The influence of social policies on attitudes and behavior in times of rising inequalities and climate change

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This acknowledgement can be read as a personal introduction to the dissertation, as the motivation for this dissertation not only stemmed from an identified research gap, but was also personal. With this PhD thesis, I was able to deal with political issues that I have been interested for since childhood. Growing up in a working-class family surrounded by classmates from entrepreneurial families exposed me early on to neoliberal ideas and especially their limits. That inequalities must be addressed structurally and cannot be solved individually, was an early lesson. “The main force in favor of greater equality has been the diffusion of knowledge and skills” (Piketty 2014: 20). Being the one child out of 100 non-academic children to get the chance to write a doctoral thesis (Hochschul-Bildungs-Report 2020) doesn't honor me, it shows that background has a significant impact on future opportunities and capabilities. It is pure luck that I have had a generous mother, inspiring friends and a motivating partner.

Moreover, as a child I was already involved in environmental protection projects and realized on my travels how much inequalities and the climate crisis are interrelated and how only integrated mitigation strategies for both crises can lead to just and effective solutions. With this dissertation, I aim to sharpen my and the readers’ view to see the interdependencies of different crises and the central role of social policies in them. I argue that the course of the two largest crises - rising inequalities and the climate change - largely depend on the social security systems we have and how they develop and react to these social and environmental threats. I am more than happy that I achieved the personal goal of dealing with this socially relevant issue on how to bring solutions to these two largest societal crises together in this dissertation. This would never have been possible without the help of the following people.

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List of Abbreviations

AfD	Alternative for Germany
API	Application Programming Interface
BI	Basic income
CAPI	Computer assisted personal interview
CEEC	Central and Eastern European Countries
CO2	Carbon dioxide
DF	Danish People's Party
EU	European Union
EVS	European Values Study
FPÖ	Austrian Freedom Party
GDP	Gross domestic product
GSEM	Generalized structural equation model
ISSP	International Social Survey Programme
KESK	Centre Party in Finland
KD	Christian Democrats in Finland
KOK	National Coalition Party in Finland
LGBTIQ+	Lesbian, gay, bisexual, transgender, intersecxual queer and/or questioning.
MP	Member of Parliament
OECD	Organization for Economic Cooperation and Development
PEB	Pro-environmental behaviour
PM	Prime Minister
PS	Finns Party in Finland
RKP	Swedish People's Party in Finland
SDP	Social Democratic Party in Finland
UK	United Kingdom
US/USA	United States/Untited States of America
VAS	Left Alliance in Finland
VIHR	Green League in Finland

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1 Introduction

Social inequality threatens democracies, hampers economic growth (Kaldor 1956), is associated with higher corruption (Policardo et al. 2019), weakens social cohesion (Letki 2008; Pickett and Wilkinson 2009), political participation (Goubin 2018; Nishi et al. 2015), increases political polarization (Dorn et al. 2018; Han 2015) and has negative interdependencies with climate change (Islam and Winkel 2017). This is why reducing social inequality is a main political goal. In many regards, however, OECD countries have witnessed an unprecedented increase in various economic and social disparities (e.g., Atkinson 2015), accompanied by a growing awareness of the urgent need to address the impacts of climate change. In more than half of the OECD countries, income inequality is higher today than it was in the mid-1980s (Bourguignon 2018). In OECD countries, the average income of the richest 10 percent of the population is about nine times that of the poorest 10 percent (OECD 2011). Besides income inequality, other social inequalities are increasing or stagnating: e.g., gender inequalities still persist in all areas of social and economic life (OECD 2017). Overall, social inequalities between and within OECD countries are increasing or stagnating and it remains not only an open (political) question how to reduce them (Atkinson 2015), but also which various consequences social inequality can have. This PhD thesis aims to contribute to filling the latter gap by examining the relationship between welfare policies and individuals' attitudes and behavior. A special focus lies on economically disadvantaged and vulnerable groups such as single mothers, the unemployed or the working class.

