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Division of Labour, Fertility Intentions, and Childbearing in Estonia

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Abstract: Gender Revolution Theory offers a compelling hypothesis about the role of gender equality in contemporary fertility dynamics, suggesting that a more egalitarian division of paid and unpaid labour among couples will enhance childbearing. However, the empirical evidence supporting is weak. This study focuses on the division of labour and asks if couples in which the woman works full-time while also doing most of the housework have lower fertility intentions and parity progression. The study is set in Estonia, which experienced an early transition to full-time female employment, but also a prolonged period with a lack of egalitarianism in household work during the state socialist regime and afterwards. We use two family and fertility surveys conducted in the mid-1990s and the mid-2000s, both with a register follow-up. Applying ordinal and logistic regression models, we analyse both fertility intentions at the time of and actual childbearing in the five years following the surveys. We find that neither the fertility intentions nor the fertility behaviour of full-time employed women is higher in couples with a more equal division of housework, compared with couples in which the woman does most of the housework This finding applies regardless of parity. The conclusions are robust to a number of sensitivity analyses. The results call into question the relevance of division of labour as a factor in explaining socialist and post-socialist fertility behaviour.

Keywords: Gender revolution · Housework · Childcare · Fertility · Estonia

1 Introduction

Over the past three decades, the division of paid and unpaid work in the family has become a major topic in explaining fertility dynamics in wealthy countries (*Esping-Andersen/Billari* 2015; *Goldscheider et al.* 2015; *McDonald* 2000). In this context, *Goldscheider, Bernhardt*, and *Lappegård* (2015) proposed a framework known as the Gender Revolution Theory (GRT), which posits that a lack of egalitarianism in the private sphere, such as an unequal division of domestic labour, is one key reason for relatively low levels of fertility. According to GRT, in the context of widespread and normatively expected female labour market participation (the first stage of the

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revolution) and the opportunities that this offers for women, there must be a second stage of the revolution that effects changes in the domestic domain. To reduce women's "second [work] shift" at home (*Hochschild/Machung* 1989), which, due to exhaustion, decreases the probability of having a (next) child, men are expected to increase their participation in daily unpaid domestic duties. As men's involvement in the family increases, GRT predicts an increase in childbearing, creating a U-shaped relationship between gender equality and fertility.

Analyses of individual-level data, testing the role of division of labour, have produced mixed results (for an overview, see *Leocádio et al.* 2025; *Neyer et al.* 2013; *Raybould/Sear* 2021). This calls for further attempts to address this question in different contexts. This paper focuses on Estonia, a country offering an interesting setting in terms of GRT. Estonia experienced an early demographic transition, with the total fertility rate (TFR) reaching 2.1 in the late 1920s (*Gortfelder* 2020). The Soviet Union annexed Estonia during World War II, leading to massive and multifaceted institutional changes (*Kasekamp* 2010). Importantly for our analysis, high female labour market participation became the norm in Estonia earlier than in the West. By the 1990s, Estonia had already had decades of experience with high female labour force participation (*Puur* 2005, 1995). However, even as women participated massively in paid work, there was no parallel increase in men's involvement in domestic duties (*Anderson/Vöörmann* 1996; *Haavio-Mannila/Kelam* 1996; *Haavio-Mannila/Rannik* 1987).

In other words, Estonia had a prolonged period in which – applying the terms of the GRT – the first stage of the gender revolution was more or less completed, but the second stage had not taken hold. To our knowledge, the existing literature contains only one article with a focus on Eastern Europe, combining data from five countries (*Fanelli/Profeta* 2021). This gap makes the present study a relevant addition to the analysis of fertility intentions and behaviour from a GRT perspective.

We use data from two comprehensive family surveys from the mid-1990s and 2000s to study how the division of paid and unpaid work in couples is associated with fertility in Estonia. The survey data are supplemented with follow-up information from the population register. This allows us to compare fertility intentions stated at time of the survey and actual childbearing behaviour in the following years.

2 Theoretical background and previous findings

2.1 Theoretical background

GRT assumes a gendered division of work and family life into separate spheres as its initial state, emerging with industrialisation. Paid work was done at a workplace and not at home. Accordingly, men are mostly employed in the labour market, and women are left in charge of domestic duties (*Stanfors/Goldscheider* 2017). Such a division is considered beneficial for childbearing (*Esping-Andersen/Billari* 2015). In the micro-economic theoretical framework, this division of labour is supported by *Becker's* (1993: 30-53) idea of specialisation (men as breadwinners, women as

homemakers), which is also compatible with a relatively high level of fertility for a single family.

This equilibrium is disrupted by the first stage of the gender revolution (*Goldscheider et al.* 2015: 209-210), in which women enter the labour force and higher education *en masse*, as a precursor for eventually moving into professional occupations. In other words, gender equality emerges in the public sphere (*McDonald* 2000). At the micro level, this development produces tensions, since there is a clear opportunity cost for a working woman being the main caregiver. If she indeed pursues full-time work and is still expected to do most of the household tasks and childcare, this increases stress and exhaustion (*Hochschild/Machung* 1989) and produces a motivation to limit the number of (additional) children and the care work associated with having (more) children. In other words, having (more) children is seen as incompatible with the many paid and unpaid duties.

Some of these conflicts between work and family can be reduced, according to GRT, in the second stage of the gender revolution (*Goldscheider et al.* 2015: 211), in which men become more active in domestic tasks. In this way, equality also emerges in the private sphere. Thus, if a man increases his share in household and childcare tasks, this limits the stress and time demands of (potential) motherhood for a working woman. It also allows her to focus more on her work in terms of workhours and career development, thus decreasing the alternative cost of being a mother (*Torr/Short* 2004: 118). With an equitable sharing of tasks and responsibilities both at home and on the labour market, the GRT framework would expect a greater willingness to have a (next) child compared to full-time working women whose partners do not contribute in the domestic sphere.

GRT theorists not only emphasise the couple and its division of labour as relevant for lowering the burden of women, but also point out the relevance of institutions with respect to daycare, parental leave, and labour market norms (*Esping-Andersen/ Billari* 2015). In other words, the adjustment to full-time working women affects the social order more broadly. Due to the inertia of norms and institutions, the adjustment takes place with a time lag, further contributing to low fertility.

2.2 Previous findings

More than twenty papers have used micro-level data to study the link between the division of domestic labour and fertility. This has been done both for fertility intentions as well as actual childbearing. Overall, the literature does not give a clear answer as to whether the division of labour is more relevant for intentions or actual births. From a theoretical perspective, we may assume the association to be stronger for intentions, since behaviour also depends on other concerns that are not under the control of the individual, such as fecundity.

The evidence in existing empirical studies is mixed (for a more detailed overview, see *Leocádio et al.* 2025; *Neyer et al.* 2013; *Raybould/Sear* 2021). In part, this variation may be driven by differences in how the main variables capturing the division of labour are constructed. These may be based on time use surveys, which present data on time spent on domestic duties in absolute or proportional terms (*Miettinen*

et al. 2015). Other surveys may ask for the overall or task-specific division of labour, which can then be summarised into an index (*Fanelli/Profeta* 2021). One explanation for the mixed results may be that some studies analyse the effects for childcare and other household tasks separately and not cumulatively. However, there is no clear answer which of the two is more important. For instance, *Cooke* (2004) finds the division of childcare, but not housework, to be relevant in predicting second births and birth intentions, while *Suero* (2023) finds the opposite.

Furthermore, we might expect the associations to differ with respect to parity. Given the heightened burdens associated with the arrival of the first child, the non-egalitarian division of labour may be theoretically seen to be especially relevant for having or wanting to have a second child (*Buber-Ennser* 2003), and this is indeed the most researched parity progression in the available literature. However, the literature is not unanimous in its conclusions (*Dommermuth et al*. 2017).

Needless to say, country context also matters for whether and to which extent the household division of labour affects fertility. As discussed, relevant contextual factors include female employment, the use of public childcare, and the cultural norms related to them. Given that countries change in these aspects, the relationships may change over time as well. For Spain, *Cooke* (2009) did not find any association between the division of labour and second births with data from the 1990s, whereas *Suero* (2023) did with data from 2018 and second birth intentions.

