



ERASMUS SCHOOL OF ECONOMICS

MASTER THESIS ECONOMICS AND BUSINESS

SPECIALISATION POLICY ECONOMICS

**The Relationship between Unemployment
and Beliefs about Gender Equality: A
Regional Comparison across Eleven European
Countries**

AUTHOR:

LEA HAUSER

621176

SUPERVISOR:

PROF. ANNE BORING

SECOND ASSESSOR:

PROF. GLORIA MORONI

JANUARY 29, 2023

THE VIEWS STATED IN THIS THESIS ARE THOSE OF THE AUTHOR AND NOT NECESSARILY THOSE
OF THE SUPERVISOR, SECOND ASSESSOR, ERASMUS SCHOOL OF ECONOMICS OR ERASMUS
UNIVERSITY ROTTERDAM.

Acknowledgements

First of all, I would like to thank my supervisor, Prof. Anne Boring, for her valuable feedback and excellent support throughout the process of writing this thesis. I greatly appreciate the freedom and guidance she gave me in terms of the topic, content, and sources of the thesis. I would also like to thank Prof. Gloria Moroni for offering to be the second examiner for my thesis.

I am also very grateful for my boyfriend Shane for his support, feedback, and for always being by my side over the past months while writing this thesis. Also to my mother Silvia, father Eduard, and brother Clemens for their endless support, love, and inspiration during my studies in Vienna and Rotterdam. They have all been invaluable to my completion of this master's degree. I am also extremely grateful to my friends Johanna, Katja, and Konstantin for their proof-reading and encouragement to finish the thesis. Finally, I am grateful to all of the new friends I made during my time in Rotterdam who contributed to it being the most memorable year of my life so far.

Abstract

This paper investigates the relationship between regional unemployment rates and peoples' attitudes towards gender equality. Data on attitudes about gender equality and demographic control variables are taken from wave three to five of the European Value Study (EVS) which covers the time frame between 1999 and 2020. Data on the unemployment rate is taken from Eurostat for the same period of time. The main analysis is conducted at the regional and individual level. For the regional analysis the individual data has been aggregated at the regional level and a regional fixed-effect methodology is applied. The individual analysis is conducted using a logit model. The main finding is that a higher regional unemployment rates decrease the share of people agreeing with a conservative statement on gender norms. This finding is largely statistically significant and robust to a number of robustness checks. The proposed explanation for this effect of unemployment on the attitudes towards gender equality is that economic circumstances forced progressive gender norms as women entered the workforce to maintain household income as male dominated sectors of the labour market deteriorated.

Contents

1	Introduction	4
2	Literature Review	7
3	Data	10
3.1	Dependent variables: Measurement for Gender Norms	10
3.2	Variable of Interest: Regional Unemployment Rate	13
3.3	Other Control Variables	16
3.4	Regional and Temporal Division	18
4	Methodology	20
4.1	Regional Analysis	20
4.2	Individual Analysis	21
4.3	Robustness Checks	23
5	Results	24
5.1	Regional Analysis - Results	24
5.2	Individual Analysis - Results	29
6	Robustness Tests	32
6.1	Clustered Standard Errors	32
6.2	Lagged Independent Variable of Interest	35
7	Discussion	41
8	Conclusion	42
9	Appendix	45

1 Introduction

This paper investigates the relationship between regional unemployment rates and peoples' attitudes towards gender equality. Competing economic theories suggest that unemployment could be associated with attitudes on gender equality in either a positive or negative way.

On the one hand, a higher unemployment rate could lead to a higher share of people in a region agreeing with conservative statements on gender norms if progressive beliefs about gender equality are a luxury good. When unemployment is low people can afford to have progressive attitudes about gender roles and women's participation in the labour market. This is because work is plentiful and workers' wages and employment status are not threatened by women or people who would typically be out of the labour force if the prevailing attitudes were conservative. A higher unemployment rate restricts the number of jobs available on the labour market and people may be inclined to revert to more conservative beliefs to restrict labour supply and improve their own employment outlook and wages. A similar mechanism has been uncovered empirically by Boring and Moroni (2021), who find that Covid-19 lockdown measures altered beliefs about gender roles. As households became more time constrained due to closures of schools and childcare, men in time-constrained households tended to revert to more conservative beliefs about gender roles. It was no longer in their best interest to have equal beliefs as the imposed time constraint meant that progressive beliefs about gender equality would materially disadvantage them due to the additional burden of unpaid work.

On the other hand, a higher unemployment rate could contradict the traditional division of paid and unpaid work between men and women and thus shape a more egalitarian attitude towards gender roles. If an unemployment shock occurs in sectors dominated by men, as it was the case during the fourth wave of the EVS (2008-2010), it could lead to increased female labour force participation as a measure to maintain household income. This would follow the argument that more equal attitudes towards gender equality are a result of forced

changes in economic circumstances such as industrialisation, recession or war.

To investigate the direction of the relationship, data from the European Value Study (EVS) and Eurostat are used. The EVS provides insights on the beliefs about gender equality and information on the demographics of the surveyed individuals while Eurostat contributes statistical data on unemployment and female labour force participation. The analysis is conducted on the regional (NUTS-2) level within eleven countries¹. The main analysis consists of two parts: an analysis on the regional level and one on the individual level. For the regional analysis the outcome variables as well as the control variables are created by aggregating the individual answers of the relevant questions asked in the EVS on the smallest possible level. Therefore, the three outcome variables represent the share of people agreeing with one of three statements on gender equality². For the individual analysis the answers of the EVS are left on the individual level and the unemployment rate and female labour force participation are included on the regional level. The regional variation of unemployment rates within the eleven countries is exploited to examine their effect on the EVS responses. The EVS is especially interesting to investigate, as the fourth wave took place at the beginning of the financial crisis (2008-2009).

As mentioned before, the main analysis consists of a regional and an individual analysis. For the regional analysis, a one-way fixed effect methodology is employed with additional controls for demographic characteristics, regional female labour force participation and the importance of religion in a region. In this analysis, the impact of labour market conditions, namely regional unemployment rates, on attitudes is investigated. For the individual analysis, a logistic regression model is used. The variable of interest is again the regional unemployment rate in order to investigate how it affects individual attitude formation. Furthermore, dummies that group people based on their sex, employment status, and partner's

¹Estonia, France, Iceland, Italy, Lithuania, the Netherlands, Portugal, Romania, Slovakia, Spain, and Sweden

²"*A pre-school child is likely to suffer if his or her mother works / When a mother works for pay, the children suffers*", "*A job is alright but what most women really want is a home and children*", "*When jobs are scarce, men should have more right to a job than women*"

employment status are used to investigate how attitudes differ depending on the individual employment circumstances of a person and their partner. The other control variables are the same as in the regional analysis.

The main finding of the paper is that a higher unemployment rate decreases the share of people agreeing with a conservative statement about gender equality. For the statement "*A pre-school child is likely to suffer if his or her mother works/When a mother works for pay, the children suffer*", a one percentage point increase of the unemployment rate leads to a 1 percentage point decrease of the share of people agreeing with the statement. For the second statement "*A job is alright but what most women really want is a home and children*", a 1 percentage point increase in the unemployment rate leads to a 1.2 percentage point decrease in people agreeing with the statement. The regional unemployment rate has the smallest effect on the last statement, being "*When jobs are scarce, men should have more right to a job than women*". A one percentage point increase in the regional unemployment rate leads to a 0.4 percentage point decrease in the share of people agreeing in a region. All of the coefficients are statistically significant. Furthermore, higher education substantially decreases the share of people agreeing to any statement in every specification. Female labour force participation also has a negative statistically significant effect on the share of people agreeing with a conservative statement in every specification. Depending on the specification, the statistical significance of the other controls are varying.

The individual analysis is supposed to shed light on the dynamics behind these results. What becomes visible, and is in line with the literature, is that men in dual earning couples have more progressive attitudes (Cha & Thébaud, 2009; Wilkie, 1993), at least when it comes to the statements about a women's self-determination. The question on who should be preferred on the labour market is only determined by their own employment status, thereby unemployed men are more likely to agree with the statement that men should be preferred for a job if the labour market is tight. Furthermore, it does not come as a surprise that on average women are less likely to agree with any of the statements and in the three groups

that are more likely to agree, the common ground has found to be the unemployed status of their partner.

The remainder of the paper proceeds as follows. Section 2 encompasses a review of the literature on the determinants of gender norms. Section 3 discusses the data used in this paper. Section 4 describes the methodology and empirical strategy for the main analysis (i.e. regional and individual analysis) as well as for the robustness checks. Section 5 presents the main results of the regional and individual analysis. Section 6 outlines the results of the robustness checks applied. Section 7 is a discussion of the findings from the regional and individual analysis. Finally, section 8 concludes.

2 Literature Review

The question on what determines gender norms or attitudes towards them is an extensively studied field and many determinants have been examined already. Unemployment rates, however, have not been the main focus in this strain of literature. This paper aims to investigate which effect a higher share of unemployment has on beliefs about gender equality.

There are two ways in which unemployment can influence attitudes, which have already been outlined in the introduction. Firstly, following the logic of Boring and Moroni (2021), more equal beliefs about gender equality may be a luxury good that decreases in times of economic constraints - especially among men as soon as they have to make sacrifices. An increase in unemployment can be seen as the consequence of a constraint on the labour market, namely too little demand for available labour supply. Therefore, only a certain number of people will be employed and higher unemployment rates would be expected to increase the amount of people agreeing with conservative statements on gender norms to further limit the labour supply.

On the other hand, the breadwinner model is still predominant, and was so during the period studied in this paper (1999-2020), which means that more men are part of the paid labour

force as it is seen as their main responsibility to provide financial stability for a family. If an unemployment shock occurs in sectors that are male-dominated, as it did during the fourth wave of the EVS (2008-2010), it could lead to an increase in female labour force participation as a measure to secure household income. Thus, the traditional division of labour between paid and unpaid work is contradicted and more equal beliefs are shaped. It becomes typical for a woman to be a part of the paid labour force, which normalises, shapes, and solidifies more progressive attitudes. These progressive attitudes will be revealed in survey answers such as the EVS. This would follow the previous literature that suggests that more equal attitudes towards gender equality are a result of forced change in economic circumstances (Inglehart et al., 2003; Iversen & Rosenbluth, 2005).

These two competing possible effects of the effect of regional unemployment rates on attitudes towards gender equality are investigated in this paper. A positive correlation would support the theory of the constrained labour market and a negative correlation would favour the theory about forced economic change.