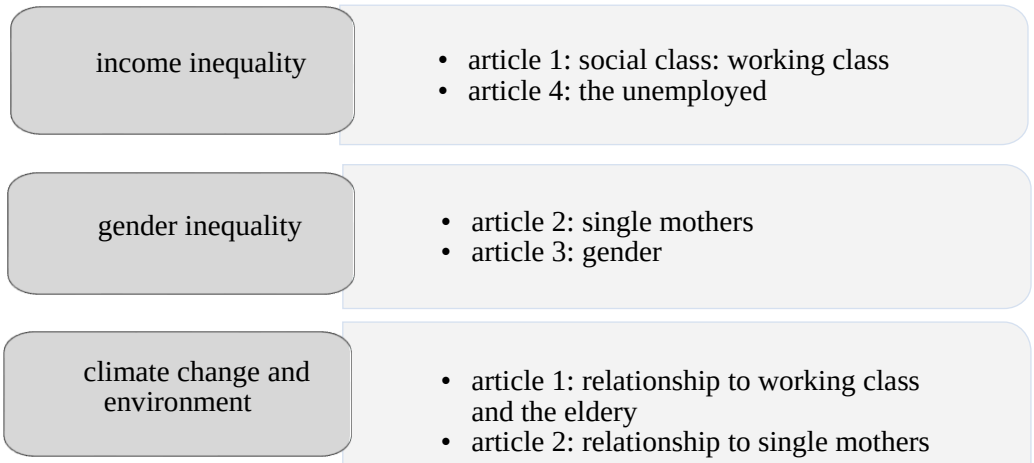
While the phenomenon of social inequalities is often understood and measured as a one-dimensional concept, with a focus primarily on income inequality, it becomes more and more important to consider its multidimensional facets which also allows for more tailored policy solutions. Inequality can vary in terms of gender, social class, ethnicity, age, wealth or income, and even the measurement of the forms can vary. Economists tried to untangle the variety of inequality forms by differentiating them into income inequality[1], wealth inequality and inequality of opportunities. While the first two – income and wealth inequality – are easily measurable as inequality of outcomes, the latter requires much micro data to find out whether it results from circumstance or effort. For instance, research gathered information on the scope of unequal access to education due to birth-related circumstances as race or gender (Checchi et al. 2010; Ferreira and Gignoux 2011). Inequality of opportunities, meaning inequality due to birth and exogenous circumstances, is the one that is mostly considered as unfair and where

[1] Income is mostly measured as disposable equivalised household income.

redistribution, e.g., through social policies, is used for levelling the playing field. Inequality of opportunities, e.g., due to gender, social class or ethnicity, can be captured as a component of income or wealth inequality. Tackling inequality of opportunities can therefore reduce income and to a lower degree wealth inequality[2]. However, "reducing one type of inequality would not necessarily reduce others" (Blackburn 2008: 256). For instance, if country A has high income inequality due to lower opportunities for women, universal and generous work-family policies are able to increase female labor market participation and therefore are likely to reduce income inequalities, while country B with high income inequality due to lower inter-generational mobility needs to address the equal access to higher education to reduce inequality between social classes and decrease overall income inequality. This highlights that focusing on inequality of opportunity contributes to the study of consequences and policy solutions where this thesis starts.

Taking the different forms of inequality into account, the European Commission identified six areas of special concern: income inequality, digital divide, education, health and nutrition, gender inequality as well as climate change and environment (European Commission 2023). This dissertation deals with three of them: income inequality, gender inequality and climate change and environment (see Figure 1.1.).

Figure 1.1. Social inequality dimensions and the affected vulnerable groups in the four articles



Notes: Own illustration

While there already exists a lot of research on the drivers of rising inequality (e.g., Piketty and Saez 2003; Tridico 2018), this dissertation deals with the potential consequences reducing

[2] Wealth inequality is only dealt with in a rudimentary way in social policy research, as the instruments to tackle it are primarily rooted in the tax system, such as the wealth tax or inheritance tax. Since social policies primarily aim to create income security, wealth inequality is neglected in the following.

social inequalities can have at the individual level. As opportunities are unequally distributed among the population, it is likely that these inequalities are associated with differences in key political and environmental attitudes and behavior. The research focus is placed on vulnerable groups as they suffer the most from high social inequalities which should influence their attitudes the most (e.g., Bord and O'Connor 1997 on vulnerability and climate attitudes). However, it is expected that social policies play a crucial role in shaping public attitudes and behavior, therefore moderate the negative consequences social inequalities might have on disadvantaged groups. More precisely, the thesis examines the extent to which social policies can mitigate or exacerbate negative attitudes towards gender equality and environmental protection especially among vulnerable groups, and how these policies can foster more positive attitudes towards sustainable development and social equality. Since extraordinary times require extraordinary policy solutions, the dissertation also looks at welfare experiments as a tool for evidence-based policy making. As the basic income is often framed as a social policy to reduce various social inequalities, it is interesting to learn about politicians' actual interest to implement it. All in all, this PhD thesis analyzes empirically how social risks influence attitudes and behavior, how social policies mitigate this relationship and how welfare experiments are framed by politicians in the public discourse.