GRT is largely based on the experience of Northern European societies, where egalitarianism in both the public and private spheres has been a political priority. Micro-level evidence does give some support for the mechanisms underlined by GRT. Second births in Sweden have been shown to be more likely if home management is equally shared (*Oláh* 2003). For Denmark, however, the father's share of childcare does not correlate with the likelihood of a second birth (*Brodmann et al*. 2007). The same is true for Norway, and for both childcare and housework, although for couples with two children, an egalitarian division of housework is associated with a greater propensity to have a third child (*Dommermuth et al*. 2017). In Finland, a GRT-congruent result was found with respect to time spent on household tasks by the woman and the occurrence of a second or third child, although the relationship was not linear (*Miettinen et al*. 2015). *Goldscheider et al*. (2013) paired actual division of labour with preferences for it, showing that consistently egalitarian couples had higher second birth propensity, although the same was not the case with first or third births.

Studies of German-speaking countries have mostly not supported GRT. For Germany, it has been shown that a greater share of childcare done by the father is related to a greater propensity to have a second child (*Cooke* 2004). On the other hand, the same study did not find a similar result with respect to household tasks, but did find second births to be more probable in male-breadwinner, female-housemaker families. For West Germany, it has been shown that first-birth rates were higher among non-egalitarian couples (*Henz* 2008). These results have been replicated using newer data, while underpinning that satisfaction with the division of labour, not the division itself, is tied to greater birth intensities (*Köppen/Trappe*

2019). Conversely, in Austria, satisfaction was not linked to greater second-birth propensity, but the division of tasks itself was (*Buber-Ennser* 2003).

For the UK and US, it has been shown that an egalitarian division of tasks is associated with higher second-birth probability, although studies also find evidence of greater fertility among specialised couples (*Schober* 2013; *Torr/Short* 2004). Studies on Australia have not found similar associations (*Craig/Siminski* 2011; *Luppi* 2016).

The empirical record is also mixed for Southern Europe. In Spain, two studies have found no associations with second-birth likelihood (*Brodmann et al.* 2007; *Cooke* 2009), but one has found some non-linear effects for second-birth intentions (*Suero* 2023). For Italy, most studies have found working women's domestic burden to be negatively associated with second-birth risks or intentions (*Cooke* 2009; *Fiori* 2011, *Mencarini/Tanturri* 2004; *Mills et al.* 2008; *Pinnelli/Fiori* 2008). On the other hand, *Rinesi et al.* (2011) did not find the contribution of the father to matter with respect to intentions or realisations.

Some studies have combined data from rather different countries. Here, the results are also not clear. *Neyer et al.* (2013) found that women with a more egalitarian division of labour profess to have greater second and third birth intentions, but this relationship did not hold with first births. *Aassve et al.* (2015) focused on the connection between gender ideology and division of labour, finding that second-birth propensity is higher among egalitarian couples, but that this did not apply to first or third births. *Riederer et al.* (2019) found that couples with an egalitarian division of household tasks have greater first- and second-birth intentions, while this did not hold for third births and realisation regardless of parity.

Importantly for our analysis, only a single paper has so far focused exclusively on Eastern Europe. Eastern Europe offers an interesting context given the decades-long prevalence of female employment and public childcare under state socialism. This sole article pooled data for five countries (Bulgaria, Czechia, Hungary, Poland, and Russia) to increase the number of cases in the analysis (*Fanelli/Profeta* 2021) and indeed found that a higher involvement of fathers in housework is associated with a higher propensity of having a second child.

3 The Estonian context

Estonia was among the countries that completed the fertility transition in the interwar years (*Gortfelder* 2020; *Katus* 1994). World War II and the Soviet occupation substantially altered Estonia's demographic development (*Sobotka* 2011): Unlike other countries that had completed the fertility transition before the onset of war, for example in Northern and Western Europe, there was no baby boom in Estonia, due to population loss, political violence, and the absence of a post-war increase in economic wellbeing (*Frejka* 2017; *Klesment et al.* 2010: 23-29). The TFR increased to around 2.1 only in the late 1960s, staying at this level until the collapse of state socialism in 1991. The societal transition led to an abrupt decline in the TFR, with a low point of 1.28 in 1998 and some subsequent improvement in the 21st century.

However, completed fertility shows that much of the change in TFR was due to postponement.

Socialist countries had an ideological commitment to female work, and indeed women's labour force participation in the Soviet Union was higher than in capitalist countries (*United Nations* 1991). Especially during and after World War II, which killed and maimed working-age men, there was a need for an expanded labour force (*Ofer/Vinokur* 1985; *Schuster* 1971). In post-war Estonia, the lack of working-age men was a profound problem (*Gortfelder/Puur* 2023; *Puur/Uuet* 2010).

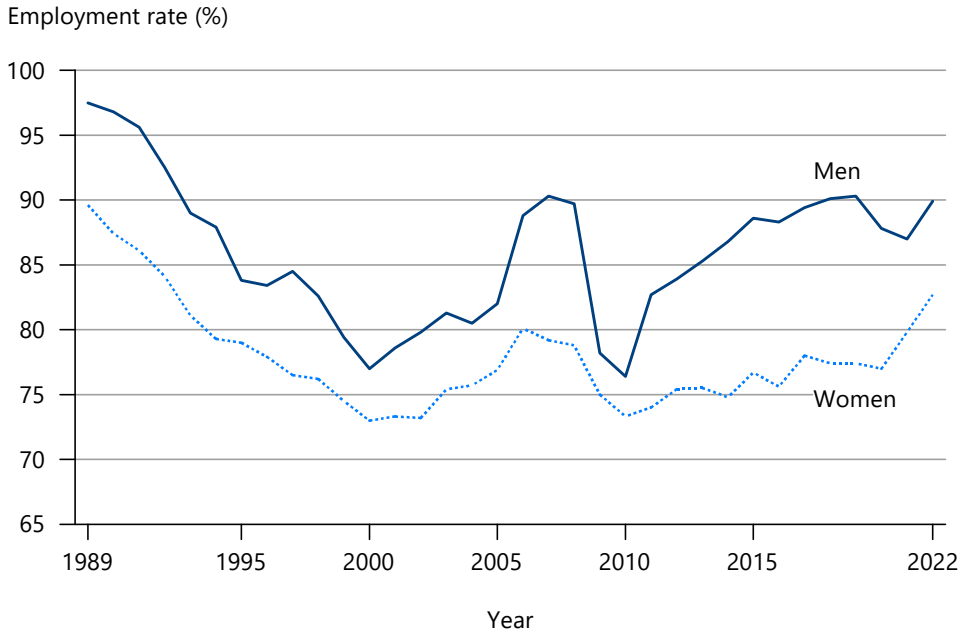
Economic sovietisation brought about an abrupt transformation. The economy during independence between the world wars had been dominated by smallholding agriculture (*Norkus/Markevičiūtė* 2021). Taking into account the work done in family farms and non-agricultural family enterprises, working-age female employment stood at 70 percent in the 1930s. The breadwinner-homemaker system was far from the norm in interwar Estonia (*Puur* 2005). The subsequent Soviet emphasis on industrialisation created many jobs in urban areas and collective agriculture in the countryside (*Kasekamp* 2010), making female employment more visible in employment statistics.

Unfortunately, we lack reliable employment data from this period, as the first post-war census in the Soviet Union was only held in 1959. It shows that in Estonia, 75.4 percent of women aged 25-49 and 96 percent of men of the same age were employed. Successive censuses showed that the sex gap almost disappeared, with female participation rising to above 90 percent (*Puur* 2005, 1995). Compared to their counterparts in different "First World" (i.e., capitalist and US-aligned) nations, Estonian women in the 1960s on average worked 6-18 years more between the ages of 20 and 50, whereas in the 1980s the difference was 1-13 years (*Puur* 1995).

