.8        | ***                |
| Modern reversible male method   | 13.2  | 18.3 | 5.1        | ***                | 8.3   | 8.6  | 0.3        |                    |
| Modern reversible female method | 71.3  | 28.2 | 43.1       | ***                | 61.9  | 24.9 | 37.0       | ***                |
| Modern permanent male method    | -   | -    | -          | -                  | 3.9   | 0.1  | 3.8        | ***                |
| Modern permanent female method  | -   | -    | -          | -                  | 8.6   | 3.9  | 4.7        | ***                |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> z-score calculated by dividing the percentage difference by the standard error of the percentage difference

Data source: DHS (2005-2009), GGP Data Archive (2016)

Appendix 7: Logistic multilevel analyses for the association between individual-level, couple-level, and country-level gender inequality, and contraceptive use, by contraceptive division (Ref.=Female method)

|                                  | Women who intend to have children  |         |   |           |  |          | Women who do not intend to have children  |           |  |           |  |  |
|----------------------------------|--|---------|---|-----------|--|----------|---|-----------|--|-----------|--|--|
|                                  | Traditional method<br>(N <sub>women</sub> =1,735;<br>N <sub>countries</sub> =17) |         | Modern reversible<br>Method<br>(N <sub>women</sub> =4,628;<br>N <sub>countries</sub> =17) |           | Traditional method<br>(N <sub>women</sub> =7,447;<br>N <sub>countries</sub> =17) |          | Modern reversible<br>Method<br>(N <sub>women</sub> =9,271;<br>N <sub>countries</sub> =17) |           | Modern permanent<br>Method<br>(N <sub>women</sub> =1,261;<br>N <sub>countries</sub> =15) |           |  |  |
|                                  | Male method <sup>a</sup>   |         | Male method <sup>a</sup>  |           | Male method <sup>a</sup>   |          | Male method <sup>a</sup>  |           | Male method <sup>a</sup>   |           |  |  |
|                                  | Model 1  | Model 2 | Model 1   | Model 2   | Model 1  | Model 2  | Model 1   | Model 2   | Model 1  | Model 2   |  |  |
|                                  | OR   | OR      | OR  | OR        | OR   | OR       | OR  | OR        | OR   | OR        |  |  |
| Intercept                        | 1.661  | 1.843 * | 0.635 **  | 0.622 **  | 1.310  | 1.572    | 0.565 ***   | 0.523 *** | 0.242 ***  | 0.206 *** |  |  |
| Education                        |  |         |   |           |  |          |   |           |  |           |  |  |
| Low                              | 1.642  |         | 0.872   |           | 2.344 ***  |          | 0.988   |           | 0.992  |           |  |  |
| Middle                           | 1.513 ***  |         | 0.876 **  |           | 1.428 ***  |          | 0.870 ***   |           | 0.848  |           |  |  |
| High (Ref.)                      |  |         |   |           |  |          |   |           |  |           |  |  |
| Studying                         | 0.989  |         | 0.649 ***   |           | 1.265  |          | 0.872   |           | 1.449  |           |  |  |
| Occupational status              |  |         |   |           |  |          |   |           |  |           |  |  |
| Employed (Ref.)                  |  |         |   |           |  |          |   |           |  |           |  |  |
| Not employed                     | 0.950  |         | 1.267 ***   |           | 1.081  |          | 1.123 **  |           | 0.838  |           |  |  |
| Relative education               |  |         |   |           |  |          |   |           |  |           |  |  |
| Equally educated (Ref.)          |  |         |   |           |  |          |   |           |  |           |  |  |
| Woman higher educated            |  | 0.912   |   | 0.914     |  | 0.880    |   | 1.025     |  | 1.155     |  |  |
| Man higher educated              |  | 1.101   |   | 0.935     |  | 0.946    |   | 1.054     |  | 1.113     |  |  |
| Studying partner                 |  | 0.978   |   | 0.788 **  |  | 0.884    |   | 1.109     |  | 1.620     |  |  |
| Relative occupational status     |  |         |   |           |  |          |   |           |  |           |  |  |
| Both (not) employed (Ref.)       |  |         |   |           |  |          |   |           |  |           |  |  |
| Woman employed, man not employed |  | 1.284   |   | 0.954     |  | 1.104    |   | 0.975     |  | 1.129     |  |  |
| Man employed, woman not employed |  | 1.058   |   | 1.216 *** |  | 1.167 ** |   | 1.091 *   |  | 0.875     |  |  |
| GII                              | 1.022  | 1.027   | 1.024 *   | 1.025 *   | 1.047  | 1.048    | 1.013   | 1.013     | 0.928 **   | 0.928 **  |  |  |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> Model controlled for age, age squared, partner status, parity, urbanity, and Gini

Data source: DHS (2005-2009), GGP Data Archive (2016)