By looking at individual and context factors, the thesis contributes to a deeper understanding of the effects of social inequalities and social policies. Furthermore, it contributes to our understanding of how social policies can promote sustainable development and social equality by shaping public attitudes and behavior. The practical relevance of the thesis is to inform policy debates and practices aimed at promoting more sustainable and equitable societies (for a more detailed discussion of the thesis' contributions, see section 1.4).

The thesis locates itself into newer adaptions of welfare state research by focusing on a micro-level approach and by integrating research on attitudes and behavior with policy studies. The literature strand on welfare state research deals with the question of how social policies redistribute inequalities of opportunities, or put differently, life chances and social risks (Häusermann 2018). This thesis combines welfare state research with two related research areas: policy studies and research on attitudes/behavior. The latter "studies the political cognitions, affects, value orientations and behavioral intentions of people as well as the determinants and consequences of these orientations on the individual and aggregate levels" (Gabriel et al. 2020: 31, own translation). A lot of research articles use attitudes as explanatory variables, most prominently the civic culture study from Almond and Verba (1980) who argue that the beliefs of citizens cluster between nations and influence the survival and legitimacy of

different democratic regimes. However, attitudes are also a central determinant of behavior (Ajzen 1991), including individuals' decision-making as, e.g., voting behavior. Therefore, referring to the first sentences of the introduction, studying attitudes provides a good opportunity to link the macro-level phenomena of rising inequality, with those of worsening climate change. If vulnerable groups have pro-environmental attitudes and engage in pro-environmental behavior when social policies are generous, both, rising inequalities and aggravating climate change are more likely to be reduced/halted. In this introduction, I provide arguments on why it is important to link these topics and on the advantages of this analytical point of view.

The country samples studied empirically in the four articles of this dissertation refer to industrialized, established democracies that are members of the OECD or the European Union (EU). Even though all four articles touch on the broader themes of social policy, attitudes, and vulnerable groups, the dissertation can be divided into two parts: while the first two papers deal with the welfare-environment nexus, by asking **how economically deprived groups can be motivated for climate action through generous social policies** (see chapter 3 and 4), the last two papers deal with backlashing and with the unexpected consequences reducing inequalities and testing new social security systems can have (see chapter 5 and 6). Chapter 5 asks **how reducing gender inequalities affects political orientation,** while chapter 6 – assuming that rising social inequalities require thinking of new social solutions – tests **whether welfare experiments provide a suitable policy instrument for evidence-based policy making in times of rising inequalities.** These overarching research questions are divided into the following research questions per study:

Chapter 2 analyzes the moderating effect of generous social policies on the willingness for environmental action of the elderly and the working class as economically deprived groups. The chapter asks whether and how the welfare state can affect policy preferences and individual actions of insecure groups to protect the environment.

Chapter 3 joins this perspective by adding the gender perspective to this puzzle and asking, firstly, whether single mothers are less likely to show pro-environmental behavior than partnered mothers, and secondly, whether work-family policies moderate the likelihood of single mothers to engage in such behavior.

Chapter 4 focuses on the potential backlash promoting gender equality can have on the far-right orientation of men. More specifically, the chapter explores to what extent the political and socio-economic promotion of women is associated with the gender gap in far-right political orientation, and whether attitudes toward gender equality moderate this gender gap.

Chapter 5 analyzes a specific policy, the basic income, as it is considered as an alternative to the prevailing, predominant welfare state system in OECD countries. Here, the welfare experiment in Finland is analyzed to investigate whether welfare experiments are a policy instrument of evidence-based policy making or whether they serve different strategic functions.

To gain a better understanding of the underlying theoretical, methodical and empirical connections and differences between the four studies, I provide the following background for the papers within this introduction: in paragraph 1, I situate the dissertation in the existing, relevant literature by defining core concepts. In paragraph 2, I present the theoretical, methodical and empirical approaches, before I summarize the four articles briefly. In the last paragraph 4, I present the main contributions of the thesis.

1.1 Central concepts

The **attitudinal and behavioral** consequences of rising **social inequalities** and the moderating role of **social policies** are the central theme of this thesis. Consequently, I elaborate in more detail on the concept of social inequality[3] and associated terms, social policies and welfare state, and attitudes and behavior.