Figure 1 shows employment rates by sex for years closer to our study period. These numbers are derived from standard labour force surveys (*Noorkõiv et al.* 1998). The gap between male and female employment rates remains rather similar over time. However, the socialist system was not as egalitarian with respect to income. Household income surveys show that from the 1950s-1980s, average female pay was around two-thirds that of men (*Klesment* 2013). In the market system and in recent years, this gap has decreased in Estonia (*Klesment* 2019; *Orazem/Vodopivec* 2000), as has been the norm in other post-socialist societies (*Brainerd* 2000).

High female employment rates were supported by large investments in public childcare institutions. In Estonia, the childcare enrolment rates of young children in childcare were high, at least from the 1970s onwards. The childcare enrolment rates of Estonian 1-6-year-olds from 1980 onwards are shown in Figure 2. Childcare enrolment rates started to decline in the late 1980s, reaching their lowest level in the early 1990s. From the late 1990s onwards, childcare enrolment rates have again increased gradually. It is important to note that there were no major cutbacks in the provision and use of public childcare in Estonia from the 1990s, as there were in a number of other former socialist states (*Frejka/Gietel-Basten* 2016). Or, to put it differently, there was no relevant drive to make Estonian families more "traditional" in following the breadwinner-housewife model in the post-socialist years. High

Fig. 1: Employment rates for men and women aged 25-49 in Estonia, 1989-2022



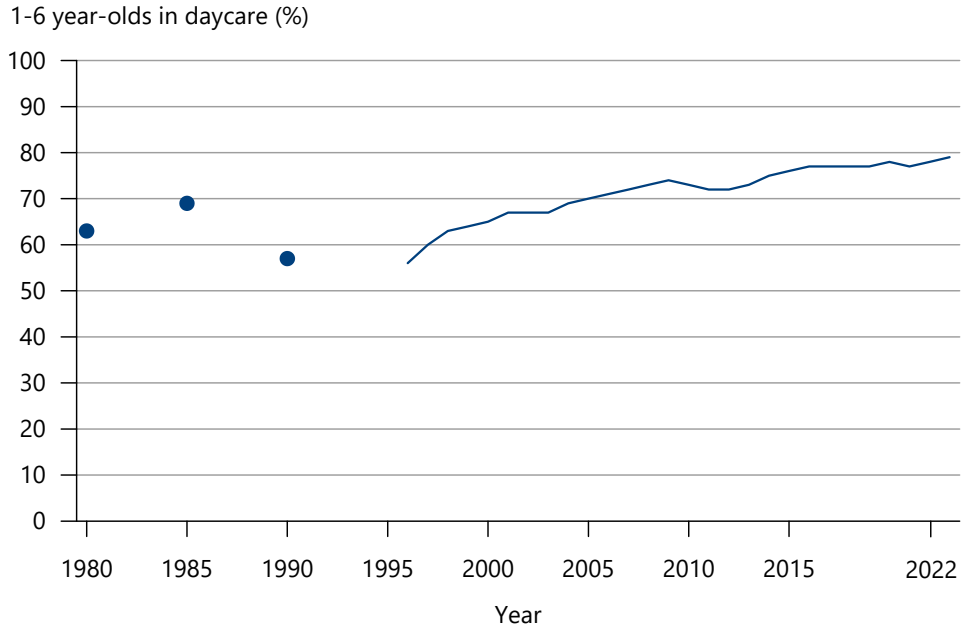
Source: Labour Force Survey, Statistics Estonia database, table TT330

female employment and the requisite supporting childcare institutions remained the norm.

However, despite the stated Soviet ideological goal of equality between the sexes (*Schuster* 1971), high female employment was not accompanied by an equal division of labour when it came to household tasks. This can be seen in time-use surveys from the late Soviet period in Estonia (*Aedna/Romppanen* 1993): In the 1980s, working women spent about two hours less in paid work per week than working men did. However, women spent five hours more doing domestic work, partly due to a lack of modern domestic appliances that were widespread in Western countries. Another 2-3 hours were spent shopping – a very time-consuming activity in Socialist societies struggling in the provision of even the most basic products. On the whole, women spent 6-7 hours more than men doing unpaid work and domestic tasks during the workweek. The gap increases to more than 20 hours when taking into account domestic tasks completed during the weekend. This means that, compared to women in Western Europe (*United Nations* 1991), Estonian women in the 1980s performed about 20-30 hours more paid and unpaid work in a week in total, although this is only a rough estimate due to different methodologies.

The transition to a market economy also changed women's work. First, the total weekly workload of Estonian women (paid and unpaid) decreased significantly, and by 1999/2000 "only" exceeded western European women by 6-7 hours (*Eurostat*

Fig. 2: Childcare enrolment rates for 1-6-year-olds in Estonia, 1980-2022



Source: administrative data, Statistics Estonia database, table HT01

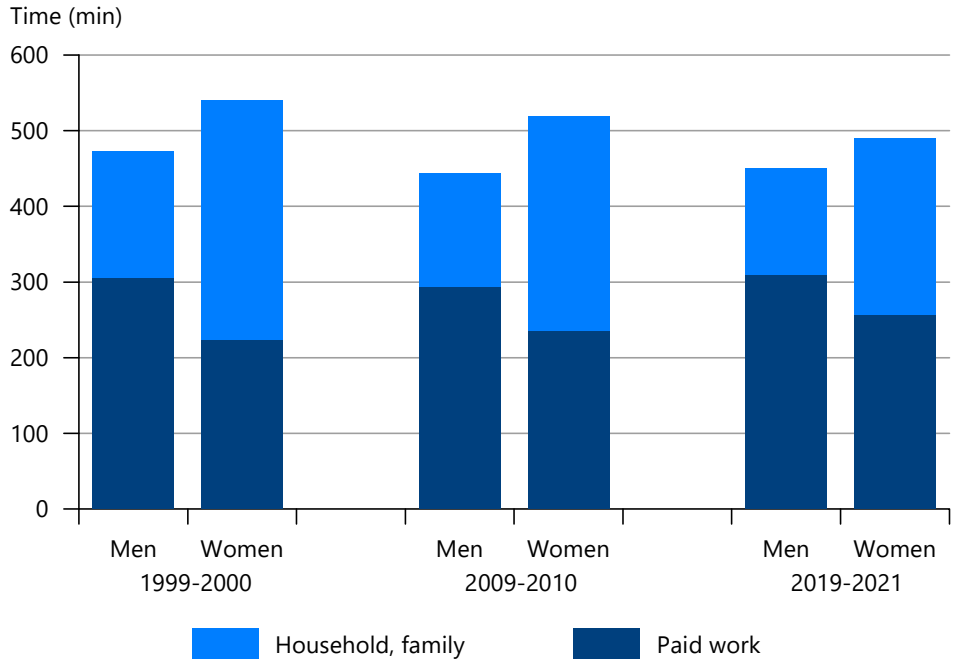
2005). Second, Estonian women's excess work hours relative to Estonian men have also declined. This is shown in Figure 3, which compares minutes spent on paid and unpaid domestic work for 25-44-year-olds, as recorded by time-use surveys using the standard international methods.

Due to differences in methodology, a precise comparison to the late Soviet era cannot be made, but the sex gap has undoubtedly shrunk since the 1980s. Still, gaps do remain, and in the 1999-2000 and 2009-2010 time use surveys, these gaps constituted more than an hour of extra time in a day.

4 Hypotheses

Based on Gender Revolution Theory, previous findings, and contextual information, we investigate the relationship between the division of labour between partners and expressed fertility intentions at the time of survey as well as realised childbirth in the years following the survey. We primarily examine full-time working women differentiated by their share of the burden in domestic duties. If women who are employed full-time also take care of most of the household tasks, this produces stress and exhaustion, inhibiting subsequent intended and realised childbearing. We test the following hypotheses.

Fig. 3: Daily time spent on paid and unpaid work for men and women aged 25-44, Estonia, 1999-2021



Source: Time use surveys, Statistics Estonia database, table AK022

Hypothesis 1 (H1) proposes that couples in which the woman works in a full position and performs most of the domestic duties will have a lower intention of having another child than couples in which the division of housework is equally divided. Hypothesis 2 (H2) proposes the same with respect to having another child in the years following the survey.