Other determinants, however, have been extensively studied using different ways of measuring gender role attitudes. One approach that previous economic literature has focused on, is to capture the determinants of revealed preference measures of gender norms. These include female labour force participation and women's investment in their human capital, which are considered as revealed preference measures because they arise from real actions taken rather than hypothetical survey answers. Factors that shape women's participation in education and labour have been found to be religious affiliation (Heineck, 2004), contraceptive technology (Goldin & Katz, 2002), opportunity costs of working, own wage (Grimshaw & Rubery, 2015; Hérault & Kalb, 2020), partner's wage (Blau & Kahn, 2007), policies (Jaumotte, 2004), and gender identity (Akerlof & Kranton, 2000), among others.

On the other hand, there are stated preference methodologies that aim to capture attitudes and beliefs. This has the advantage of being a more direct measure of beliefs about gender equality that is less likely to be influenced by factors that shape revealed preference mea-

asures (i.e. opportunity costs of working). Nevertheless, it has the disadvantage of the biases that come with surveys such as warm glow bias, gender of the interviewer bias, and the fact that there are no real consequences for an untruthful answer (Stantcheva, 2022). The above mentioned determinants that influence revealed preference measures also affect stated preferences measures of gender role attitudes. For example, Guiso et al. (2003) use stated preferences from the World Values Study (WVS) to investigate the effect of religiosity on attitudes towards different aspects – one of them being women. They find that a higher religious affiliation is associated with more conservative attitudes towards working women. Additionally, there are studies that look at the interplay between stated preferences, also labeled as attitudes or beliefs, and revealed preferences with respect to educational attainment or on the labour market (Fortin, 2005; Seguino, 2007; Vella, 1994). Seguino (2007), for example, investigates different economic factors that influence gender norms, using the World Value Study (WVS). The author is mainly interested in the effect of women’s economic activity on attitudes and finds that a higher share of female employment is a key determinant of beliefs in gender equality. According to her, the access to material resources is an important instrument to transform rigid gender norms. It must be mentioned that the relationship studied is only a correlation and not an actual causal relationship.

This paper is adding to this literature by investigating the effect of unemployment rates on beliefs about gender equality. This is a relevant research question because unemployment is one of the most significant economic indicators that has an impact on households and there are strong theoretical arguments that it is a determinant of gender norms. This paper adds empirical evidence on the effect of unemployment on gender norms and sheds some light on which of the two theoretical directions of the effect of unemployment on beliefs about gender equality is borne out empirically. Furthermore, it complements previous empirical literature on the social and economic determinants of gender attitudes.

3 Data

The main source of data for this thesis is the latest three waves of the European Values Study (EVS, 2022) that has been conducted five times to date. Each wave took several years to complete (Wave 1: 1981-1984, wave 2: 1990-1993, wave 3: 1999-2001, wave 4: 2008-2010, wave 5: 2017-2020). The EVS is a micro repeated cross section data set that captures individual characteristics, demographics, and attitudes towards various topics. The first wave of the survey will be excluded as it does not contain questions on gender norms. The second wave will be excluded because none of the relevant control variables (such as education, occupation, and female labour force participation) are available. Data on unemployment and female labour force participation are taken from secondary sources, namely Eurostat, in the time between 1999 and 2020.

3.1 Dependent variables: Measurement for Gender Norms

As aforementioned, the main motivation for this thesis were the findings in Boring and Moroni (2021) where they show that despite an overall downwards trend in conservative gender norms between 1999 and 2020, some countries display a reverse trend or stagnation in beliefs on gender equality during the years 2008-2010, when the fourth wave took place. As only three waves are used in this analysis, there is a clear timeline consisting of the wave before the recession, the wave of the recession, and the wave after the recession. The main question investigated is the extent to which regional unemployment rates influence beliefs about gender equality on the regional and individual level. Therefore, the share of people agreeing to the statements below, taken from the EVS, are used as outcome variables in the regional analysis, whereas the re-coded binary answers are used as outcome variables in the individual analysis.

Part of the main analysis is conducted at the regional level, although information may be lost due to aggregation bias. However, this is done because the variable of interest is the

regional unemployment rate and not the self-reported employment status (which is also exploited in the individual analysis). The official regional unemployment rate is the more appropriate indicator of unemployment since it is collected and released on a regular basis and with a coherent methodology. Therefore, the approach in the regional analysis is the most appropriate and relevant to new data releases regarding the unemployment rate.

The statement used for the first specification of the regressions is:

1. "A pre-school child is likely to suffer if his or her mother works / When a mother works for pay, the children suffer" ³

People can either *strongly agree*, *agree*, *disagree*, *strongly disagree*, or not say anything at all. This variable was re-coded to be a binary variable where all answers that state *strongly agree* and *agree* are grouped and all answers that state *strongly disagree* and *disagree* represent a group. If no reply was available, the variable was coded as missing. The variable is re-coded to be binary as this gives the share of people who agree with the statement when the individual data is aggregated at the regional level. The binary variable serves as outcome variable for the individual analysis because it simplifies the interpretation compared to having a continuous outcome variable. This statement captures preoccupations against women who are a part of the paid labour force and therefore do not fulfil the expectations of the breadwinner model.

The figures in this section show the data aggregated at the national level for simplification. As there are 83 regions of observation it would not be feasible to picture them all in one graph. These graphs are for illustrative purposes to demonstrate the trends in attitudes towards gender norms at the country level over the past decades. Note that the analysis is conducted at the regional and individual level and not at the country level. As pictured in Figure 1, the percentage of people strongly agreeing or agreeing to this statement increased in Spain, Lithuania, Romania and Portugal and decreased to a lesser extent than the trend would

³The first formulation was used between 1990 and 2008 (wave 2-4) and was rephrased in 2017 (wave 5)

suggest or even stagnated in Italy, the Netherlands, and Estonia. Iceland, Slovakia, and Sweden display a continuous downward trend during the fourth wave. However, in Iceland the share of people agreeing increases in the fifth wave. In Slovakia it keeps stagnating after the fourth wave and in all the other countries the percentage of people agreeing to the statement mentioned above goes down. What is remarkable is the strong increase in Italy from the second to the third wave while for the other countries there is a visible decrease. In the fifth wave, however, there is a clear decrease in the share of people agreeing to this statement in Italy. In Iceland, Sweden and Slovakia, however, a clear decrease between wave three and four is followed by a stagnation or even increase in wave five.

Figure 2 shows the trend of another question on gender norms, namely :

2. "A job is alright but what most women really want is a home and children"

Regarding the answer possibilities, this statement works like the first one mentioned above. It is re-coded to a binary variable too which is used as the dependent variable in the individual analysis. For the regional analysis the individual answers are aggregated at the regional level and therefore represent the share of people agreeing with the statement. It makes an assumption about the goals and aspirations of women in general. It assumes that it is in the nature of a woman to want to have a child and to do care-work as a form of fulfilment. Looking at the visualised answer to this question, no clear pattern is detectable. However, Figure 2 shows an increase in the proportion of people agreeing with this conservative statement in 2008-2010 for many countries, namely, the Netherlands, Spain, Portugal, Estonia, and Italy. For all of these countries the percentage of people agreeing goes down after the fourth wave. In Romania the share of people agreeing already increased during the third wave and stayed high. Slovakia shows a unique pattern where less people agree in the third and fourth wave, and the share of people agreeing extremely increases during the fifth wave. Again, Iceland and Sweden show a continuous decreasing pattern.

Figure 3 pictures the trend of the third question on gender norms taken as a proxy of beliefs

in gender equality, being:

3. "When jobs are scarce, men should have more right to a job than women"

This question appears different to the other ones in the data set as the possible answers are not the four stages of agreeing but the respondent could pick "agree", "neither", "disagree", or not answer at all. The answers to this question have been coded as a binary variable too. Following Fortin (2005) the answer to this specific question was coded as 1 if the person actively agrees to the statement, and 0 if they answer with *neither* or *disagree*, as only actively agreeing shows a discriminatory attitude towards women's participation in paid work. Again, the binary measure is used as dependent variable for the individual analysis, while it is aggregated at the regional level to serve as the outcome variable for the regional analysis. Compared to the other questions, the percentage of people agreeing to this statement is way lower after the second wave. It stagnates after the third wave at a low level for most countries. In Estonia and Slovakia the percentage of people agreeing to the statement goes up in wave four. In wave five, the share of people agreeing drastically increases Slovakia, Romania, Lithuania, and Italy.

3.2 Variable of Interest: Regional Unemployment Rate

The regional unemployment rate is used as the variable of interest due to its economic importance and the aforementioned theory for how unemployment might affect gender norms. A higher unemployment rate may increase the share of people agreeing with conservative statements on gender norms if progressive beliefs about gender equality are a luxury good and mainly prevailing in times without restrictions. Applied to this analysis, this would be times of low unemployment where most people can easily find work. However, it might decrease the share of people agreeing with conservative statements on gender norms. This would be the case if especially male-dominated sectors of the labour market are hit by an

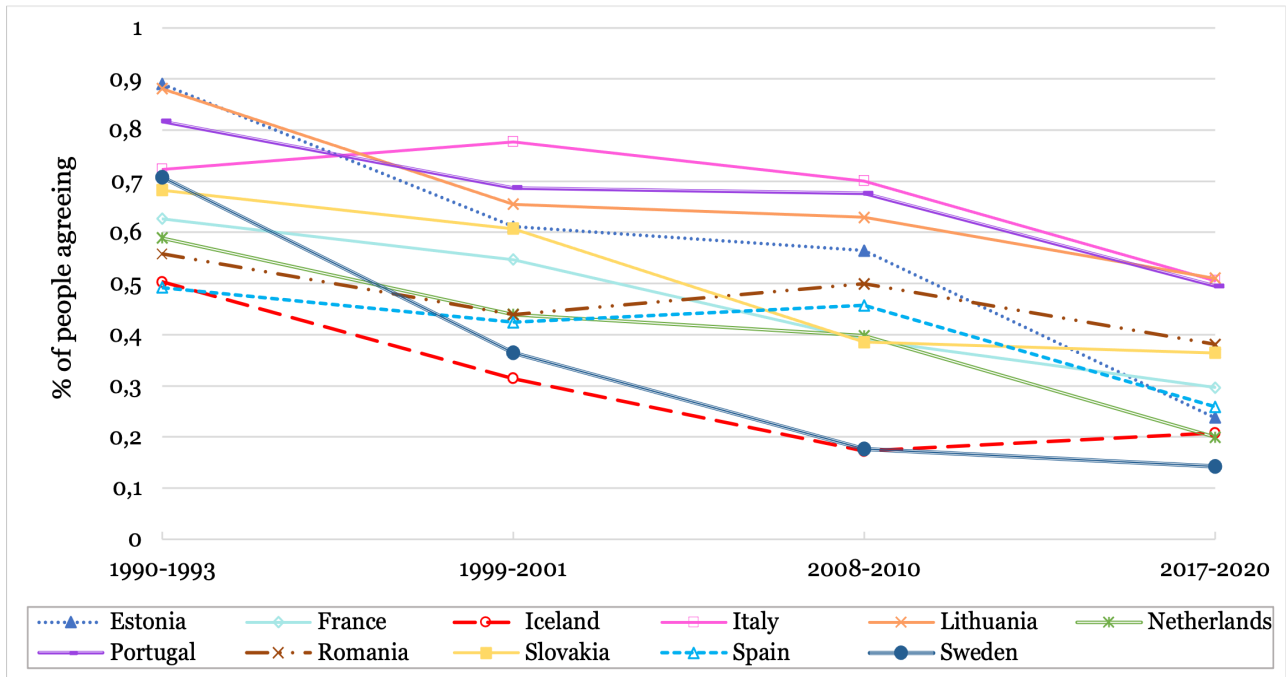


Figure 1: "When a mother works for pay the child suffers" (Boring and Moroni, 2021)