Social inequality is defined as "the condition where people have unequal access to valued resources, services, and positions in the society" (Kerbo 2003: 11). These institutionalized, structural disparities between individuals can be based on various dimensions, as explained in the last section (Binelli et al. 2015). This understanding of social inequality matches the social stratification concept of Max Weber (1922/1968) who posits that *structural* inequalities prevail in social relationships based on *institutional* grounds. Thus, it is important to differentiate institutionalized/structural from individual inequality as only the former captures disparities that are "systematically created, reproduced, legitimated by sets of ideas, and relatively stable" (Hurst et al. 2017: 4). Therefore, the dissertation puts an emphasis on birth-related circumstances, as, e.g., gender, but also other inequalities of opportunities, for instance long-term unemployment. Considering that such inequalities are unfair from a normative perspective, the thesis connects to the capabilities approach of Amartya Sen (1992), which posits that the core moral in societies is the real freedom to achieve. This means that individuals not only formally, but de facto have the "opportunity to pursue [their] objectives" (Sen 2009:

[3] I focus on social inequality instead of poverty due to the following reasons: Poverty, understood as the exclusion from social life due to the lack of resources (Townsend 1979; Nolan and Ive 2012), is an aspect of economic inequality and therefore captures mainly income inequality and only to a lower extent, rather as a consequence, inequality of opportunities. As this thesis relies not only on economic inequality factors, as for instance gender, the poverty concept is less central to the dissertation.

228). By doing so, the thesis connects not only to social justice but also environmental justice literature, whose arguments are discussed in section 1.4 (Contributions).

Providing a complete overview of different inequality concepts is beyond the scope of this thesis as the literature on social inequalities is immense (for an overview, see Hurst et al. 2017). Nevertheless, two central conceptual distinctions should be addressed: first, it is important to differentiate between subjective/perceived and objective/observable social inequalities, because they differ empirically (Gimpelson and Treisman 2018; Weisstanner and Armingeon 2022) and the difference also matters for this thesis. The reciprocal relationship between both is looked at in study 3 (chapter 4), where the perceived relative deprivation of men – who still are advantaged/have more opportunities in all social and economic life areas (OECD 2017) – leads men more frequently to have a far-right orientation than the de facto still disadvantaged group of women whose real opportunities still lack behind.

Second, as the term "inequality" implies a social continuum between better-off and worse-off individuals (Blackburn 2008), it is crucial to stress that this thesis only focuses on vulnerable groups. This selection is reasoned with the core task of welfare states to reduce social insecurities by providing a preventive and curative social security system (Barr 2001; Dryzek and Goodin 1986; Esping-Andersen 1990). As the thesis looks at the moderating and explanatory role of social policies, I focus on economically disadvantaged groups that are primarily targeted by social policies.

In the four articles, I rely on the terms **economically deprived, economically disadvantaged** and **vulnerable** groups. Individuals who fall into these categories are characterized by lower opportunities due to factors outside their control. Vulnerability corresponds to the exposure to various harms - as risks, shocks and stress - and the "lack of means to cope without damaging loss" (Chambers 1989: 1). As such, vulnerability can be considered as an umbrella term here. In the four articles, I rely on arguments based on *economic* risks, for instance labor market risks or work-family imbalance (see "Theoretical arguments" in chapter 1.2.1). The term "economic disadvantage" expresses actual, experienced inequalities. In contrast, economic deprivation is connected to the literature of relative deprivation, which emphasizes that feelings of losing and not necessarily actual losing leads to certain behavioral outcomes (Gest et al. 2018; Rydgren 2013). I chose specific terms and definitions depending on the article, the underlying group of interest and argument. For instance, in article 3 (chapter 4) I rely on economically deprived groups to describe feelings of neglect that men potentially have in reaction to a stronger political and socio-economic promotion of women.