In the analysis, we separately cover progressions to the first, second, and third or higher parity, assuming there will be differences based on the number of existing children. Hypothesis 3 (H3) articulates that a GRT-expected relationship (egalitarian couples having higher fertility intentions) would be the strongest with respect to intending to have a second child due to the clear increase in domestic duties following the arrival of the first child. Hypothesis 4 (H4) proposes the same for the actual birth of a second child.

5 Data, variables, and method

5.1 Data

We use two comprehensive, nationally representative surveys. The Estonian Fertility and Family Survey (FFS) was conducted in 1994 for women and 1997 for men (*Katus et al.* 1999, 1995). The Estonian Gender and Generations Survey (GGS) was carried out in 2004-05 (*Katus et al.* 2009). The samples were based on the previous census records and created with simple random sampling. The response rates were 85 percent for the female FFS, 81 percent for the male FFS, and 70 percent for the GGS. The main reason for merging data from both surveys as well as both sexes is to increase sample size. We use responses given by both sexes.

Altogether, the two surveys include data from 15,387 respondents. We successfully linked their data to the Estonian population register based on names and birth dates for 15,201 respondents. Those not linked are primarily short-term immigrants who had no demographic events recorded in the register while they lived in Estonia. For this study, we limited the sample as follows. First, we included partnered respondents in couples in which the woman is aged 18-43, not currently pregnant, and not having problems with conception. This was done based on a question concerning contraception, since the explicit question on the ability to have children was asked only with respect to the respondent and not their partner.

For couples with children, only those with children from the current partnership are included. Additionally, we only use observations for which the number and main demographic characteristics (sex, year, and month of birth) of the children are identical in the survey and population register. Finally, we require the respondents to survive for the five years following the survey. We cannot apply the same condition for the partners of the respondents, since we do not have their surnames, and thus cannot link them to the register. This procedure gave us a sample of 3,352 couples. We divided this into three subsamples based on the number of children at the time of the interview, since the main analysis is based on parity progression. In doing so, we exclude further couples, mostly due to the requirement that for couples with children, the youngest child at the time of the interview must be below the age of 11. This gives us the final analytical sample of 2,594 couples, of whom 497 are childless, 841 have one child, and 1,256 have 2-6 children at the time of the interview.

5.2 Variables

Table 1 shows basic distributions for the variables used in the main analysis. The study uses two *dependent variables* – one concerning fertility intentions, and the other on fertility behaviour. The existing literature mostly analyses one or the other. We analyse both aspects separately, so this is not a study of fertility realisation. Theoretically, we expect that being burdened directly affects fertility intentions (as opposed to ideals) and behaviour, but not the realisation of intentions.

First, both surveys asked whether the respondent wanted to have a (next) child – no time limit was attached to this question in the Estonian versions of FFS and

GGS. People could answer as follows: yes, definitely; yes, probably; no, probably; no, definitely. Unsurprisingly, Table 1 indicates that fertility intentions are highly dependent on the present number of children, with almost all childless respondents wanting to have a child, whereas only a minority of those with two or more children intend to have another birth.

Second, we study actual childbearing with the linked data from the population register. To be more precise, the behavioural dependent variable is a binary variable indicating if the survey respondent had a(nother) child in the five years (60 months) following the interview. Table 1 shows that half of the childless respondents had a birth in this timeframe, as did a third of one-child respondents, and one tenth of those with two or more children.

We faced a trade-off regarding the time limit for the behavioural variable. On the one hand, having a shorter observation period after the survey assures a greater accuracy of the main independent variable of interest (i.e., paid and unpaid working hours), since this may change over time, and indeed the partnership itself may end; and with the Estonian population register, we cannot reliably capture unregistered cohabitation. On the other hand, a longer observation period gives us more births to observe, along with greater confidence that differences in fertility timing do not influence our conclusions, which aim to be about fertility quantum. Indeed, we also tested a three-year limit similar to *Dommermuth et al.* (2017); however, for couples in which the man performs most household tasks, we did not have any first births in this interval and the models became instable. On the whole, however, the conclusions drawn are the same as with the five-year limit.

The *main variable of interest* is a combination of two variables. The main questionnaires for both surveys only include a measure of the overall household work division. The question simply asks whether the main burden of housework is borne by the respondent, their partner, or both equally, which we then recoded based on sex. The main variable of interest thus distinguishes couples in which the woman does more housework, the man does more housework, and couples where housework is shared equally. There is no separate question for childcare, and we assume that most respondents also consider activities involving children to be household tasks. The Estonian GGS also had an extra drop-off questionnaire which included a number of questions on specific housework and childcare tasks, but given that this more detailed information is available only for one survey used in this study, it is only used for supplementary analyses.

The main variable of interest interacts the overall housework division with the woman's weekly hours spent in paid work, which we have categorised as 0-34 and 35+ hours – the latter being considered as full-time employment. Hence, we have six categories for our main variable of interest. With respect to the theoretical expectations of GRT, we are mostly concerned with comparing women who do most of the housework and work full-time, i.e., those with an elevated workload, with women who work full-time, but have an equal division of housework. Some empirical work has emphasised the need to distinguish women based on the hours of work (*Miettinen et al.* 2015; *Mills et al.* 2008).

Tab. 1: Distribution of the variables used in the models by parity, couples with a woman aged 18-43

Variable	0→1	1→2	2+→3+
Intention to have a (next) child			
Yes, definitely	86,3	47,8	8,4
Yes, probably	6,8	29,1	21,1
No, probably	1,6	9,0	20,0
No, definitely	5,2	14,0	50,6
A(nother) child in 5 years			
Yes	49,7	35,0	9,9
No	50,3	65,0	90,1
Housework division × woman's work hours			
Woman more and 35+ hours	28,4	24,3	29,4
Woman more and 0-34 hours	14,5	33,3	29,9
Equally divided and 35+ hours	38,6	21,6	23,8
Equally divided and 0-34 hours	13,3	16,6	13,7
Man more and 35+ hours	3,4	2,4	2,2
Man more and 0-34 hours	1,8	1,8	1,0
Sex of the respondent			
Female	59,2	62,0	65,0
Male	40,8	38,0	35,0
Survey			
FFS	32,4	55,8	61,6
GGS	67,6	44,2	38,4
Age of the woman			
18-24	43,9	29,9	5,4
25-29	29,8	37,1	22,2
30-34	13,5	23,8	37,6
35-43	12,9	9,2	34,8
Type of partnership			
Marriage	30,4	66,9	87,8
Cohabitation	69,6	33,1	12,2
Man works full-time			
Yes	84,7	86,2	90,0
No	15,3	13,8	10,0
Age of the previous child			
0		16,6	7,8
1-2		27,3	21,2
3-6		34,4	39,6
7-10		21,6	31,4
Sex composition of children			
Male(s)		48,9	24,1
Female(s)		51,1	18,9
Both sexes			57,0

Tab. 1: Continuation

Variable	0→1	1→2	2+→3+
Number of children			
2			73,8
3			20,4
4+			5,8
N (couples)	497	841	1256

Source: Estonian FFS and GGS, authors' calculations

Table 1 shows that approximately one quarter of couples across the three parity progressions under study can be described as placing a "double burden" on the shoulders of women. When it comes to childless couples, more than one third of women work full-time and enjoy an egalitarian housework division; in couples with at least one child, this share is around one fifth, and among couples with two or more children, it is almost one quarter.