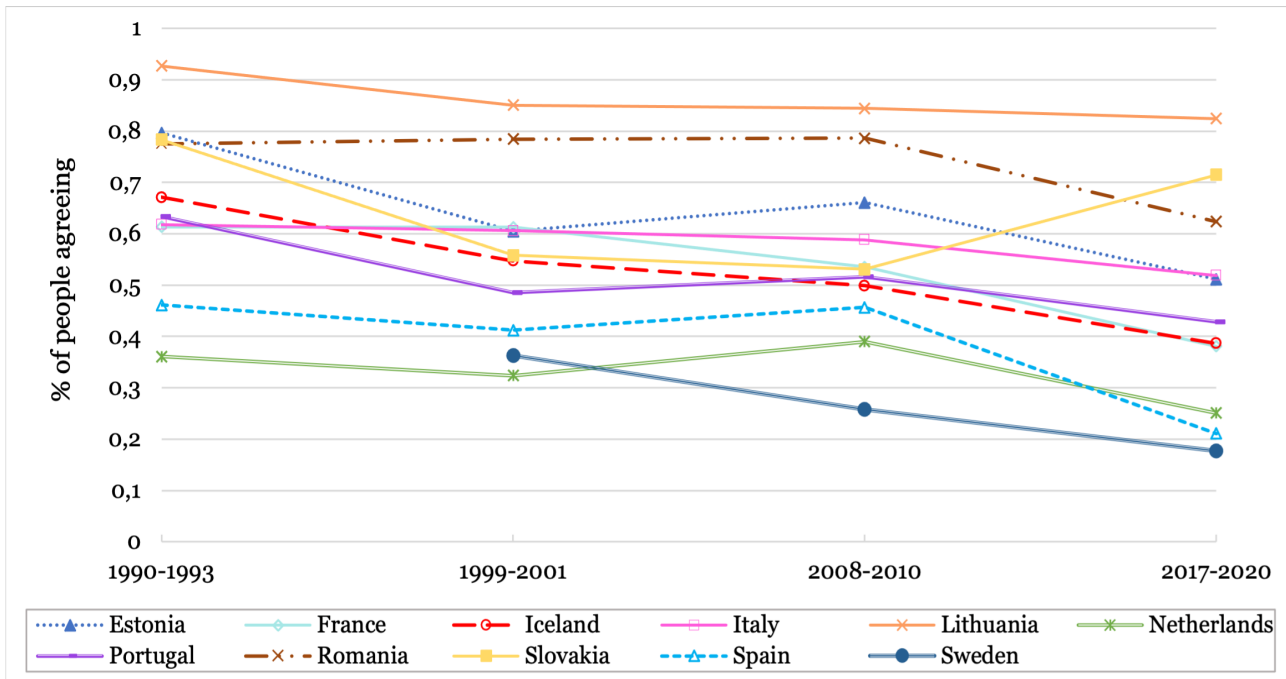


Figure 2: "A job is alright but what most women really want is a home and children" (Boring and Moroni, 2021)

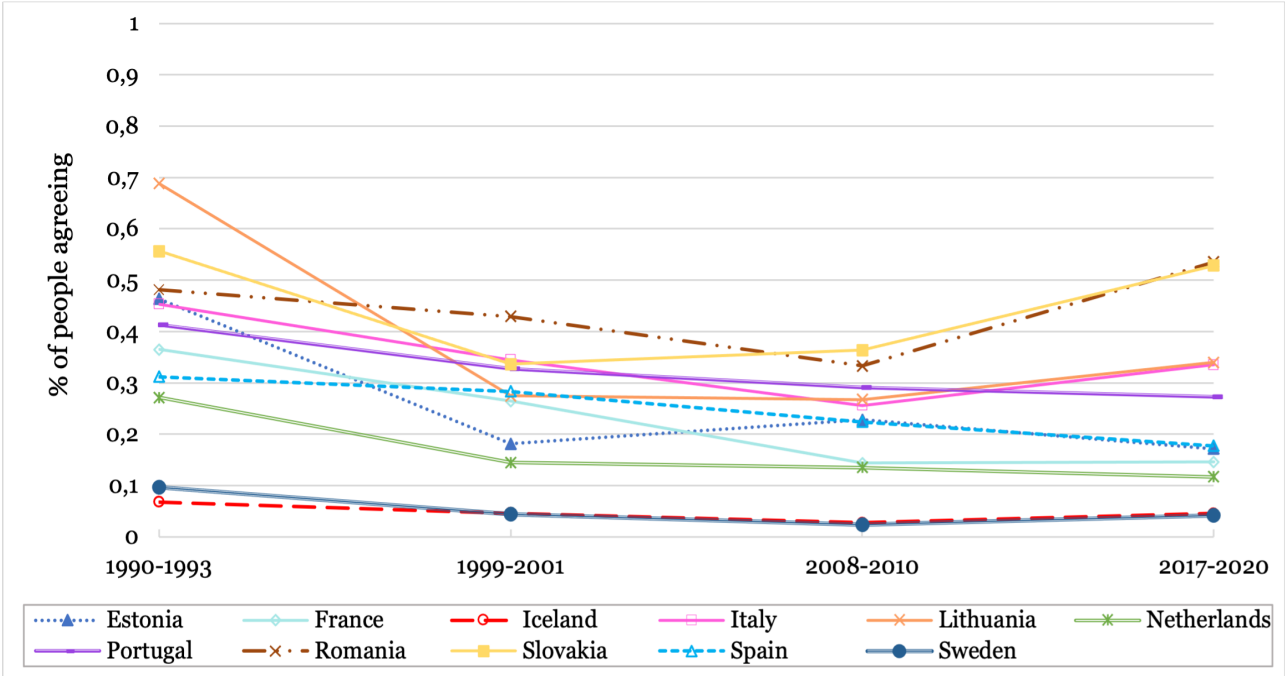


Figure 3: "When jobs are scarce, men should have more right to a job than women"

unemployment shock, as it was the case during the financial crisis. This could lead to a forced change in economic circumstances, being a higher share of women joining the labour force to maintain household incomes.

The yearly unemployment data on the regional (NUTS-2) level is used from Eurostat for wave 3-5⁴ and is given in percentages between 0 and 100.

Figure 4 shows that the main labour market effects of the crisis occurred differently across countries. Unemployment steadily decreases in all countries during the 2000s until the onset of the financial crisis in 2007/2008. In most countries, the unemployment rate starts to rise around 2008. The graph shows the development of the unemployment rate (the proportion of unemployed people as a share of the labour force aged between 15 and 74) of the countries that are subject to the analysis. Estonia, Lithuania, Sweden and Iceland had their peak of unemployment after the financial crisis in 2009/2010 whereas Spain, Portugal, Italy, and the Netherlands reached their highest unemployment rate in 2012/2013.

⁴Online code: lfst_r.lfu3rt

To simplify and illustrate the trend, only national unemployment rates are displayed. As already mentioned, the analysis takes place on the NUTS-2 level due to substantial regional differences in unemployment rates. Table 9 in the appendix shows those variations. The absence of variation in Estonia, Iceland, and Lithuania is because those countries are treated as one region due to their low population size. In France the region with the highest unemployment rate is almost double the the unemployment rate in the region with the lowest unemployment rate in all years. Furthermore, countries where the variation is remarkably high (i.e. one region has at least twice the unemployment rate of another) are Italy, the Netherlands, Slovakia, Spain, and Romania. In Portugal and Sweden the variation is moderate.

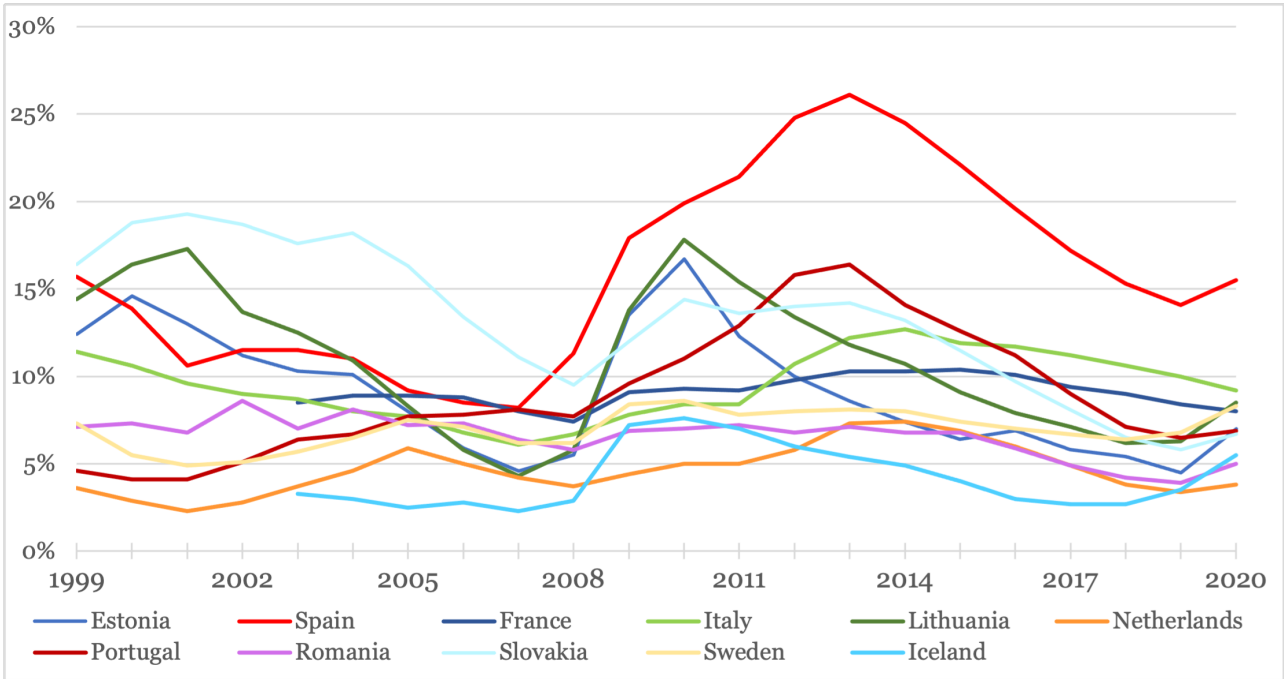


Figure 4: Unemployment Rate per country

3.3 Other Control Variables

Further independent variables are included in the regressions to control for omitted variable bias. The controls added to all regression specifications are demographic variables such as