From the population of all social groups, I focus on **social class**, more precisely **working class**, **gender** and single mothers, the **elderly** and the **unemployed**. I rely on a concept of social class that was originally proposed by Max Weber (1922/1968), referring to the idea that individuals with similar levels of education, income and occupation can be grouped into relatively homogenous classes. By doing so, groups in society can be divided into a hierarchical structure. As social class is created "by social relations in labour markets and production units" (Goldthorpe 2010: 733) it is a core category for the understanding of social inequality. The thesis focuses on working class because this class is especially threatened by technological change and globalization (Goos et al. 2014; Hugrée 2020) and its members have become so-called labor market "outsiders" characterized by lower job security and less protection from social security nets in many industrialized countries (Rueda 2006; Schwander 2019). Members of **the working class** are employed in manual or entirely routine nonmanual work and their occupation therefore faces high risks of automatization and moving away to low-wage countries. As a result, this class position is highly correlated with unemployment (Goldthorpe and McKnight 2006; Lucchini and Schizzerotto 2009). As working-class men are four times more likely to be long-term unemployed than men in salaried professional or managerial employment (Goldthorpe 2010), and since the unemployed require state compensation for their income loss, the thesis also looks at the **unemployed** as another vulnerable group. In addition, two other social characteristics are investigated: first, gender inequalities are analyzed in paper 2 (chapter 3) and 3 (chapter 4). **Gender** is a "cultural construct" (Caplan 1987) in contrast to sex, which refers to biological differences between men and women. Since my reasoning is based on behavior, social norms and different social and economic positions of women and men, the socially constructed, cultural term of gender is more suitable to identify this group of interest. Women face different vulnerabilities: for instance, in OECD countries, at least 20 percent of women work part-time which results in lower economic resources, well-being and pension entitlements (Warren 2008). Social class and gender are interlinked: for example, the division of unpaid labor within households and across countries is a gender and a class issue (McGinn and Oh 2017). Gender inequalities also depend on the social class women belong to (for an overview to intersectionality, see Browne and Misra 2005). Due to these interlinkages and the increased visibility and discussion of gender inequalities, this thesis focuses - besides social class and the unemployed - also on gender. One of the greatest risks for vulnerability for women is becoming a single mother. Those face one of the highest poverty risks in EU member states (European Commission 2019). As a result, I look at this particularly economically disadvantaged group in paper 2 (chapter 3). Second, I look at the elderly in paper 1 (chapter 2).

Old-age poverty is increasing in many industrialized countries (Ebbinghaus et al., 2019), making this group increasingly vulnerable. Besides, age is an interesting variable to test whether theoretical reasonings based on economic risks or cultural and value-based issues play a more important role to understand behavior (see, e.g., Tilley and Evans 2014). As this thesis also deals with the change to postmaterialist norms and values (Inglehart 1977), age is an important identifier to test theoretical arguments rigorously.

Social policy is defined as a "policy that intervenes in society and the economy both to redistribute material resources between classes and to safeguard against social risks" (Häusermann 2018: 3). Against which social risks social policy protects, and which policy instruments are used for, varies between countries and depends on political decisions. Esping-Andersen (1999) differentiates three kinds of social risks with separate redistributive logics: life-course risks, inter-generational risks and class risks. Against all three kinds of social risks welfare states offer a certain degree of protection, mainly through taxes and transfers. While the emphasis was put on the protection against classical social risks during the time of welfare state establishment in industrial age, such as lack of income due to old age, sickness and unemployment (Bonoli 2006; Pateman 1988; Taylor-Gooby 2005), most OECD countries shifted towards "capacitating fairness" (Dworkin 1981; Sen 1992) and new social risks, as care-taking duties or motherhood, in the 2000s (Hemerijck 2013; Morgan 2013). This shift is mainly reasoned with the replacement of the male breadwinner model (Häusermann 2018), which is debated in more detail in study 3 (chapter 4). The welfare state "constitutes a set of institutions, socioeconomic policies, and cultural attitudes that determine the dimensions and strength of a society's social safety net" (Briggs 2000: 16). As such, the welfare state is understood as the structure in which social policies are embedded. Table 1.1. categorizes different social risks according to Esping-Andersen (1999) and how the social policies, that are looked at in this PhD thesis, can be classified according to this categorization.

Table 1.1. Overview of different social risks investigated in this dissertation

	Life-course risks	**Inter-generational risks**	**Class risks**
Old risks		Pension replacement rate (article 1/chapter 2)	
New risks	Work-family policies (article 3/chapter 4 and article 2/chapter 3)		Long-term unemployment (article 4/chapter 5)

Notes: own illustration, types of social risks are based on Esping-Andersen (1999)

Last but not least, I define attitudes and behavior as the dependent variables of the articles. **Attitudes** are understood as "[latent] disposition[s] to respond favorably or unfavorably to an

object, person, institution or event" (Ajzen 1988: 3). The focus is placed here on political attitudes, for instance left-right orientation (article 3), and environmental attitudes, as, e.g., preferences towards energy transformation (article 1). Behavior needs to be differentiated from behavioral intentions that are often asked for in surveys. Political behavior subsumes all observed or reported participation in the political process, with some acts being more easily regarded as political, as, e.g., voting (article 3), than others, as, e.g., political consumerism (Stolle 2005). Next to political behavior, I also look at pro-environmental behavior, defined as "behavior that is undertaken with the intention to change (normally, to benefit) the environment" (Stern 2000: 408). Table 1.2. summarizes how these concepts are operationalized through variables and which role social policies and social inequality play in the individual papers.