We use several control variables in our models. Given that we use responses of both men and women, we control for sex of the respondent. Both surveys had a greater number of women than men in their gross samples; thus, approximately two thirds of couples under analysis are based on answers provided by women. The control for sex is also relevant given that men and women may differ in their understanding of what the housework division is. Indeed, we do see a greater share of women than men in our analytical sample reporting women doing more housework. For childless couples, 43.9 percent of women and 41.4 percent of men judged the woman to be doing most of the housework. For couples with one child, these percentages were 59.9 and 53.8, and for couples with two or more children, it was 62.1 and 54.4. Similarly, a binary control for survey (FFS or GGS) is included. For childless couples, the share of GGS respondents is higher, and for couples with children, the share of GGS respondents is lower. This difference can be mostly explained by a pronounced fertility postponement that started in Estonia in the early 1990s (*Klesment* 2010: 26-29).

To model the subsequent childbearing of parents, we include variables on the age and sex (composition) of the previous child or children. For the parity progression from the second or higher birth to third or higher birth, the number of children at the time of the interview is added as a control variable. We also include a variable that controls for whether the couple was married or cohabiting at the time of the interview, whether the man works full-time, and the age of the youngest child. The age of the woman is also controlled for.

We have refrained from using additional controls. First, we do not want to overburden the models given the limited numbers of observations. Second, we do not want to control for variables that are also correlated with the main variable of interest; in other words, we do not want to overcontrol. However, in Appendix 2, we

present models with additional variables for the woman's educational attainment, the man's educational attainment, and the woman's ethnicity.

5.3 Method

We structure the main models by parity following a common practice in the literature (e.g., *Neyer et al.* 2013; *Dommermuth et al.* 2017). As mentioned, we model both the fertility intentions (without a time limit) as well as actual fertility behaviour during the five years after the survey. For fertility intentions, the dependent variable has four categories with a clear order, meaning that we can use ordinal regression to study childbearing intentions, as it allows more information to be taken into account compared to dichotomising the dependent variable and using binary logistic regression. The assumption of ordinal regression is that the odds ratios derived from the model are the same across all categories of the dependent variable. For actual childbearing, we use standard logistic regression, given that the outcome is binary. For both sets of models, the results are given as odds ratios.

In addition to the main analysis, we have fitted additional models, some of which are presented in the section on sensitivity checks and in online appendices.

6 Results

6.1 Childbearing intentions

We first look at the modelling results for intentions to have a(nother) child at the time of the interview (Table 2). The estimates are presented as odds ratios with values greater than one indicating higher, and values less than one lower intention to have a child compared to the reference group. Thus, we interpret an odds ratio of, for example, 1.2 as a particular group having 1.2 times greater odds of indicating a definite rather than a probable intention, or a probable lack of intention, or a definite lack of intention to have a(nother) child.

Looking at the main variable of interest, almost no statistically significant group differences can be detected for any of the three subsamples. Only for couples with two or more children we can see a lower odds ratio of intending to have another child for couples in which the woman works less than full-time (0-34 hours), but does perform most of the housework, which goes against the expectations drawn from GRT.

For the parity progression 1→2, we can see a result that takes the expected direction but is not statistically significant (p=0.168), which, given the relatively small number of observations, can also be, admittedly with caution, taken as meaningful. Namely, for couples in which the woman is employed full-time and housework is shared equally, we can see an odds ratio consistent with the prediction of GRT, i.e., an egalitarian housework division increasing childbearing intentions for couples with women employed full-time. However, the effect size itself is rather small.

Tab. 2: Results of ordinal regression for fertility intention by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division × woman's work hours						
Woman more and 35+ hours	1		1		1	
Woman more and 0-34 hours	0.738	0.517	1.110	0.599	0.750	0.072
Equally divided and 35+ hours	0.898	0.770	1.313	0.168	1.132	0.417
Equally divided and 0-34 hours	1.086	0.881	1.064	0.794	1.014	0.944
Man more and 35+ hours	1.290	0.816	0.909	0.826	0.613	0.276
Man more and 0-34 hours	0.931	0.960	1.084	0.881	0.889	0.821
Sex of the respondent						
Male	1		1		1	
Female	1.075	0.815	0.749	0.045	0.649	0.000
Survey						
FFS	1		1		1	
GGS	1.684	0.105	1.562	0.003	1.601	0.000
Age of the woman						
18-24	1		1		1	
25-29	0.221	0.003	0.567	0.001	0.329	0.000
30-34	0.197	0.005	0.332	0.000	0.194	0.000
35-43	0.015	0.000	0.077	0.000	0.074	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	1.040	0.907	1.431	0.025	0.852	0.358
Man works full-time						
No	1		1		1	
Yes	1.429	0.382	1.595	0.019	1.805	0.004
Age of the previous child						
0			1		1	
1-2			1.177	0.481	0.846	0.462
3-6			0.503	0.004	0.744	0.209
7-10			0.365	0.000	0.543	0.019
Sex composition of children						
Male(s)			1		1.204	0.178
Female(s)			1.106	0.459	1.459	0.009
Both					1	
Number of children						
2					1	
3					0.918	0.582
4+					0.799	0.400
Nagelkerke Pseudo R^2	0.336		0.265		0.190	
N (couples)	497		841		1256	

Source: Estonian FFS and GGS, authors' calculations

To summarise the main results in Table 2, the estimated differences in fertility intentions between the less equitable couples (the woman does most of the housework in addition to working full-time) and the equitable couples (housework is shared equally and the woman works full-time) do not confirm the theoretical expectations based on the GRT. We find no evidence to support either Hypotheses 1 or 3.

The results for the control variables are mostly in line with previous studies (*Puur et al.* 2019). Fertility intentions decline with the age of the woman. Notably, being married is associated with higher intentions only for couples with one child at the time of the interview. This underscores the normalisation of cohabitation towards the end of the 20th century, which had already occurred by the time of the two surveys (*Puur et al.* 2012). Additionally, for higher-order parity progressions, not having boys increases subsequent childbearing intentions; this observation is less clear among couples who do not have girls. Surprisingly, women's birth intentions are lower than men's if the couple already has children. GGS respondents who were parents at the time of the survey have higher intentions of having an additional birth than FFS respondents did – this can possibly be explained by the socio-economic improvements from the mid-1990s to mid-2000s in Estonia.

6.2 Actual childbearing

Table 3 presents the results of logistic regression models for actual fertility behaviour in the five-year period following both surveys. Odds ratios greater than one indicate a higher propensity for having a(nother) child, while odds ratios less than one indicate a lower propensity.

The estimated odds ratios for the difference between women who do more housework than their partners while working full-time and their counterparts who have egalitarian housework divisions consistently show no statistically significant difference in childbearing propensity. This also applies to one-child families. Hence, we do not find support for Hypotheses 2 and 4.

Additionally, among couples with children, those in which the woman is less burdened due to taking on less responsibility for housework and/or working less than full-time do not show a higher propensity for childbearing than the reference group does. For the progression from parity zero to one, we see that among couples in which the man performs more housework, the propensity for transition to parenthood is lower than for the reference group, regardless of the work hours of the woman. However, such couples, as Table 1 shows, make up only 5 percent of the observations.

We find some significant group differences for the estimates of control variables. Respondents' sex appears as a strong predictor of the progression to first birth. GGS respondents show higher parity progression across all three models, which can be explained by the increased fertility rates in the late 2000s due to improving socio-economic conditions and the introduction of a generous parental leave system in 2004 (*Puur et al.* 2023). The woman's age is negatively associated with the propensity to have a(nother) child. The type of partnership is irrelevant with respect to further