age, marital status, number of children, level of education, and sector of employment as well as female labour force participation. In the regional analysis they are aggregated on the NUTS-2 level and therefore show the averages or shares of people in a region that have a certain characteristic. They are given as a share between 0 and 1. The exceptions are age and children as they are given in average units of years and number of children per region. In the individual analysis the variables marital status, the levels of education⁵, and sectors of employment⁶ are coded as dummy variables to represent the share of people with this characteristic. The age of a person is given in years and the amount of children as number. To control for the impact of religion on attitudes about gender norms, another question from the EVS is used as a control variable. It asks if religion is important to the respondent. That is done as the literature suggests that the more religious a person is, the more they have the tendency to support traditional gender roles (Guiso et al., 2003; Heineck, 2004). In the regional analysis, the share of people to whom religion is important is given as a share of people between 0 and 1. In the individual analysis a dummy variable is created to measure if religion is important to an individual or not. The regional female labour force participation is measured by the share of women in labour force as a percentage of the female population and taken from Eurostat. It is given in percentages between 0 and 100.

For the individual analysis, in addition to the control variables mentioned above, sex, the employment status of the respondent, and the employment status of their partner are included to examine the influence of these characteristics on attitude formation. To do so, 24 dummies are created based on these characteristics. An overview of the groups by EVS wave (mean, standard deviation, number of people in a certain group, number of observations) can be found in table 10 in the appendix. The data on the partner's employment status is only available in waves 4 and 5, which is why only these waves are used for the individual analysis. Table 1 gives an overview of the descriptive statistics by displaying

⁵Low, middle high

⁶White collar, blue collar, service, out of the labour force, unemployed, and a group of people that do not belong to any of the aforementioned

mean, standard deviation, number of observations, and minimum and maximum values for the included control variables.

3.4 Regional and Temporal Division

In order to divide the countries into regions that coherently reflect the same boundaries over time across all survey waves, a summarising regional identifier is created, which is largely in line with Eurostat’s Nomenclature of Territorial Units for Statistics (NUTS). This indicator depends on the smallest region available between waves, as a standardised regional identifier is provided for the first three waves, while waves 4 and 5 conform to the NUTS-2 taxonomy. For Estonia, Iceland, and Lithuania no regional disaggregation is available due to their low population sizes. Overall, the eleven countries of observation are separated into 83 regions. It is important to compare within countries to avoid potential aggregation bias that can occur due to regional differences. Furthermore, more granular regional data increases the number of observations, which, in turn, allows for more variation in the dependent and independent variables of interest.

In order to be not restricted to a time span of just three waves, the variable that captures the date of the interview is used to create a variable that identifies the exact year (and not only the wave) in which the interview took place. That makes it possible to create more than three observations per region as in some countries/regions the data collection went on for multiple years. Instead of three waves, the data set consists of observations for seven years: 1999, 2008, 2009, 2017, 2018, 2019, and 2020. Compared to conducting the analysis with the time-span set at the wave level, creating yearly observations for each region allows for a more precise analysis due to a more precise matching of the unemployment rate with the proportion of people agreeing with a statement of interest and the aggregated control variables of each year in each region.

Table 1: Descriptive Statistics per Wave

Wave	Variable Name	Mean	SD	N	Min	Max
1999-2001	Men	0.48	0.50	13294	0	1
	Age	44.97	17.13	13295	18	97
	Married	0.58	0.49	13198	0	1
	Number of children	1.65	1.47	13122	0	8
	Sector: White Collar	0.34	0.47	13296	0	1
	Sector: Blue Collar	0.27	0.44	13296	0	1
	Sector: Service	0.05	0.22	13296	0	1
	Sector: Unemployed	0.09	0.28	13296	0	1
	Sector: Out of the Labour Force	0.36	0.48	13296	0	1
	Sector: None of the mentioned	0.06	0.24	13296	0	1
	Educational Level: Low	0.38	0.48	13296	0	1
	Eduactional Level: Middle	0.43	0.50	13296	0	1
	Eduactional Level: High	0.19	0.39	13296	0	1
	Religion Important	0.53	0.50	13111	0	1
2008-2010	Men	0.44	0.50	15603	0	1
	Age	49.87	18.03	15597	17	108
	Married	0.55	0.50	15449	0	1
	Number of children	1.67	1.39	15366	0	8
	Sector: White Collar	0.46	0.50	15608	0	1
	Sector: Blue Collar	0.33	0.47	15608	0	1
	Sector: Service	0.09	0.28	15608	0	1
	Sector: Unemployed	0.08	0.26	15608	0	1
	Sector: Out of the Labour Force	0.38	0.49	15608	0	1
	Sector: None of the mentioned	0.03	0.16	15608	0	1
	Educational Level: Low	0.37	0.48	15608	0	1
	Eduactional Level: Middle	0.40	0.49	15608	0	1
	Eduactional Level: High	0.22	0.41	15608	0	1
	Religion Important	0.51	0.50	15432	0	1
2017-2020	Men	0.45	0.50	17580	0	1
	Age	51.50	17.87	17509	18	82
	Married	0.53	0.50	17427	0	1
	Number of children	1.57	1.30	17463	0	5
	Sector: White Collar	0.50	0.50	17590	0	1
	Sector: Blue Collar	0.20	0.40	17590	0	1
	Sector: Service	0.18	0.39	17590	0	1
	Sector: Unemployed	0.09	0.28	17590	0	1
	Sector: Out of the Labour Force	0.39	0.49	17590	0	1
	Sector: None of the mentioned	0.03	0.16	17590	0	1
	Educational Level: Low	0.29	0.45	17590	0	1
	Eduactional Level: Middle	0.41	0.49	17590	0	1
	Eduactional Level: High	0.29	0.45	17590	0	1
	Religion Important	0.48	0.50	17448	0	1

The regional and temporal division leaves the regional analysis with three waves of the survey, eight years within the waves, eleven countries, 83 regions within the countries and therefore 290 observations overall.

4 Methodology

4.1 Regional Analysis

The main analysis is conducted using a fixed effect model described by the following equation:

$$Y_{ryq} = \beta_0 + \beta_1 U_{ry} + \beta_2 FLFP_{ry} + \beta_k \mathbf{X}_{ry} + \gamma_r + e_{ry} \quad (1)$$

Y_{ryq} is the gender norm indicator measured by the share of people agreeing to the asked statement per region r during a certain year y of either the question q "A pre-school child is likely to suffer if his or her mother works / When a mother works for pay, the children suffer", "A job is alright but what most women really want is a home and children" or "When jobs are scarce, men should have more right to a job than women", which are the only questions on gender norms that have been consistently and comparably asked from wave 3 to 5 in the countries of interest.

β_1 captures the marginal effect of the variable of interest U_{ry} , which is the unemployment rate in region r during year y provided by Eurostat. β_2 is the marginal effect of female labour force participation on the outcome variable of interest q in region r and year y . Female labour force participation is controlled for as not doing so would bias results due to the likely correlation between it and both the unemployment rate and beliefs about gender equality. Therefore, controlling for the female labour force participation removes this omitted variable bias. \mathbf{X}_{ry} is a vector of time varying factors that control for omitted variable bias not picked up by the fixed effects. The available indicators that might affect gender

norms captured by the questions q include the average age, share of married people, amount of children, share of low, middle, and high educated people, share of people to whom religion is important, and share of people working in a white collar, blue collar, or service job, people who are not participating in the labour force (housewives, students, pensioners), and people currently unemployed, per region r and year y . γ_r are the regional fixed effects that are supposed to capture any time invariant regional specific omitted variables in order to provide inter- and intranational comparability. They are used to relax the exogeneity assumption of a standard ordinary least squares (OLS) model by demeaning time-invariant regional factors from the equation. A drawback of this method is that it is unclear which effects exactly are demeaned. However, the time varying controls cannot correlate with the error term in order for the estimate to unbiased. Collischon and Eber (2020) point out, that this assumption is much weaker than the exogeneity assumption which needs to hold for OLS models. Therefore, the main advantage of using a fixed-effect model is to limit the source of biases to time-varying ones compared to OLS models, where any unobserved factor to leads to an omitted variable bias. Following the argument by Collischon and Eber (2020) further, linear fixed-effect models are more robust to biases than OLS models.

Using a fixed-effect model means that solely within-region effects are detected. Despite controlling as well as possible for heterogeneity, there will usually be unobserved heterogeneity issues, especially time-varying ones. Additionally, for the main analysis robust standard errors are used to control for heteroskedasticity.

4.2 Individual Analysis

To investigate which characteristics drive the agreement with a statement on traditional gender norms, an analysis on the individual level is conducted. As the main research question examines the effect of regional unemployment on the share of people agreeing with a conservative statement on gender equality, a similar approach on the individual level is used. This is done to understand not only the effect of the regional unemployment rate on the atti-

tude formation towards gender equality, but also to look into the combined effect of the sex, employment status, and partner's employment status of the individual i . The separation by sex is done as it is anticipated that the share of people agreeing to a conservative statement about gender equality would differ between men and women. Furthermore, different combinations of employment statuses are investigated to reveal their influence on the formation of attitudes.