Table 1: The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with a childbearing desire (N<sub>women</sub>=8,427; N<sub>countries</sub>=17)

|                                  | Contraceptive use (Ref.=Modern reversible method) |     |         |     |                                 |     |         |     | Contraceptive division (Ref.=Female method) |     |         |     |                          |     |         |     |
|----------------------------------|---|-----|---------|-----|---------------------------------|-----|---------|-----|---|-----|---------|-----|--------------------------|-----|---------|-----|
|                                  | No method <sup>a</sup>                            |     |         |     | Traditional method <sup>a</sup> |     |         |     | No method <sup>a</sup>                      |     |         |     | Male method <sup>a</sup> |     |         |     |
|                                  | Model 1   |     | Model 2 |     | Model 1                         |     | Model 2 |     | Model 1                                     |     | Model 2 |     | Model 1                  |     | Model 2 |     |
|                                  | OR  |     | OR      | OR  |                                 | OR  |         | OR  | OR  |     | OR      | OR  |                          | OR  |         | OR  |
| Intercept                        | 0.597   | *** | 0.645   | **  | 0.423                           | *** | 0.448   | *** | 0.698                                       | **  | 0.743   | *   | 0.847                    |     | 0.864   |     |
| Education                        |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Low                              | 1.637   | *** |         |     | 1.350                           | **  |         |     | 1.525                                       | *** |         |     | 1.175                    |     |         |     |
| Middle                           | 1.156   | *** |         |     | 1.157                           | **  |         |     | 1.106                                       | **  |         |     | 1.000                    |     |         |     |
| High (Ref.)                      |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Studying                         | 0.531   | *** |         |     | 0.792                           |     |         |     | 0.443                                       | *** |         |     | 0.740                    | *** |         |     |
| Occupational status              |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Employed (Ref.)                  |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Not employed                     | 1.342   | *** |         |     | 1.175                           | *** |         |     | 1.436                                       | *** |         |     | 1.238                    | *** |         |     |
| Relative education               |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Equally educated (Ref.)          |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Woman higher educated            |   |     | 1.027   |     |                                 |     | 0.989   |     |   |     | 1.001   |     |                          |     | 0.921   |     |
| Man higher educated              |   |     | 1.086   |     |                                 |     | 1.093   |     |   |     | 1.054   |     |                          |     | 1.002   |     |
| Studying partner                 |   |     | 0.605   | *** |                                 |     | 0.800   | *   |   |     | 0.549   | *** |                          |     | 0.802   | **  |
| Relative occupational status     |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Both (not) employed (Ref.)       |   |     |         |     |                                 |     |         |     |   |     |         |     |                          |     |         |     |
| Woman employed, man not employed |   |     | 0.938   |     |                                 |     | 1.138   |     |   |     | 0.915   |     |                          |     | 1.003   |     |
| Man employed, woman not employed |   |     | 1.289   | *** |                                 |     | 1.171   | *** |   |     | 1.362   | *** |                          |     | 1.203   | *** |
| GII                              | 1.032   | **  | 1.034   | **  | 1.071                           | *** | 1.072   | *** | 1.034                                       | **  | 1.037   | **  | 1.046                    | **  | 1.047   | **  |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> Model controlled for age, age squared, partner status, parity, urbanity, and Gini

Data source: DHS (2005-2009), GGP Data Archive (2016)



Table 2: The association between individual-level, couple-level, and country-level gender inequality, and contraceptive use and division for women with no childbearing desire (N<sub>women</sub>=23,205; ; N<sub>countries</sub>=17)

|                                  | Contraceptive use (Ref.=Modern reversible method) |               |                                 |               |                                      |               | Contraceptive division (Ref.=Female method) |               |                          |               |  |  |
|----------------------------------|---|---------------|---------------------------------|---------------|--------------------------------------|---------------|---|---------------|--------------------------|---------------|--|--|
|                                  | No method <sup>a</sup>                            |               | Traditional method <sup>a</sup> |               | Modern permanent method <sup>a</sup> |               | No method <sup>a</sup>                      |               | Male method <sup>a</sup> |               |  |  |
|                                  | Model 1<br>OR                                     | Model 2<br>OR | Model 1<br>OR                   | Model 2<br>OR | Model 1<br>OR                        | Model 2<br>OR | Model 1<br>OR                               | Model 2<br>OR | Model 1<br>OR            | Model 2<br>OR |  |  |
| Intercept                        | 0.762 *   | 0.828         | 0.578 **                        | 0.621 *       | 0.320 ***                            | 0.341 ***     | 0.717 **                                    | 0.764 *       | 0.780                    | 0.807         |  |  |
| Education                        |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Low                              | 1.483 ***   |               | 1.165 **                        |               | 1.277 **                             |               | 1.435 ***                                   |               | 1.098                    |               |  |  |
| Middle                           | 1.165 ***   |               | 1.132 ***                       |               | 1.144 **                             |               | 1.126 ***                                   |               | 1.046                    |               |  |  |
| High (Ref.)                      |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Studying                         | 0.774   |               | 0.686 *                         |               | 1.183                                |               | 0.757 *                                     |               | 0.966                    |               |  |  |
| Occupational status              |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Employed (Ref.)                  |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Not employed                     | 1.206 ***   |               | 1.121 ***                       |               | 1.137 **                             |               | 1.187 ***                                   |               | 1.101 ***                |               |  |  |
| Relative education               |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Equally educated (Ref.)          |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Woman higher educated            |   | 0.993         |                                 | 0.977         |                                      | 1.007         |   | 0.990         |                          | 0.967         |  |  |
| Man higher educated              |   | 1.017         |                                 | 0.953         |                                      | 1.049         |   | 1.024         |                          | 0.980         |  |  |
| Studying partner                 |   | 0.931         |                                 | 0.779 **      |                                      | 1.178         |   | 0.961         |                          | 0.957         |  |  |
| Relative occupational status     |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Both (not) employed (Ref.)       |   |               |                                 |               |                                      |               |   |               |                          |               |  |  |
| Woman employed, man not employed |   | 1.104 *       |                                 | 1.069         |                                      | 1.139         |   | 1.072         |                          | 1.001         |  |  |
| Man employed, woman not employed |   | 1.193 ***     |                                 | 1.094 ***     |                                      | 1.128 **      |   | 1.185 ***     |                          | 1.091 ***     |  |  |
| GII                              | 1.025 **  | 1.026 **      | 1.077 ***                       | 1.078 ***     | 1.013                                | 1.014         | 1.021 *                                     | 1.022 *       | 1.038 **                 | 1.039 **      |  |  |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> Model controlled for age, age squared, partner status, parity, urbanity, and Gini