Tab. 3: Results of logistic regression for childbearing by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division × woman's work hours						
Woman more and 35+ hours	1		1		1	
Woman more and 0-34 hours	0.906	0.757	0.968	0.886	1.080	0.786
Equally divided and 35+ hours	1.135	0.605	1.168	0.497	0.803	0.476
Equally divided and 0-34 hours	0.697	0.284	1.247	0.404	1.064	0.855
Man more and 35+ hours	0.275	0.024	0.887	0.832	1.040	0.960
Man more and 0-34 hours	0.089	0.029	1.019	0.975	1.231	0.803
Sex of the respondent						
Male	1		1		1	
Female	1.873	0.002	0.932	0.654	0.983	0.937
Survey						
FFS	1		1		1	
GGS	1.639	0.025	1.863	0.000	1.863	0.003
Age of the woman						
18-24	1		1		1	
25-29	0.557	0.011	1.089	0.657	0.558	0.089
30-34	0.550	0.054	0.869	0.557	0.256	0.000
35-43	0.058	0.000	0.220	0.000	0.067	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	0.814	0.379	0.853	0.354	0.938	0.822
Man works full-time						
No	1		1		1	
Yes	0.949	0.855	1.442	0.113	1.118	0.740
Age of the previous child						
0			1		1	
1-2			1.276	0.286	1.318	0.434
3-6			0.936	0.794	1.426	0.350
7-10			0.476	0.020	1.290	0.570
Sex composition of children						
Male(s)			1		0.942	0.814
Female(s)			0.884	0.416	1.164	0.554
Both					1	
Number of children						
2					1	
3					0.838	0.582
4+					3.886	0.000
Nagelkerke Pseudo R^2	0.215		0.110		0.135	
N (couples)	497		841		1256	

Source: Estonian FFS and GGS, authors' calculations

childbearing. This finding is in line with the early acceptance of cohabitation in Estonia. The age of the previous child and the sex composition of children already born do not show significant associations with having an additional birth. For the progression to higher-order births, those with 4+ children at the time of interview have a much higher propensity for having another child than those with only two children. This is unsurprising given that parity progression ratios tend to increase at higher parities (*Andersson* 2008).

6.3 Sensitivity analysis

To probe the robustness of our results, we conducted a number of sensitivity analyses which can be found in the appendices and are summarised here.

First, in Appendix 1, we used a different way to study the association between housework division and childbearing. We used the housework division as the main variable of interest, with women's employment status added as a separate control. For intentions at higher parities, we find that respondents in couples who share an equal housework division have slightly higher intentions, though this is only marginally statistically significant (p=0.083). For actual childbearing, the same is true for the progression from first to second birth. As with the main models, the propensity of transition to parenthood is significantly lower for childless couples in which the man performs more household tasks.

Second, Appendix 2 shows the results for models that are estimated for all parities combined. This is done for two reasons. First, parity-specific models may be constrained by the small number of couples under analysis and may thus hide statistically significant effects. Second, such modelling would give us a more general picture of the relationship between the division of paid and unpaid labour in the family and fertility. The results given in Appendix 2, however, are in line with the main models, and do not show the group differences we would expect based on GRT.

Third, Appendix 3 includes models using larger analytical samples in order to ease issues with statistical power. We have done this by easing the restriction criteria compared to the main models, as well as other supplemental analyses. The only noteworthy change occurs for the intentions model 1→2. In the main model, full-time working women with an equal housework division showed a very marginally statistically significant result (OR 1.313, p = 0.168). Table A4 shows that with a larger analytical sample, the result is more pronounced (OR 1.666, p = 0.005).

Fourth, fertility intentions are of course relevant for actual childbearing behaviour. Hence, Appendix 4 shows the results of logistic regression models for childbearing during the five years after the interview, with an additional binary control variable applied to indicate whether the respondent indicated an intention to have a(nother) child. These extra models do not change the conclusions drawn from the main results.

Fifth, we took a more detailed view of both housework and childcare division based on the GGS material and follow the approach used by *Dommermuth, Hohmann-Marriott,* and *Lappegård*, (2017). Appendix 5 shows no statistically

significant support for the GRT expectation. However, this is a high bar, given the very small number of observations. For childbearing intentions, we do see hints that couples with two or more children and with a smaller female housework share have elevated intentions for having an additional child. For actual childbearing, the results would point out that childless couples with a higher share of housework done by the woman as well as couples with one child and a higher share of childcare done by the woman have higher propensities to have a(nother) birth. For childless couples, the result is statistically significant.

7 Conclusion and discussion

This study has analysed the division of unpaid labour in the family as a factor for fertility intentions and childbearing in Estonia. Based on Gender Revolution Theory (GRT), equality in the division of housework and childcare is expected to be linked with higher fertility, resulting from gender equality in both the domestic and public spheres. Estonian society is characterised by the early emergence of high female employment, which was both an important ideological goal and a reality during the period of state socialism. However, when it comes to participation in housework and childcare, men did not reciprocate and thus, as captured by time use surveys, women had to spend significantly more time doing unpaid work than men did. Although men's hours in paid employment were somewhat longer, women's total working hours (paid and unpaid) were far higher. Hence, the Estonian situation under state socialism is comparable with the first stage of the gender revolution in the GRT framework.

Our study period begins after the end of state socialism, using two comprehensive family and fertility surveys conducted in the 1990s and 2000s. We analyse the association between the division of household chores with both fertility intentions as well as fertility behaviour in the years following the surveys. The article's conclusions are clear: in the main results and in the additional analyses, we do not find a positive association between the degree of division of domestic labour and fertility. That is, the results suggest that fertility intentions and outcomes are not higher among those who report more gender equal divisions of domestic duties, unlike what we would have expected based on the GRT framework. Comparing full-time employed women who have an equal division of labour at home with those who do more housework than their male partners, we find no sizeable or statistically significant differences, regardless of parity and fertility measure. We also ran supplementary models that support these conclusions, with one exception for intending to have a second child (Appendix 3).

This study has limitations. First, the measure of the division of household tasks used in the main models is rather crude. Ideally, the more detailed questions on housework and childcare tasks of the GGS would have been used in the main analysis, but we were constrained by sample size. As discussed in the section on sensitivity analyses, using this more detailed information on housework and childcare did not produce different results (Appendix 5). Second, the division of housework is

only captured at the time of the interview. However, it may change over time, as might some control variables. For the analysis of actual childbearing following the interview, this presents a potential issue. Moreover, some couples separated in the five years after the survey, which we are also unable to take into account. Third, the data on housework division is only drawn from one partner – the other's perception, as well as the "true" division, may be different. However, we have controlled for the sex of the respondent, which likely affects these perceptions. Fourth, it can be argued that it is not the division itself that is important for fertility, but satisfaction with the division (*Neyer et al.* 2013; *Köppen/Trappe* 2019). We have not touched on this question because such information is not available in our data.

Our results raise the question of whether we can expect GRT-specific associations between housework division and fertility to function in the context of state socialism and its immediate aftermath. GRT is based on the experiences of Western, capitalist countries, and thus emphasises the aspirations of women, their subjective wellbeing, and alternative costs. Under state socialism, the expansion of female labour market participation was driven by top-down policies. Likewise, the transition to a market economy – our study period – was difficult, and thus female employment could be interpreted as being more about "survival" than "self-expression," to use the terms by *Inglehart* and *Welzel* (2024). Indeed, the results of values surveys have shown Estonia in the 1990s and 2000s to have been dominated by survival values, which is associated with more difficult material circumstances and an uncertain socio-political climate (*Ainsaar/Strenze* 2019; *Inglehart* 2018). The family surveys analysed here show that people in Estonia did have survival/materialist reasons for childbearing, with half of respondents noting that receiving support at an old age is an important reason for having children (*Gortfelder/Rahnu* 2020). The existence of such views may weaken the effects of greater workloads as proposed by GRT. In other words, economic hardship and the dominance of survival values may counteract the mechanisms of stress and opportunity costs. The other article that focuses on Eastern Europe on this topic (*Fanelli/Profeta* 2021) did find a limited, statistically significant effect with respect to having a second child. It used data gathered from 2004-2011, which might be a reason for this result. This would mean that economic progress and changes in values in more recent data make the finding that greater female workloads do inhibit childbearing more likely.

However, we note again that the empirical support for GRT expectations with micro-level data is weak in Estonia, and previous literature has focused on a variety of contexts (*Neyer et al.* 2013). Additionally, at the macro level, the proposed association is not clearly visible (*Kolk* 2019). Even if some micro-level analyses have found statistically significant and theoretically expected results, the effect sizes are limited. In this sense, our findings do not diverge from the existing literature.

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Appendix 1: Housework division specified as main effects

The main variable of interest was constructed in the main analysis as an interaction between house-work division and the woman's work hours. In Appendix 1, we use housework division as the main variable of interest, and the woman's employment status as a control. The modelling is done separate-ly for fertility intentions and behaviour.