The same data are used as in the regional analysis. The only difference is that for this specification the data is not aggregated, but left at the individual level as originally reported. A logistic regression model is specified as the outcome variable is binary. The regression equation is given as:

$$Y_{iyq} = \beta_0 + \beta_1 U_{ry} + \beta_2 FLFP_{ry} + \beta_j \mathbf{Z}_{iy} + \beta_k \mathbf{X}_{iy} + e_{iy} \quad (2)$$

Where Y_{iyq} is the answer of person i to one of three statements q "When a mother works for pay, the children suffer", "A job is alright but what most women really want is a home and children", or "When jobs are scarce, men have more right to a job than women" during a certain year y . β_1 captures the effect of the unemployment rate U_{ry} in region r at the time of the interview y to investigate which effect the regional unemployment rate has on the individual level. The effect is expected to be similar to the results from the regional analysis but not the same. This is due to the fact that for the regional analysis the individual data is aggregated at the regional level which treats the region as one observation regardless of the number of people surveyed there. This aggregation would lead to discrepancies between the regional and individual analysis in terms of the point estimates of the effect of regional unemployment on the attitude of people towards gender equality. However, it is expected that they will be broadly similar since the regional observations are derived from the same underlying individual data. Likewise β_2 captures the female labour force participation

$FLFP_{ry}$ in region r in the year of the interview y . The actual coefficients of interest are β_j , the ones that capture the effects of the 24 dummy variables represented by the vector Z_{iy} . This vector includes dummy variables based on the sex of the interviewed person i , the employment status of the interviewed person i , and the employment status of the partner of the interviewed person i all in the year of the interview y . The EVS provides limited data on the partner of a person. This information is only available for wave four and five which still leaves the analysis with just below 30,000 observations⁷. The variable on the sex of the interviewee i is a binary variable whereas the employment variables of both the interviewee i and the partner are continuous variables⁸. The dummies give insights on twelve different groups of people per sex and how their employment status and partner’s employment status affect the likelihood of agreeing to a statement. The reference group is unemployed men with unemployed partners. \mathbf{X}_{it} is again a vector of time varying factors that control for omitted variable bias. It includes the same characteristics as on the aggregated level: Age, marital status, number of children, level of education, the importance of religion, and sector of work. At the individual level, regional fixed effects cannot be taken into account, which means that individual results are not fully comparable with regional results.

4.3 Robustness Checks

The main analysis was conducted using robust standard errors but does not account for spillover effects between regions within countries. To allow for correlation of the standard errors between the regions, clustered standard errors on the country level are used as a robustness check.

An additional robustness check to counter concerns regarding reverse causality is implemented by using lags of the independent variable of interest (i.e. unemployment rate).

⁷The amount differs across questions q as there are differences in the amount of people answering the questions.

⁸For the own employment status the options are: (1) employed, (2) unemployed, or (3) out of the labour force. For the partner’s employment status the options are: (1) employed, (2) unemployed, (3) out of the labour force, or (4) no partner.

Equation (1) is altered to include 1,2, and 3 year lags of the unemployment rate. An additional argument for using lags is that unemployment might affect opinions with some delay (Seguino, 2007). Since unemployment data is only available from 1999, there are no lags available for the third wave of the EVS, thus decreasing the sample size. The likelihood of reverse causality occurring in this specification is low since the beliefs in gender equality (and thereby the answer to the statement) of the year of observation is not very likely to influence the unemployment rate of the previous year.

5 Results

5.1 Regional Analysis - Results

The main analysis is conducted by estimating equation (1) for each of the three outcome variables. Every outcome variable is the percentage of people strongly agreeing or agreeing to a statement on gender norms. Wave 3 to 5 from the EVS are used and all regions are included. The estimated effect of the unemployment rate is to be interpreted as *ceteris paribus*. The results from the main analysis can be found in Table 2.

For all three questions, the effect of the regional unemployment rate on the proportion of people agreeing to a statement that mirrors conservative beliefs of gender norms is negative and statistically significant. In other words, an increase in the unemployment rate leads to a lower share of people agreeing with a conservative statement on gender norms in a region. The magnitude of the marginal effect is similar between question one (*"A pre-school child is likely to suffer if his or her mother works / When a mother works for pay, the children suffer"*), and two (*"A job is alright but what most women really want is a home and children"*), and is smaller for question three (*"When jobs are scarce, men should have more right to a job than women"*). For question one, an increase of the unemployment rate by 1 percentage point decreases the percentage of people in a region agreeing to the statement by

1 percentage point, *ceteris paribus*. This effect is statistically significant at the 1% level, after adding controls. For question two, the independent variable of interest is also statistically significant on the 1% level and an increase of the unemployment rate by 1 percentage point decreases the percentage of people in a region agreeing to the statement by 1.2 percentage points, *ceteris paribus*. The impact of unemployment on the percent of people agreeing to statement three is smaller than the marginal effect of the first two questions. It is from a different block of questions within the EVS which might be the reason for the variation in the results⁹. A 1 percentage point increase in the regional unemployment rate would lead to decrease of 0.4 percentage points of the share of people agreeing to statement three, *ceteris paribus*. It is statistically significant at the 10% level, thereby having not only the smallest but also the statistically least significant effect.

Female labour force participation is included to control for the likely correlation between it and both the unemployment rate and beliefs about gender equality. The marginal effect in all three specifications is smaller in magnitude than the one of unemployment. A decrease in the share of people agreeing with the statements between 0.5 and 0.9 percentage points would occur if the female labour force participation rate were to be increased by 1 percentage point, *ceteris paribus*. For the first question the marginal effect is significant at the 1% level whereas it is only significant at the 5% for question two and three. These results seem intuitive but not free from reverse causality issues.

The demographic controls added - i.e. average age, share of married people, and average number of children - have no statistically significant effect in any specification. The marginal (not statistically significant) effect of age is negative but close to zero for question one and two, and is actually zero for question three. The coefficients for the share of married people is negative for question one and positive for question two and three. Furthermore, for a higher average number of children a positive (not statistically significant) marginal effect is

⁹While the first two questions aim to present attitudes towards gender equality, the third question refers to preferential treatment in the labour market, e.g. between nationals and foreigners and men and women.

reported for questions one and two, and a negative one for question three.

The coefficients of the sectoral variables are to be interpreted as a comparison to the share of white collar employees in a region as white collar is omitted from the regression. Furthermore, people who are not an active part of the labour force - and therefore not employed in one of the three sectors - are coded as separate groups¹⁰ and included in the regression for the sake of completeness and coherent interpretation, but are not reported in table 2 as the focus of this variable is to investigate how the effect differs across sectors. The full table (table 10) can be found in the Appendix¹¹. The effect of a 1 percentage point increase in the population of blue collar relative to white collar workers is ambiguous and not statistically significant. The effect is extremely close to zero for all three questions and not statistically significant at any level. The effect of a 1 percentage point increase in the population of service employees relative to white collar employees, however, would reduce the share of people agreeing to statement one and two by 0.5 percentage points and 0.4 percentage points. These effects are statistically significant at the 1% level. The marginal effect of a higher share of service employees relative to white collar employees on statement three is smaller (a decrease of 0.1 percentage points of the share of people agreeing) and not statistically significant at all.

Education is also coded as a continuous variable and the marginal effects of the reported coefficients (share of people with middle and high education) are to be interpreted in comparison to the share of people with low education, as this variable is omitted from the model. The coefficients of both the shares of people with middle and high education are statistically significant at the 1% level for all questions¹². The marginal effects are all negative, meaning a higher share of people with middle or high education leads to a decrease in the share of people agreeing with any conservative statement on gender equality. The effect of a 1 per-

¹⁰Unemployed, out of the labour force, and a group for people who are not part of any other group

¹¹Out of the nine coefficients not showed in the table, three are statistically significant at the 10% level: The coefficient of the group of people out of the labour force for question 3 and the coefficients for questions 1 and 3 of the group with persons not belonging to any other group. Since the last group is not identifiable and therefore not interpretable, these coefficients are not shown in the table.

¹²Only the marginal effect of the share of people with high education on the third question is statistically significant at the 5% level.

centage point increase in the share of people with middle education relative to the share of low educated people, decreases the share of people agreeing to any of the three statements between 0.2 and 0.5 percentage points. This result is intuitive as higher education promotes more equal beliefs in gender norms. This could also be a reason for the partially insignificant effect of the sectors as a job is highly correlated with the degree of education.

The share of religious people in a region does not have a statistically significant impact on the share of people agreeing to two statements but has a statistically significant impact at the 10% level on question two. The coefficients are all positive. This means that a higher share of religious people in a region would lead to a higher share of people agreeing with the conservative statements on gender equality.

Table 2: Regional Analysis

	Child suffer	Child suffer	Women want	Women want	Women want	Men prio	Men prio
Unemployment	-0.004 (0.005)	-0.010*** (0.003)	-0.007* (0.004)	-0.012*** (0.004)	-0.002 (0.003)	-0.004* (0.003)	-0.004* (0.003)
FLFP		-0.009*** (0.002)		-0.005** (0.002)		-0.005** (0.002)	
Age		-0.004 (0.002)		-0.001 (0.003)		0.000 (0.002)	
Marital Status		-0.027 (0.084)		0.054 (0.168)		0.071 (0.059)	
Nr. of children		0.069 (0.048)		0.010 (0.068)		-0.060 (0.037)	
Blue Collar		0.063 (0.096)		0.084 (0.149)		-0.085 (0.106)	
Service		-0.489*** (0.101)		-0.426*** (0.148)		-0.108 (0.115)	
Middle Educ.		-0.455*** (0.085)		-0.322*** (0.100)		-0.205*** (0.077)	
High Educ.		-0.509*** (0.119)		-0.454*** (0.137)		-0.225** (0.088)	
Religion important		0.132 (0.090)		0.230* (0.117)		0.054 (0.081)	
Constant	0.499*** (0.043)	1.405*** (0.130)	0.558*** (0.036)	1.001*** (0.184)	0.200*** (0.023)	0.570*** (0.159)	
Observations	290	290	290	290	290	290	290

(1) Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(2)

5.2 Individual Analysis - Results

In order to better understand the results of the regional analysis, an analysis on the individual level is conducted. This provides more insights on the mechanisms behind the negative relationship of the unemployment rate and conservative beliefs about gender equality by looking at how the individual employment status of a person and their partner's employment status affect their probability to agree to a statement. This is done using the specification shown in equation (2). As mentioned before, this specification only includes data from wave 4 and 5 as the data on the partner is not available for earlier waves.