Table 1.2. Variables, social inequality and social policies

Title	**Chapter 2/Article 1:** The welfare state and support for environmental action in Europe	**Chapter 3/Article 2:** On the moderation effect of work-family policies on pro-environmental behaviour of single mothers	**Chapter 4/Article 3:** Backlash by men against the socio-economic and political promotion of women in Europe	**Chapter 5/Article 4:** Welfare experiments as tools for evidence-based policy making?
Dependent variable(s)	Pro-environmental attitudes and behavior	Pro-environmental behavior (PEB)	Gender gap in far-right orientation and voting	Not applicable[4]
Independent variable(s)	Working class and the elderly	Single mothers	Socio-economic and political promotion of women (four indicators)	Not applicable
Vulnerable group of interest	Working class and elderly	Single mothers	Economically and culturally deprived men	The unemployed (as affected group of the welfare experiment)
Role of social policies	Independent and moderating variables (welfare state generosity and pension replacment rate)	Moderating variables (work-family policies)	Independent variables (political and socio-economic promotion of women)	Subject of investigation (basic income trial)
Findings regarding inequality and redistribution	The working class and elderly are more likely to engage in environmental	Single mothers are more likely to engage in PEB if work-family	Reducing gender inequalities can have adverse/ negative effects on voting behavior	Welfare experiments are no scientific tool for evidence-based policy making, but

[4] As article 4/chapter 5 formulates descriptive hypotheses for an explorative research design, it is not possible to differentiate between independent and dependent variable(s).

	action if social policies are generous	policies are generous	have various political functions

Notes: own illustration

1.2 Theoretical, methodical and empirical approaches

1.2.1 Theoretical arguments

In the following, I present both, the main theoretical arguments that connect the papers and the theoretical claims that differ between the papers. The papers have in common that they aim to explain political and environmental attitudes and behavior, which is why I focus on theoretical explanations of their formation. All four papers have two theoretical arguments in common: first, individuals are led by the utilaristic claim to realize their preferences and maximize their benefits. Second, individual attitudes and behavior are influenced by the political and socio-economic structures, more precisely the social policies to which individuals are (not) entitled (see also Figure 1.2). These two arguments stem from comparative political economy, or more precisely, the strain on welfare state research.

The *first* empirical claim is about the rational nature of individuals' reasoning. It is assumed that self-interest and individual utility maximization are central motives for individual attitudes and behavior (Meltzer and Richard 1981; Trüdinger 2020: 319). Thus, there is a direct relationship between the own social position and political and environmental attitudes as well as behavior (D'Anjou et al. 1995). Self-interest is not only understood as being monetary, also other grounds, as, e.g., being reelected are considered here. Self-interest also does not necessarily have to refer to a benefit experienced by the individual him/herself. Also, the well-being of the own children can be subsumed under this term. As vulnerable groups face to a higher extent economic risks, these risks are central for the own social position and to the explanation of individuals' attitudes and behavior. Former literature has shown that the variation in economic risks are unequally distributed between secure and insecure groups and lead individuals to adopt distinct attitudes, e.g., policy preferences (Blekesaune and Quadagno 2003; Bojar and Vlandas 2021; Busemeyer and Garritzmann, 2017; Iversen and Soskice 2001; Kittel et al. 2017; Vlandas and Halikiopoulou 2019). For instance, individuals with low incomes and of lower social classes are more likely to prefer income redistribution than individuals with better social positions (Svallfors et al. 2012; Schöneck and Mau 2015). In the following chapters, I theorize on different self-interests: chapter 2 argues that economic self-interest due to higher economic risks as being working class and elderly leads to lower engagement in pro-environmental action. Chapter 3 makes the stance that single mothers are interested in the well-

being of their offspring and therefore are more likely to engage in pro-environmental behavior (PEB) if social policies distribute the resources required for PEB to them. Chapter 4 argues that socio-demographic characteristics might lead to varying self-interests: having a certain gender might result in the desire to maximize the political and socio-economic representation and state resources of/to this gender. Chapter 5 looks at politicians whose self-interest is rooted in the interest of being re-elected (see also literature on vote, office and policy-seeking (Strøm 1990)). Being interested in re-election, they use the basic income trial for strategic reasons, e.g., to publicly advertise their understanding of fairness or to embed the trial in the persisting welfare paradigm.