Tab. A1: Results of ordinal regressions for fertility intention by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division						
Woman more	1		1		1	
Equally divided	1.027	0.931	1.134	0.381	1.223	0.083
Man more	1.279	0.775	0.925	0.817	0.807	0.526
Woman works full time						
No	1		1		1	1
Yes	1.095	0.792	1.009	0.955	1.221	0.125
Sex of the respondent						
Male	1		1		1	
Female	1.103	0.749	0.749	0.045	0.649	0.000
Survey						
FFS	1		1		1	
GGS	1.685	0.105	1.580	0.002	1.592	0.000
Age of the woman						
18-24	1		1		1	
25-29	0.217	0.002	0.571	0.003	0.330	0.000
30-34	0.195	0.005	0.336	0.000	0.195	0.000
35-43	0.015	0.000	0.076	0.000	0.074	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	1.041	0.903	1.425	0.027	0.853	0.359
Man works full-time						
No	1		1		1	
Yes	1.399	0.410	1.635	0.012	1.795	0.004
Age of the previous child						
0			1		1	
1-2			1.196	0.437	0.838	0.435
3-6			0.508	0.005	0.746	0.211
7-10			0.371	0.000	0.541	0.018
Sex composition of children						
Male(s)			1		1.207	0.171
Female(s)			1.100	0.484	1.467	0.008
Both					1	
Number of children						
2					1	
3					0.917	0.576
4+					0.807	0.421
Nagelkerke Pseudo R^2	0.334		0.263		0.189	
N (couples)	497		841		1256	

Source: Estonian FFS and GGS, authors' calculations

Tab. A2: Results of logistic regressions for childbearing by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division						
Woman more	1		1		1	
Equally divided	1.006	0.978	1.229	0.199	0.895	0.599
Man more	0.210	0.002	0.965	0.929	1.098	0.869
Woman works full time						
No	1		1		1	
Yes	1.379	0.155	0.987	0.943	1.108	0.759
Sex of the respondent						
Male	1		1		1	
Female	1.876	0.002	0.931	0.652	0.988	0.956
Survey						
FFS	1		1		1	
GGS	1.613	0.029	1.857	0.000	1.856	0.004
Age of the woman						
18-24	1		1		1	
25-29	0.568	0.014	1.085	0.669	0.557	0.087
30-34	0.555	0.058	0.868	0.551	0.257	0.000
35-43	0.057	0.000	0.220	0.000	0.067	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	0.812	0.373	0.854	0.357	0.939	0.824
Man works full-time						
No	1		1		1	
Yes	0.968	0.908	1.436	0.115	1.108	0.759
Age of the previous child						
0			1		1	
1-2			1.272	0.292	1.299	0.457
3-6			0.936	0.797	1.415	0.358
7-10			0.475	0.020	1.277	0.584
Sex composition of children						
Male(s)			1		0.945	0.823
Female(s)			0.885	0.422	1.174	0.532
Both					1	
Number of children						
2					1	
3					0.844	0.598
4+					3.926	0.000
Nagelkerke Pseudo R^2	0.214		0.110		0.135	
N (couples)	497		841		1256	

Source: Estonian FFS and GGS, authors' calculations

Appendix 2: Models for all parities combined

Appendix 2 shows the results of models for all parities combined. These additional models aim to overcome the limitations of parity-specific models caused by the small number of respondents.

Tab. A3: Results of ordinal regression for fertility intention and logistic regression for childbearing, couples with a woman aged 18-43

Variable	Intention		Childbearing	
	OR	p	OR	p
Housework division × woman's work hours				
Woman more and 35+ hours	1		1	
Woman more and 0-34 hours	1.009	0.938	1.033	0.819
Equally divided and 35+ hours	1.181	0.144	1.101	0.496
Equally divided and 0-34 hours	1.213	0.150	1.095	0.585
Man more and 35+ hours	0.815	0.469	0.541	0.096
Man more and 0-34 hours	1.064	0.860	0.575	0.216
Sex of the respondent				
Male	1		1	
Female	0.738	0.000	1.167	0.145
Survey				
FFS	1		1	
GGS	1.722	0.000	1.812	0.000
Age of the woman				
18-24	1		1	
25-29	0.353	0.000	0.805	0.091
30-34	0.182	0.000	0.493	0.000
35-43	0.051	0.000	0.104	0.000
Type of partnership				
Marriage	1		1	
Cohabitation	1.218	0.063	0.906	0.414
Man works full-time				
No	1		1	
Yes	1.718	0.000	1.184	0.274
Number of existing children				
0	1		1	
1	0.152	0.000	0.585	0.000
2	0.037	0.000	0.175	0.000
3	0.037	0.000	0.137	0.000
4+	0.031	0.000	0.619	0.172
Nagelkerke Pseudo R^2	0.528		0.284	
N (couples)	2594		2594	

Source: Estonian FFS and GGS, authors' calculations

Appendix 3: Models with a larger number of observations

The main modelling was done with the restrictions discussed in Section 4.1. Given that our analytical samples are quite small, we relaxed some of the restrictions in order to be able to use more observations. More precisely, we removed the following restrictions for intentions: (1) successful link to register data, (2) number of children for the respondent equals 0-6, (3) all existing children were raised with the present partner, (4) all children are alive at the time of the interview, (5) the information on children is the same in the survey and register, and (6) the respondent did not die in the five years following the interview. For childbearing after the survey, we have to use (1) successful link to register data and (6) the respondent did not die in the five years following the interview. Table A4 shows the results on childbearing intentions, Table A5 the results on actual childbearing after the survey. The last line gives the number of cases in the models, which can be compared to the tables for the main models. We note that the analytical samples and thus the results are identical to the main model for 0→1 fertility behaviour.

Tab. A4: Results of ordinal regressions for fertility intention by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division × woman's work hours						
Woman more and 35+ hours	1		1		1	
Woman more and 0-34 hours	0.678	0.383	1.070	0.704	0.798	0.085
Equally divided and 35+ hours	0.792	0.506	1.666	0.005	1.175	0.204
Equally divided and 0-34 hours	0.877	0.795	1.069	0.757	1.217	0.209
Man more and 35+ hours	1.619	0.660	0.802	0.556	0.769	0.480
Man more and 0-34 hours	0.921	0.954	1.215	0.699	1.584	0.283
Sex of the respondent						
Male	1		1		1	
Female	0.912	0.767	0.793	0.074	0.690	0.000
Survey						
FFS	1		1		1	
GGS	1.527	0.156	1.549	0.001	1.543	0.000
Age of the woman						
18-24	1		1		1	
25-29	0.240	0.002	0.613	0.004	0.363	0.000
30-34	0.194	0.003	0.343	0.000	0.216	0.000
35-43	0.017	0.000	0.081	0.000	0.083	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	1.025	0.936	1.544	0.001	1.309	0.018
Man works full-time						
No	1		1		1	
Yes	1.716	0.150	1.648	0.005	1.482	0.009
Age of the previous child						
0			1		1	
1-2			1.196	0.412	1.102	0.592
3-6			0.530	0.006	1.021	0.910
7-10			0.348	0.000	0.788	0.240
Sex composition of children						
Male(s)			1		1.163	0.199
Female(s)			1.130	0.322	1.563	0.000
Both					1	
Number of children						
2					1	
3					0.878	0.272
4+					0.592	0.003
Nagelkerke Pseudo R^2	0.329		0.241		0.162	
N (couples)	535		1035		1875	