Table 3 below shows the odds ratios for the independent variables. The results for the grouped dummies are presented in a more intuitive way in Table 4 and therefore excluded from this table. The results are closely in line with the regional analysis, as the odds ratios for the regional unemployment rate are below 1 and statistically significant at the 1% level, indicating that an increase in the unemployment rate is associated with a decreased likelihood of agreeing with a conservative statement about beliefs in gender equality. As mentioned, table 3 excludes the coefficients of the dummies that indicate an individual's own employment status and that of their partner. The analysis is conducted separately for men and women, with each sex divided into twelve groups depending on the employment status (employed, unemployed, or out of the labour force) of themselves and their partner. People who do not have a partner are their own group, only depending on their own sex and employment status. The odd ratios of each group agreeing with a statement is presented in table 4, with *unemployed men with unemployed partners* chosen as the base scenario against which the odd ratios are compared - this explains why there is no odds ratio for the upper left cell of the tables.

The results are colour coded for easier interpretability, where the greener a cell is, the lower is the percentage inside the column, which means that this group is less likely to agree to the statement stated above the table than an unemployed man with an unemployed partner.

It has to be mentioned at this point, that almost no coefficient of the group dummies was statistically significant. One reason for that might be the separation into 24 groups, which leaves less observations per group. The summary statistics for the different groups are shown in table 11 in the appendix. The other variables, such as regional unemployment and female labour force participation, age, marital status, the importance of religion, level of education, and sector of work are all significant at the 1% percent level, as presented in table 3. The number of children is only statistically significant for question two. An interesting observation is that on the individual level being employed in the service sector would lead to an increase in the odds of a person agreeing to the statement. Regional unemployment and female labour force participation have the same sign and magnitude as in the main regional analysis - an increase in one of those indicators would lead to a decrease in the likelihood of a person to agree. This strengthens the credibility of the regional results.

Looking at the results for men first, a difference between the first two questions and the third questions occurs. For the former two, it becomes visible that the opinion of men is reflected by the employment status of their partner, whereas for the last statement the own employment status seems more important. This makes sense, as the first two questions focus on the employment status of women (who on average are the partner of a man), whereas the last statement asks about men's position, or rank, on the labour market. Furthermore, men who are employed and/or have an employed partner tend to have more egalitarian views. For question one and two the difference of the own employment status is especially noticeable for the group without a partner. It might be of interest that the group of questions where the third one is asked, is focused on who should be preferred on the labour market. The chosen statement is about men and women, but the question asked before in the survey is about nationals and foreigners.

For the first two statements ("When a mother works for pay, the children suffer" and "A job is alright but what women really want is a home and children"), men with a partner who is not part of the labour force are the most likely to agree, thereby maintaining traditional

attitudes.

Furthermore, for the first question, men whose partner is unemployed are also more likely to agree than men whose partner is employed, who seem to have the most progressive opinions. That just shows that their beliefs in gender equality are mirrored by the fact that their partner is likely to be employed and is also in line with previous literature (Cha & Thébaud, 2009; Wilkie, 1993). Men without a partner are more likely to agree to a conservative statement if they are unemployed or not part of the labour force. This underlines the hypothesis that progressive beliefs about gender equality are a luxury good as men in secure situations are more likely to disagree. Men who do not fulfil the traditional breadwinner role seem to be more likely agree.

The second question shows that men who are not part of the labour force (retired, students, or housemen) tend to disagree more with the statement than men who are either unemployed or employed. The exception for both groups are men with a partner that is a part of the labour force. The same pattern as in question one occurs, where men in dual-earning couples show more progressive attitudes. Again, men without a partner but who are employed show the most progressive views, followed by unemployed men. Men who are not a part of the labour force and do not have a partner tend to be the second most likely to agree with this statement.

At the last statement, an interesting and clear pattern is observable. Unemployed men are the group that - independent of the employment status of their partner - agrees the most with the statement " *When jobs are scarce, men should have more right to a job than women*". That observation goes in hand with the theory of gender equality being a luxury good that decreases when - especially men - have to make sacrifices to maintain their progressive values (Boring & Moroni, 2021). It shows that in times of scarcity, beliefs about gender equality become irrelevant to the group that faces the scarcity. It is also interesting to observe that men who are not part of the labour force but whose partner is (either being employed or unemployed), disagree the most with the statement.

Looking at the answers of women, it becomes visible that for all three statements almost all groups for all questions are less likely to agree with any of the statements compared to an unemployed man with an unemployed partner. The exceptions are the group of women who are out of the labour force and have an unemployed partner for question one and two and employed women with an unemployed partner for question one. The unemployed status of the partner seems to be the common ground here. Furthermore apart from question one, unemployed and employed women tend to have similar opinions. These similarities/differences in trends between the questions could be due to the fact that the last two statements refer to the respondent - what she wants and what her position in the labour market is - while the first question refers to the well-being of their child.

For the statement on scarce jobs, there is agreement among women, that this should not be the case - no group has a higher likelihood than the reference group to agree.

Overall it is interesting to observe how men's preferences are coherent with the labour market participation of their partner, while for women it is rather a combination of their own and their partners employment status.

6 Robustness Tests

6.1 Clustered Standard Errors

As a robustness test the main analysis is repeated including clustered standard errors on the country level. An interesting aspect that appears by doing that is that not all standard deviations increase - some actually decrease. For example, with standard errors clustered on the country level the importance of religion becomes (more) statistically significant for two of the three models. This could be explained by the smaller variation between the standard errors of the countries, despite the decreasing number of observations. Since one might expect

Table 3: Odd Ratios of Control Variable in Logit Regression

	Child suffer	Women want	Men prio
Unemployment	0.955*** (0.004)	0.917*** (0.004)	0.953*** (0.005)
FLFP	0.949*** (0.002)	0.953*** (0.002)	0.940*** (0.002)
Age	1.007*** (0.001)	1.006*** (0.001)	1.013*** (0.002)
Nr. of children	1.005 (0.012)	1.097*** (0.013)	1.018 (0.015)
Marital status	1.163*** (0.059)	1.224*** (0.060)	1.221*** (0.088)
Religion important	1.398*** (0.039)	1.592*** (0.044)	1.434*** (0.054)
Middle Educ.	0.645*** (0.021)	0.909*** (0.031)	0.829*** (0.034)
High Educ.	0.499*** (0.021)	0.627*** (0.025)	0.509*** (0.031)
Blue Collar	1.450*** (0.049)	1.683*** (0.059)	1.682*** (0.073)
Service	1.127*** (0.045)	1.258*** (0.050)	1.465*** (0.077)
Constant	18.139*** (6.016)	25.285*** (8.744)	5.916*** (2.258)
Observations	26596	25994	27038

Exponentiated coefficients; Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Odds ratios for different groups

(1) *"When a mother works for pay, the children suffer"*

		Own			Own			
Partner	Men	Unempl.	Empl.	OOLF	Women	Unempl.	Empl.	OOLF
	Unempl.	/	1.11	1.26	Unempl.	0.92	1.31	1.82
	Empl.	0.69	0.73	0.67	Empl.	0.98	0.67	0.87
	OOLF	1.35	1.29	1.06	OOLF	0.53	0.76	0.66
	No Partn.	1.20	0.93	1.08	No Partn.	0.82	0.83	0.91

(2) *"A job is alright but what women really want is a home and children"*

		Own			Own			
Partner	Men	Unempl.	Empl.	OOLF	Women	Unempl.	Empl.	OOLF
	Unempl.	/	0.79	0.58	Unempl.	0.79	0.83	1.03
	Empl.	0.72	0.60	0.54	Empl.	0.72	0.57	0.80
	OOLF	1.05	0.92	0.80	OOLF	0.31	0.56	0.59
	No Partn.	0.95	0.79	1.04	No Partn.	0.55	0.71	0.82

(3) *"When jobs are scarce, men should have more right to a job than women"*

		Own			Own			
Partner	Men	Unempl.	Empl.	OOLF	Women	Unempl.	Empl.	OOLF
	Unempl.	/	0.93	0.24	Unempl.	0.53	0.71	0.45
	Empl.	1.17	0.61	0.45	Empl.	0.48	0.50	0.68
	OOLF	1.10	0.76	0.68	OOLF	0.50	0.50	0.56
	No Partn.	1.02	0.84	0.81	No Partn.	0.56	0.54	0.69

differences (e.g. in the importance of religion) between rural and urban areas, clustering the standard errors on the country level takes out the regional variation and therefore decreases the numerator of the equation for estimating the standard errors.

Using clustered standard errors on the country level do not affect the significance of the coefficient that measures the effect of the unemployment rate for the first question (still statistically significant at the 1% level) but reduces it for question two (statistically significant at the 5% level) and three (not statistically significant). For the coefficient of female labour force participation, the new results look similar: The coefficient of question one is still statistically significant at the 1% level, while it is not statistically significant for question two at all, and only at the 10% level for question three. For the demographic variables not too much is changing. Most of them stay not statistically significant. The coefficient of age, however, becomes statistically significant at the 5% level for question one and the coefficient for number of children at the 10% level for question three. For the coefficients on the sector of employment and education a few changes about the magnitude of the statistical significance occur, but the overall pattern stays the same and the coefficients that were statistically significant remain so in this specification. As mentioned above, the coefficient that measures the impact of the importance of religion gains statistical significance at the 1% level for question one and two.

6.2 Lagged Independent Variable of Interest

As described in the methodology section, the lags are included to control for reverse causality. The main regression is altered by separately including the lags of one, two, and three years. Looking at the tables the magnitude and direction of the marginal effects of unemployment are in line with the main analysis.

What is striking is that the marginal effects of the independent variable of interest (i.e.

Table 5: Main Analysis with Standard Errors clustered at the Country Level

	Child suffer	Women want	Men prio
Unemployment	-0.010*** (0.003)	-0.012** (0.004)	-0.004 (0.003)
FLFP	-0.009*** (0.003)	-0.005 (0.004)	-0.005* (0.002)
Age	-0.004** (0.001)	-0.001 (0.004)	0.000 (0.002)
Marital Status	-0.027 (0.110)	0.054 (0.059)	0.071 (0.082)
Nr. of children	0.069 (0.058)	0.010 (0.049)	-0.060* (0.033)
Blue Collar	0.063 (0.105)	0.084 (0.148)	-0.085 (0.112)
Service	-0.489*** (0.094)	-0.426** (0.161)	-0.108 (0.135)
Middle Educ.	-0.455*** (0.058)	-0.322*** (0.078)	-0.205* (0.102)
High Educ.	-0.509*** (0.116)	-0.454** (0.173)	-0.225*** (0.036)
Religion important	0.132** (0.047)	0.230*** (0.064)	0.054 (0.091)
Constant	1.405*** (0.143)	1.001*** (0.182)	0.570*** (0.155)
Observations	290	290	290

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

unemployment rate) is larger when exchanging the unemployment rate of year y with the one year lagged unemployment rate $y-1$. The coefficients for all three questions are statistically significant for the specification with a one year lag. For the first question it is only statistically significant at the 5% level (compared to the 1% level in the main analysis) but for the third question the one year lagged unemployment rate is statistically significant at the 1% level (compared to the 10% level in the main specification). The second question is statistically significant at the 1% level in both specifications, but the marginal effect of the one year lagged unemployment rate is larger than in the main specification. This can be interpreted as a learning effect: People internalise the unemployment rate rather slowly resulting in a delayed adaption of their attitudes towards gender equality.