Data source: DHS (2005-2009), GGP Data Archive (2016)

Table 3: The association between European region and country-level gender inequality, and contraceptive use and division

| <b>Women who intend to have children</b> (N <sub>women</sub> =8,427; N <sub>countries</sub> =17) |  |         |                           |          |  |     |           |                    |           |       |
|--|--|---------|---------------------------|----------|--|-----|-----------|--------------------|-----------|-------|
|  | <b>Contraceptive use</b> (Ref.=Modern reversible method) |         |                           |          | <b>Contraceptive division</b> (Ref.=Female method) |     |           |                    |           |       |
|  | <b>No method</b>   |         | <b>Traditional method</b> |          | <b>No method</b>                                   |     |           | <b>Male method</b> |           |       |
|  | East-West  | GII     | East-West                 | GII      | East-West  | GII | East-West | GII                | East-West | GII   |
|  | OR   | OR      | OR                        | OR       | OR   | OR  | OR        | OR                 | OR        | OR    |
| Model 1  | 1.650  | *       | 3.427                     | ***      |  |     | 1.775     | *                  | 2.189     | **    |
| Model 2  | 1.580  |         | 3.114                     | ***      |  |     | 1.777     | *                  | 2.393     | **    |
| Model 3 <sup>a</sup>   | 1.530  |         | 3.114                     | ***      |  |     | 1.725     | *                  | 2.381     | **    |
| Model 4 <sup>a</sup>   | 0.940  | 1.034 * | 1.480                     | 1.057 ** |  |     | 1.122     | 1.030              | 1.539     | 1.029 |

  

| <b>Women who do not intend to have children</b> (N <sub>women</sub> =23,205; N <sub>countries</sub> =17) |  |       |                           |          |                                |  |           |       |                    |       |
|--|--|-------|---------------------------|----------|--------------------------------|--|-----------|-------|--------------------|-------|
|  | <b>Contraceptive use</b> (Ref.=Modern reversible method) |       |                           |          |                                | <b>Contraceptive division</b> (Ref.=Female method) |           |       |                    |       |
|  | <b>No method</b>   |       | <b>Traditional method</b> |          | <b>Modern permanent method</b> | <b>No method</b>                                   |           |       | <b>Male method</b> |       |
|  | East-West  | GII   | East-West                 | GII      | East-West                      | GII  | East-West | GII   | East-West          | GII   |
|  | OR   | OR    | OR                        | OR       | OR                             | OR   | OR        | OR    | OR                 | OR    |
| Model 1  | 1.667  | **    | 4.111                     | ***      | 1.018                          |  | 1.674     | **    | 1.896              | **    |
| Model 2  | 1.620  | *     | 3.963                     | ***      | 0.958                          |  | 1.642     | *     | 2.045              | **    |
| Model 3 <sup>a</sup>   | 1.592  | *     | 3.971                     | ***      | 0.949                          |  | 1.612     | **    | 2.036              | **    |
| Model 4 <sup>a</sup>   | 1.182  | 1.019 | 1.972 *                   | 1.050 ** | 0.696                          | 1.031  | 1.349     | 1.010 | 1.378              | 1.026 |

\*\*\*p<.001, \*\*p<.01, \*p<.05

<sup>a</sup> The models with absolute and relative socioeconomic status show similar estimates. This table is limited to the models including absolute socioeconomic status.

Data source: DHS (2005-2009), GGP Data Archive (2016)

Model 1: East-West dummy

Model 2: East-West dummy, age, age squared, partner status, parity, urbanity, and Gini.

Model 3: East-West dummy, age, age squared, partner status, parity, urbanity, Gini, education, and occupational status.

Model 4: East-West dummy, age, age squared, partner status, parity, urbanity, Gini, education, occupational status, and GII.