Source: Estonian FFS and GGS, authors' calculations

Tab. A5: Results of logistic regressions for childbearing by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division × woman's work hours						
Woman more and 35+ hours	1		1		1	
Woman more and 0-34 hours	0.906	0.757	0.912	0.662	1.121	0.617
Equally divided and 35+ hours	1.135	0.605	1.290	0.225	0.909	0.694
Equally divided and 0-34 hours	0.697	0.284	1.123	0.640	1.111	0.697
Man more and 35+ hours	0.275	0.024	1.014	0.977	1.056	0.933
Man more and 0-34 hours	0.089	0.029	0.914	0.879	1.878	0.871
Sex of the respondent						
Male	1		1		1	
Female	1.873	0.002	0.921	0.583	0.972	0.869
Survey						
FFS	1		1		1	
GGS	1.639	0.025	1.918	0.000	2.222	0.000
Age of the woman						
18-24	1		1		1	
25-29	0.557	0.011	1.086	0.644	0.676	0.196
30-34	0.550	0.054	0.780	0.264	0.348	0.001
35-43	0.058	0.000	0.188	0.000	0.103	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	0.814	0.379	0.861	0.333	1.322	0.134
Man works full-time						
No	1		1		1	
Yes	0.949	0.855	1.372	0.141	1.058	0.822
Age of the previous child						
0			1		1	
1-2			1.378	0.146	1.444	0.205
3-6			0.972	0.905	1.796	0.052
7-10			0.606	0.079	1.394	0.349
Sex composition of children						
Male(s)			1		0.856	0.469
Female(s)			0.905	0.487	1.259	0.270
Both					1	
Number of children						
2					1	
3					1.024	0.915
4+					2.306	0.003
Nagelkerke Pseudo R^2	0.215		0.106		0.128	
N (couples)	497		959		1721	

Source: Estonian FFS and GGS, authors' calculations

Appendix 4: Models for childbearing with an additional control for birth intention

Table A6 shows the results of the models on actual childbearing by adding a binary control variable on birth intentions to the main models. This binary variable is produced based on the birth intention question that was used as the dependent variable in the models for fertility intentions. To construct a binary variable, we grouped the answers for definitely and probably wanting or not wanting to have a(nother) birth.

Tab. A6: Results of logistic regressions for childbearing by parity, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Housework division × woman's work hours						
Woman more and 35+ hours	1		1		1	
Woman more and 0-34 hours	0.909	0.765	0.968	0.888	1.121	0.696
Equally divided and 35+ hours	1.126	0.628	1.114	0.644	0.793	0.460
Equally divided and 0-34 hours	0.689	0.269	1.229	0.443	1.008	0.981
Man more and 35+ hours	0.271	0.023	0.799	0.697	1.133	0.875
Man more and 0-34 hours	0.095	0.034	0.912	0.879	1.391	0.709
Sex of the respondent						
Male	1		1		1	
Female	1.877	0.002	0.960	0.800	1.138	0.557
Survey						
FFS	1		1		1	
GGS	1.614	0.031	1.747	0.001	1.633	0.024
Age of the woman						
18-24	1		1		1	
25-29	0.571	0.016	1.154	0.459	0.726	0.366
30-34	0.550	0.054	0.996	0.988	0.380	0.013
35-43	0.081	0.000	0.382	0.028	0.129	0.000
Type of partnership						
Marriage	1		1		1	
Cohabitation	0.819	0.394	0.816	0.241	1.006	0.983
Man works full-time						
No	1		1		1	
Yes	0.946	0.847	1.323	0.234	0.923	0.815
Age of the previous child						
0			1		1	
1-2			1.249	0.336	1.201	0.610
3-6			1.048	0.857	1.367	0.419
7-10			0.561	0.075	1.385	0.474
Sex composition of children						
Male(s)			1		0.898	0.678
Female(s)			0.854	0.305	1.103	0.712
Both					1	
Number of children						
2					1	
3					0.834	0.580
4+					4.383	0.000
Childbearing intention						
No						
Yes	2.682	0.157	3.327	0.000	3.664	0.000
Nagelkerke Pseudo R^2	0.221		0.151		0.192	
N (couples)	497		841		1256	

Source: Estonian FFS and GGS, authors' calculations

Appendix 5: A more detailed view of housework and childcare

Tables A7 and A8 show the results of the models based on more detailed data on the division of work for different household and childcare tasks. We follow the example of *Dommermuth et al*. (2017), who used a similar approach for analysing Norwegian GGS and register data. We did not include this analysis as the main analysis due to the low sample sizes shown at the bottom of Tables A7 and A8.

Dommermuth et al. (2017) used four questions each on household and childcare tasks. For household tasks, these were: (1) cooking, (2) dish washing, (3) grocery shopping, and (4) cleaning. For childcare tasks, these were: (1) dressing children, (2) putting children to bed, (3) staying at home with sick children, and (4) playing with children and/or taking part in leisure activities with them. The Norwegian GGS gave respondents six answer categories (always respondent, usually respondent, equally, usually partner, always partner, someone else). The Estonian GGS has four answer categories (mostly respondent, equally, mostly partner, someone else). This means that the construction of the main independent variables was slightly different than *Dommermuth et al*. (2017), but we followed the same logic.

We added up the responses given to produce indices. The index equals three if the woman did most of a specific task; two if the task was equally divided between the partners; and one if the man or someone else did most of the task. Thus, the range of the indices was from 4-12, with the mode for both indices being the maximum. Given this uneven distribution, the main variables of interest were coded as: woman heavily burdened (index 11-12), woman burdened (9-10), and other (4-8).

Given the small sample sizes, we only include some basic control variables.

Tab. A7: Results of ordinal regressions for parity-specific fertility intention, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Division of housework						
Woman heavily burdened	1		1		1	
Woman burdened	0.571	0.291	1.096	0.751	1.233	0.373
Woman less burdened	1.307	0.653	0.854	0.678	1.363	0.330
Division of childcare						
Woman heavily burdened			1		1	
Woman burdened			1.298	0.368	1.307	0.256
Woman less burdened			1.089	0.824	0.758	0.405
Woman's work hours						
0-34	1		1		1	
35+	0.883	0.807	0.504	0.022	1.677	0.042
Sex of the respondent						
Male	1		1		1	
Female	2.062	0.097	1.443	0.142	0.639	0.038
Age of the woman						
18-24	1		1		1	
25-29	0.240	0.041	0.240	0.001	0.368	0.083
30-34	0.246	0.087	0.212	0.001	0.224	0.010
35-43	0.018	0.000	0.038	0.000	0.082	0.000
Age of the previous child						
0			1		1	
1-2			1.539	0.315	0.913	0.805
3-6			0.784	0.582	0.594	0.191
7-10			0.603	0.305	0.339	0.014
Number of children						
2					1	
3					0.685	0.183
4+					0.647	0.384
Nagelkerke Pseudo R^2	0.303		0.283		0.202	
N (couples)	227		245		341	

Source: Estonian FFS and GGS, authors' calculations

Tab. A8: Results of logistic regressions for childbearing by parity progression, couples with a woman aged 18-43

Variable	0→1		1→2		2+→3+	
	OR	p	OR	p	OR	p
Division of housework						
Woman heavily burdened	1		1		1	
Woman burdened	0.427	0.018	1.040	0.896	1.216	0.603
Woman less burdened	0.368	0.008	0.823	0.631	0.410	0.186
Division of childcare						
Woman heavily burdened			1		1	
Woman burdened			0.637	0.135	1.067	0.870
Woman less burdened			0.784	0.569	0.793	0.688
Woman's work hours						
0-34	1		1		1	
35+	1.463	0.223	1.387	0.305	1.384	0.464
Sex of the respondent						
Male	1		1		1	
Female	2.269	0.004	1.318	0.303	0.904	0.785
Age of the woman						
18-24	1		1		1	
25-29	0.838	0.580	0.845	0.632	0.505	0.316
30-34	0.527	0.131	1.027	0.949	0.155	0.010
35-43	0.059	0.000	0.204	0.012	0.037	0.000
Age of the previous child						
0			1		1	
1-2			1.647	0.206	1.440	0.542
3-6			0.813	0.637	2.060	0.260
7-10			0.714	0.523	1.258	0.764
Number of children						
2					1	
3					0.791	0.694
4+					8.785	0.001
Nagelkerke Pseudo R^2	0.214		0.106		0.201	
N (couples)	227		245		341	

Source: Estonian FFS and GGS, authors' calculations

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