For question two and three, the two year lag $y-2$ displays a slightly higher marginal effect compared to the main analysis. The statistical significance of all coefficients is the same as when the one year lag is included.

Including the three year lag of the unemployment rate leads to very similar results as including the two year lag. The marginal effect of the regional unemployment rate for question two and three stays exactly the same - also with respect to the statistical significance. The coefficient of question one decreases slightly in this specification but stays statistically significant at the 5% level. The other two coefficients are statistically significant at the 1% level. Overall, these results alleviate some concerns of reverse causality and suggest that the unemployment rate likely drives beliefs about gender equality.

Table 6: Main Analysis with one year lag of Unemployment Rate

	Child suffer	Women want	Men prio
Unemployment Lag 1	-0.011** (0.004)	-0.018*** (0.004)	-0.011*** (0.004)
FLFP	-0.018*** (0.006)	-0.014* (0.007)	0.009** (0.004)
Age	0.000 (0.003)	0.006 (0.005)	0.005** (0.003)
Marital Status	-0.010 (0.103)	0.063 (0.148)	0.131** (0.065)
Nr. of children	0.028 (0.068)	-0.137 (0.087)	-0.175*** (0.038)
Blue Collar	-0.013 (0.160)	0.146 (0.178)	0.080 (0.124)
Service	-0.352** (0.136)	-0.190 (0.175)	0.074 (0.120)
Middle Educ.	-0.373*** (0.116)	-0.257* (0.133)	-0.171* (0.095)
High Educ.	-0.457*** (0.129)	-0.318** (0.149)	-0.195* (0.114)
Religion important	0.148 (0.109)	0.363*** (0.133)	0.097 (0.076)
Constant	1.690*** (0.374)	1.379*** (0.430)	-0.281 (0.269)
Observations	212	212	212

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Main Analysis with two year lag of Unemployment Rate

	Child suffer	Women want	Men prio
Unemployment Lag 2	-0.009** (0.004)	-0.016*** (0.003)	-0.010*** (0.003)
FLFP	-0.018*** (0.006)	-0.014* (0.007)	0.009** (0.004)
Age	-0.000 (0.003)	0.005 (0.005)	0.005* (0.002)
Marital Status	-0.012 (0.104)	0.066 (0.146)	0.134** (0.065)
Nr. of Children	0.031 (0.067)	-0.138 (0.087)	-0.176*** (0.038)
Blue Collar	-0.020 (0.163)	0.125 (0.174)	0.066 (0.124)
Service	-0.347** (0.133)	-0.176 (0.171)	0.082 (0.118)
Middle Educ.	-0.377*** (0.116)	-0.275** (0.132)	-0.183* (0.098)
High Educ.	-0.454*** (0.129)	-0.315** (0.148)	-0.193* (0.113)
Religion important	0.144 (0.109)	0.363*** (0.134)	0.098 (0.075)
Constant	1.748*** (0.380)	1.401*** (0.415)	-0.271 (0.269)
Observations	212	212	212

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Regional Analysis with three year lag of Unemployment Rate

	Child suffer	Women want	Men prio
Unemployment Lag 3	-0.007** (0.004)	-0.016*** (0.003)	-0.010*** (0.003)
FLFP	-0.021*** (0.006)	-0.016** (0.007)	0.008* (0.004)
Age	0.000 (0.003)	0.007 (0.005)	0.006** (0.003)
Marital Status	-0.017 (0.104)	0.065 (0.139)	0.131** (0.065)
Nr. of children	0.028 (0.067)	-0.153* (0.085)	-0.183*** (0.039)
Blue Collar	-0.029 (0.167)	0.091 (0.175)	0.049 (0.120)
Service	-0.332** (0.131)	-0.137 (0.169)	0.105 (0.115)
Middle Educ.	-0.370*** (0.115)	-0.277** (0.130)	-0.180* (0.097)
High Educ.	-0.456*** (0.131)	-0.322** (0.145)	-0.196* (0.110)
Religion important	0.146 (0.109)	0.376*** (0.132)	0.103 (0.075)
Constant	1.843*** (0.373)	1.497*** (0.401)	-0.192 (0.259)
Observations	212	212	212

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

7 Discussion

Unemployment within the framework of the presented models can not explain the increase of people returning to more unequal beliefs about gender equality in the fourth wave of the EVS that took place at the beginning of the financial crisis (2008-2010) as it decreases the share of people agreeing to a conservative statement, *ceteris paribus*. But unemployment is only one side effect the crisis had. There were issues such as decreasing household incomes, increasing debt, and overall economic uncertainty, which may have each had distinct impacts on attitudes about gender equality. An interplay of all these factors could have led to a positive net effect, where positive means an increase in the share of people agreeing to conservative statements about gender equality.

As already discussed in the introduction, a possible explanation for the negative signs of the estimated coefficients of the unemployment rate might be the fact that a suddenly increasing unemployment - especially during the financial crisis - was prevalent in sectors that were male dominated. Therefore, women had to step in and become part of the paid labour force in order to secure the household income. This might have as a consequence that the percentage of people agreeing to one of the three statements decline, because it becomes more acceptable for women to be part of the paid labour force and therefore more progressive attitudes are formed. This would support the argument that forced social and economic change are the channel through which beliefs about gender equality are altered. Testing this hypothesis, however, is beyond the scope of this paper, which is exclusively investigating the effect of unemployment on beliefs about gender equality. Analysis of the channels through which this occurs, however, is open for future research. Looking at the individual results, it becomes visible that neither for men nor for women the individual unemployment status or the one of the partner seem to be a clear predictor of the chance to agree to a statement. However, a weak pattern occurs where the own unemployment status for men would rather - not in all cases - increase the likelihood of agreeing to a more conservative statement, men

with an employed partner being the exception. For women, being unemployed decreases the likelihood to agree. For the first two questions, however, women with an unemployed partner is the only group among them that have a higher chance to agree to a conservative statement than the reference group. For question three, the question that asks whether men should have more right to a job when jobs are scarce, the own employment status for men turns out to be a good predictor on which groups are more likely to agree. Unemployed men are the group that is most likely to agree to the fact that men should be favoured on a tight labour market.

8 Conclusion

Using stated preferences about gender equality from the European Value Study in the time span between 1999 and 2020, this paper finds that an increase in the unemployment rate leads to a decrease in the percentage of people agreeing with any of the three statements of interest. A one percentage point increase in the unemployment rate leads to a decrease in the share of population agreeing with a conservative statement about gender equality of between 0.4 and 1.2 percentage points, depending on the statement. The direction and magnitude of these results have been found to be similar when the analysis is conducted on the individual level. Furthermore, the findings are robust when clustering the standard errors on the country level (thereby allowing for correlation of the standard errors between the regions) and when switching the independent variable of interest (i.e. regional unemployment rate) with its lags.

Looking at the individual analysis, the regional unemployment rate also decreases the odds of a person agreeing with a conservative statement about gender equality. Furthermore, five main findings can be summarised. The first being that women in general are more likely to agree with egalitarian gender norms. Secondly, the only groups of women who are more likely to agree to a statement representing conservative gender norms than the

reference group (unemployed men with an unemployed partner) have the commonality of an unemployed partner. Thirdly, men who are in dual earning couples are more likely to show egalitarian views when it comes to questions on women's self-determination. The fourth finding shows that when it comes to their own rank on the labour market, unemployed men put themselves first and agree that they should be prefer men if jobs are scarce. The fifth finding is that men's preferences that are revealed through the statements seem to be coherent with the labour market participation of their partner, while for women it is rather a combination of their own and their partners employment status.

Overall, this paper tries to investigate the direction and magnitude the effect unemployment has on attitudes about gender equality. These results should be interpreted as correlations and not causal relationships. Following the specifications used, it appears that a higher unemployment rate decreases the amount of people agreeing with conservative statements on gender equality in a region. Furthermore, it seems to decrease the odds of a person agreeing to such a statement. Additional research focusing on the channels behind these findings would be interesting. This could include testing whether there has been "forced emancipation" due to the high proportion of male unemployment, thereby reducing the share of people agreeing with the statements. Another interesting aspect includes the influence of the other mentioned consequences (higher debt, lower household income, worse economic expectations about the future) of the financial crisis on gender norms, as it is crucial to be able to understand the rise of people agreeing with conservative gender norms that occurred in 2008. A higher share of unemployment, however, does not seem to be the driving factor behind that change.

References

- Akerlof, G., & Kranton, R. (2000). Economics and identity. *The quarterly journal of economics*, 115(3), 715–753.
- Blau, F. D., & Kahn, L. M. (2007). Changes in the labor supply behavior of married women: 1980–2000. *Journal of Labor economics*, 25(3), 393–438.
- Boring, A., & Moroni, G. (2021). *Turning back the clock: Beliefs in gender norms during lockdown* (tech. rep.). mimeo, Erasmus School of Economics.
- Cha, Y., & Thébaud, S. (2009). Labor markets, breadwinning, and beliefs: How economic context shapes men’s gender ideology. *Gender & Society*, 23(2), 215–243.
- Collischon, M., & Eberl, A. (2020). Let’s talk about fixed effects: Let’s talk about all the good things and the bad things. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 72(2), 289–299.
- EVS. (2022). Evs trend file 1981-2017. <https://doi.org/10.4232/1.14021>
- Fortin, N. M. (2005). Gender role attitudes and the labour-market outcomes of women across oecd countries. *oxford review of Economic Policy*, 21(3), 416–438.
- Goldin, C., & Katz, L. F. (2002). The power of the pill: Oral contraceptives and women’s career and marriage decisions. *Journal of political Economy*, 110(4), 730–770.
- Grimshaw, D., & Rubery, J. (2015). The motherhood pay gap: A review of the issues, theory and international evidence.
- Guiso, L., Sapienza, P., & Zingales, L. (2003). People’s opium? religion and economic attitudes. *Journal of monetary economics*, 50(1), 225–282.
- Heineck, G. (2004). Does religion influence the labor supply of married women in germany? *The Journal of Socio-Economics*, 33(3), 307–328.
- Hérault, N., & Kalb, G. (2020). Understanding the rising trend in female labour force participation. *Fiscal Studies*.