While the assumption of utilitarian, self-interested individuals is not tested directly in the dissertation, I provide some first evidence for the mechanism. In paper 1, we test whether the inability to pay bills, as an indicator for economic risk, leads the working class and the elderly to be less likely to engage in pro-environmental behavior, arguing that such a behavior requires more financial resources than, e.g., conventional consumption. In article 3, self-interest is not as directly visible as in article 1 and 2. Here, it is argued that men are more likely to have a far-right orientation than women because they do not benefit from the political and socio-economic promotion of women that have been supported by leftist but also conservative political parties in the last decades. As a result, they opt for far-right political parties that are known for putting the utilities of men in focus by restoring classical societal gender separation (Santos and Roque 2021). Here, self-interest explains cultural norms, thus having social-conservative attitudes serves the self-interest of preferring men in social and economic life. This mechanism of self-interest is captured by interaction terms. In article 4, where the functions of welfare experiments are analyzed through Finnish politicians' debate on Twitter, self-interest also plays a key role. We argue that the welfare experiment was not used to gain scientific evidence, but has rather been considered as an opportunity for Members of Parliament to debate on how social security should be shaped and how welfare paradigms are to be understood. Because Members of Parliament are interested in re-election, they continue to promote their own position on basic income on Twitter, also to gain visibility, even though there is no further empirical evidence yet. To sum up, individuals' attitudes and behavior is to a large extent explained by self-interest.

Second, this dissertation argues that social policies matter for attitudes and behavior. On the one hand, they can have direct resource and interpretative effects: Generous welfare states provide a safer position for individuals by satisfying their short-term material needs (Campbell 2012; Pierson 1994). By giving them the resources otherwise lacking, individuals are for example more able to focus on long-term and more 'post-material' concerns (Inglehart 1981)

as pro-environmental behavior (see article 1 and 2). Moreover, social policies have interpretative effects by informing the public about civic standing, group deservingness, and the nature of social problems (Schneider and Ingram 2005; Soss and Schram 2007). Thus, work-family policies that promote women can impact political orientation of men who are not targeted by these policies and develop feelings of being politically neglected (see article 3). Article 4 shows that not only specific, material social policies matter for attitudes, but also the underlying welfare state paradigm. As welfare states in industrialized countries have placed the emphasis on activation, this paradigm informs politicians on how they need to frame the basic income trial to find supporters and opponents. Defining social policies as independent variable that shape "mass politics" connects this thesis to Lowi (1972), Schattschneider (1935) and Pierson (1994) as early pioneers of the policy feedback theory. Therefore, I assume that "policies, once enacted, restructure subsequent political processes" (Skocpol 1992: 58), focusing here on the effects of social policies on public attitudes and behavior as well as on framing strategies of politicians in the political debate.

On the other hand, social policies can have indirect effects on political and environmental attitudes and behavior by moderating the aforementioned economic risks. As income and labor market risks are not distributed equally across social groups, the welfare state does not affect them in a similar way (Sørensen 2000). Here, it is argued that social policies moderate individual economic risks by mitigating the level of economic insecurity. As the thesis focuses on vulnerable groups that are less likely to engage in pro-environmental behavior due to financial constraints or are more likely to vote for far-right parties due to feelings of political neglect, this moderating effect is especially interesting as social policies enable (paper 1, 2) or unable (paper 3) individuals to engage in certain political behavior they otherwise would not engage in. Already Dryzek and Goodin (1986) connect social risks/insecurity and the social security system by stating that "when a large proportion of the population is profoundly unsure what its relative standing in the future society will be, then […] institutions for promoting social justice serve self-interest as well" (Dryzek and Goodin 1986: 9). Thus, even though social policies are institutional strategies for social risks sharing, these social risks are not distributed equally among social groups. Groups with higher vulnerability and higher exposure to economic risks and insecurity are more likely to be influenced by a social security system on which they depend on.