- Inglehart, R., Norris, P., Ronald, I., et al. (2003). *Rising tide: Gender equality and cultural change around the world*. Cambridge University Press.
- Iversen, T., & Rosenbluth, F. (2005). Gender socialization: How bargaining power shapes social norms and political attitudes. *Gender socialization: how bargaining power shapes social norms and political attitudes*.
- Jaumotte, F. (2004). Labour force participation of women: Empirical evidence on the role of policy and other determinants in oecd countries. *OECD Economic studies*, 2003(2), 51–108.
- Seguino, S. (2007). Plus ça change? evidence on global trends in gender norms and stereotypes. *Feminist Economics*, 13(2), 1–28.
- Stantcheva, S. (2022). *How to run surveys: A guide to creating your own identifying variation and revealing the invisible* (tech. rep.). National Bureau of Economic Research.
- Vella, F. (1994). Gender roles and human capital investment: The relationship between traditional attitudes and female labour market performance. *Economica*, 191–211.
- Wilkie, J. R. (1993). Changes in us men’s attitudes toward the family provider role, 1972-1989. *Gender & Society*, 7(2), 261–279.

9 Appendix

Table 9: Overview of the mean unemployment rate and the regions with the highest and lowest unemployment rate within a country

Country	Year	Mean Unemployment	Min. Region	Max. Region
Estonia	1999	11.6	11.6	11.6
	2008	5.5	5.5	5.5
	2018	5.4	5.4	5.4
France	1999	12.2	9.6	18.1
	2008	7.1	6.0	11.0
	2018	8.8	7.4	12.2
Iceland	1999	2.2	2.2	2.2
	2009	7.2	7.2	7.2
	2017	2.7	2.7	2.7
	2018	2.7	2.7	2.7
Italy	1999	13.0	3.8	28.1
	2009	8.1	3.2	13.8
	2018	12.1	3.9	21.6
	2019	9.0	4.0	20.0
Lithuania	1999	13.4	13.4	13.4
	2008	5.8	5.8	5.8
	2017	7.1	7.1	7.1
	2018	6.2	6.2	6.2
Netherlands	1999	3.7	2.6	8.4
	2008	3.7	2.7	5.9
	2017	4.9	2.9	7.2
	2018	3.9	2.7	5.5
Portugal	1999	5.0	2.5	7.3
	2008	7.7	5.6	9.0
	2020	6.8	5.7	8.4
Romania	1999	6.4	4.2	7.3
	2008	5.9	3.4	8.5
	2018	4.2	2.4	6.4
Slovakia	1999	16.1	7.0	20.5
	2008	9.7	3.4	13.2
	2017	8.3	4.2	12.0
Spain	1999	15.8	6.6	25.7
	2008	11.4	6.6	17.7
	2017	17.4	10.2	26.3
	2018	14.9	10.0	23.0
Sweden	1999	7.0	3.9	10.6
	2009	8.4	6.8	9.3
	2017	6.7	6.0	7.6
	2018	6.4	5.6	7.5

Table 10: Regional Analysis showing all coefficients included in the regression

	Child suffer	Child suffer	Women want	Women want	Men prio	Men prio
Unemployment	-0.004 (0.005)	-0.010*** (0.003)	-0.007* (0.004)	-0.012*** (0.004)	-0.002 (0.003)	-0.004* (0.003)
FLFP		-0.009*** (0.002)		-0.005** (0.002)		-0.005** (0.002)
Age		-0.004 (0.002)		-0.001 (0.003)		0.000 (0.002)
Married		-0.027 (0.084)		0.054 (0.168)		0.071 (0.059)
Nr. of children		0.069 (0.048)		0.010 (0.068)		-0.060 (0.037)
Blue Collar		0.063 (0.096)		0.084 (0.149)		-0.085 (0.106)
Service		-0.489*** (0.101)		-0.426*** (0.148)		-0.108 (0.115)
Unemployed		0.019 (0.128)		0.169 (0.225)		-0.034 (0.188)
OOLF		0.018 (0.113)		0.019 (0.166)		0.190* (0.109)
Leftover		0.132* (0.066)		0.069 (0.085)		-0.121* (0.061)
Middle Educ.		-0.455*** (0.085)		-0.322*** (0.100)		-0.205*** (0.077)
High Educ.		-0.509*** (0.119)		-0.454*** (0.137)		-0.225** (0.088)
Religion important		0.132 (0.090)		0.230* (0.117)		0.054 (0.081)
Constant	0.499*** (0.043)	1.405*** (0.130)	0.558*** (0.036)	1.001*** (0.184)	0.200*** (0.023)	0.570*** (0.159)
Observations	290	290	290	290	290	290

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Summary Statistics of the 24 groups in Wave 4 and 5

	mean	N of people	SD	N of observations	min	max
Wave 4 Women						
Empl. & Empl. P.	0.157	2,447	0.364	15,608	0	1
Empl. & Unempl. P.	0.005	82	0.072	15,608	0	1
Empl. & OOL P.	0.015	230	0.120	15,608	0	1
Empl. & No Partner	0.098	1,529	0.297	15,608	0	1
Unempl. & Empl. P.	0.011	175	0.105	15,608	0	1
Unempl. & Unempl. P.	0.002	26	0.041	15,608	0	1
Unempl. & OOL P.	0.002	24	0.039	15,608	0	1
Unempl. & No Partner	0.013	204	0.114	15,608	0	1
OOL & Empl. P.	0.044	691	0.206	15,608	0	1
OOL & Unempl. P.	0.002	33	0.046	15,608	0	1
OOL & OOL P.	0.067	1,048	0.250	15,608	0	1
OOL & No Partner	0.125	1,954	0.331	15,608	0	1
Men						
Empl. & Empl. P.	0.131	2,045	0.337	15,608	0	1
Empl. & Unempl. P.	0.007	104	0.081	15,608	0	1
Empl. & OOL P.	0.038	586	0.190	15,608	0	1
Empl. & No Partner	0.086	1,336	0.280	15,608	0	1
Unempl. & Empl. P.	0.005	81	0.072	15,608	0	1
Unempl. & Unempl. P.	0.001	23	0.038	15,608	0	1
Unempl. & OOL P.	0.003	47	0.055	15,608	0	1
Unempl. & No Partner	0.011	174	0.105	15,608	0	1
OOL & Empl. P.	0.012	191	0.110	15,608	0	1
OOL & Unempl. P.	0.001	12	0.028	15,608	0	1
OOL & OOL P.	0.071	1,112	0.257	15,608	0	1
OOL & No Partner	0.056	869	0.229	15,608		

	mean	N of people	SD	N of observations	Min.	Max.
Wave 5 Women						
Empl. & Empl. P.	0.150	2,632	0.357	17,590	0	1
Empl. & Unempl. P.	0.004	73	0.064	17,590	0	1
Empl. & OOL P.	0.014	253	0.119	17,590	0	1
Empl. & No Partner	0.100	1,767	0.301	17,590	0	1
Unempl. & Empl. P.	0.012	204	0.107	17,590	0	1
Unempl. & Unempl. P.	0.002	36	0.045	17,590	0	1
Unempl. & OOL P.	0.001	20	0.034	17,590	0	1
Unempl. & No Partner	0.014	253	0.119	17,590	0	1
OOL & Empl. P.	0.036	636	0.187	17,590	0	1
OOL & Unempl. P.	0.002	41	0.048	17,590	0	1
OOL & OOL P.	0.071	1,246	0.257	17,590	0	1
OOL & No Partner	0.126	2,211	0.332	17,590	0	1
Men						
Empl. & Empl. P.	0.129	2,272	0.335	17,590	0	1
Empl. & Unempl. P.	0.007	126	0.084	17,590	0	1
Empl. & OOL P.	0.030	534	0.172	17,590	0	1
Empl. & No Partner	0.086	1,510	0.280	17,590	0	1
Unempl. & Empl. P.	0.005	81	0.068	17,590	0	1
Unempl. & Unempl. P.	0.002	32	0.043	17,590	0	1
Unempl. & OOL P.	0.003	51	0.054	17,590	0	1
Unempl. & No Partner	0.017	294	0.128	17,590	0	1
OOL & Empl. P.	0.015	260	0.121	17,590	0	1
OOL & Unempl. P.	0.001	18	0.032	17,590	0	1
OOL & OOL P.	0.072	1,259	0.258	17,590	0	1
OOL & No Partner	0.063	1,103	0.242	17,590	0	1

Table 12: Individual Analysis - Odd Ratios

	Child suffer	Women want	Men prio
Unemployment	0.955***	0.917***	0.953***
FLFP	0.949***	0.953***	0.940***
Age	1.007***	1.006***	1.013***
Nr. of children	1.005	1.097***	1.018
Married	1.163***	1.224***	1.221***
Religion important	1.398***	1.592***	1.434***
Middle Education	0.645***	0.909***	0.829***
High Education	0.499***	0.627***	0.509***
Blue Collar	1.450***	1.683***	1.682***
Service	1.127***	1.258***	1.465***
Women			
Employed & Employed P.	0.674	0.574*	0.500**
Employed & Unemployed P.	1.311	0.829	0.571
Employed & OOL P.	0.761	0.561*	0.497*
Employed & No Partner	0.833	0.706	0.539*
Unemployed & Employed P.	0.983	0.718	0.484*
Unemployed & Unemployed P.	0.916	0.791	0.533
Unemployed & OOL P.	0.532	0.314**	0.497
Unemployed & No Partner	0.816	0.551*	0.563
OOL & Employed P.	0.868	0.798	0.679
OOL & Unemployed P.	1.820	1.033	0.452
OOL & OOL P.	0.663	0.588*	0.557*
OOL & No Partner	0.909	0.823	0.685
Men			
Employed & Employed P.	0.726	0.596	0.607
Employed & Unemployed P.	1.112	0.787	0.927
Employed & OOL P.	1.292	0.919	0.763
Employed & No Partner	0.926	0.788	0.842
Unemployed & Employed P.	0.688	0.719	1.172
Unemployed & OOL P.	1.346	1.047	1.104
Unemployed & No Partner	1.202	0.953	1.021
OOL & Employed P.	0.666	0.538*	0.451**
OOL & Unemployed P.	1.257	0.575	0.242**
OOL & OOL P.	1.054	0.795	0.684
OOL & No Partner	1.075	1.038	0.805
Observations	26596	25994	27038

Exponentiated coefficients

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$