All four articles have these two theoretical claims in common. In addition, two additional theoretical arguments are developed to grasp better the unintended consequences welfare states can have (second part of the dissertation (article 3 and 4)). The second theoretical claim – social

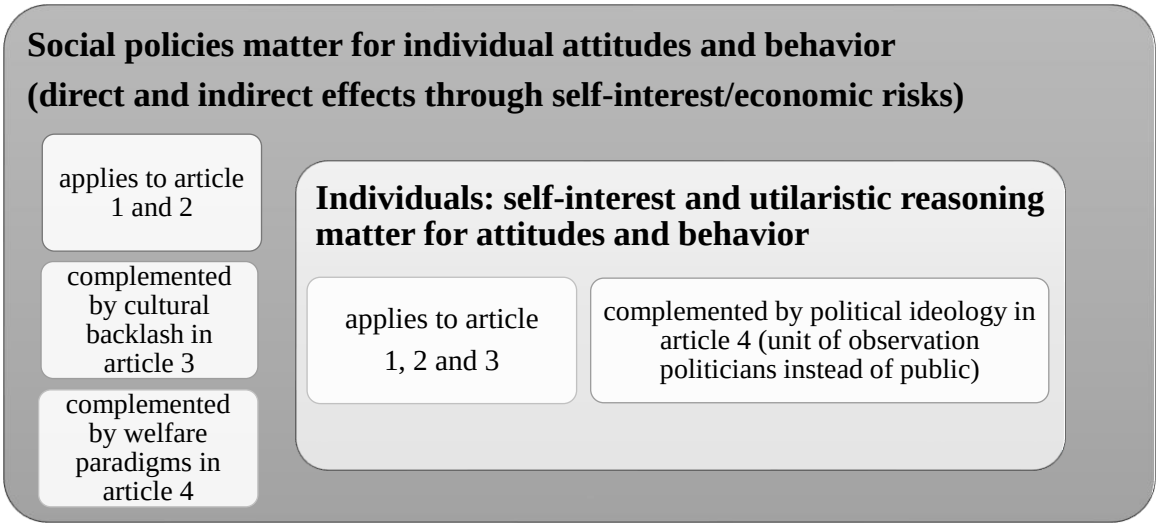
policies matter for individual attitudes and behavior – can best be applied empirically to explain the enabling function of the welfare state. However, this thesis goes beyond this by also shedding light on the unexpected consequences social policies as strategy for reducing social inequalities can have. The argument that redistributive policies can also have negative consequences on untargeted groups, as proposed in article 3, requires a theoretical extension. For this endeavor, cultural backlash theory is integrated. Cultural backlash theory assumes that the so-called silent revolution from materialist to post-materialist norms (Inglehart 1981), accompanied by rising educational levels, diversity and gender equality, led individuals with social conservative attitudes to feel overwhelmed and to express these grievances politically (Burgoon et al. 2019; Norris and Inglehart 2019). Empirically, studies found that marginalized groups with social conservative attitudes as the white working class are more likely to vote for radical right parties or having racist attitudes (Cochrane and Nevitte 2014; Van der Broug et al. 2000). By integrating cultural backlash theory into the theoretical claim that "social policies matter for attitudes and behavior", the causal mechanism of how work-family policies can evoke a backlash among untargeted groups can be differentiated more precisely. Here, it is argued that predominant cultural norms are expressed through social policies which can evoke a backlash in voting.

Besides, in article 4, I develop explorative hypotheses to explain the function of welfare experiments. In this article, I analyze the political discourse on Twitter of Finnish Members of Parliament, also to gain first indication on whether the idea of basic income is considered to be implemented. Both key theoretical claims of the thesis, the self-interest of individuals and the influence of the welfare state are complemented here. This is necessary because this paper looks at other actors and at another level of social policy: instead of the attitudes and the behavior of the public, those of politicians come here at the fore. Instead of social policies as such, the underlying welfare paradigms are used here as frames to debate a concrete policy proposal: the basic income. On the one hand, the thesis on individuals' self-interest is inspired by research on partisan politics (Hibbs 1977; Jensen et al. 2014; Kittel and Obinger 2003; Knill and Tosun 2020), arguing that political parties differ due to their political ideology in how they frame policy proposals: "The framing process involves, among other things, the articulation and accenting or amplification of elements of events, experiences, and existing beliefs and values, most of which are associated with existing ideologies" (Snow and Benford 2000: 58). Connecting self-interest and political ideology, this paper argues that the variation in political party affiliation leads to distinct framings of the basic income proposals as this strategy increases the likelihood for re-election. Using frames that are in alignment to the party ideology,

increases the likelihood for re-election as voters support politicians for their party affiliation and political ideology (Saunders and Abramowitz 2007).

On the other hand, the concept of welfare paradigms is introduced. Welfare paradigms, understood as normative principles which shape and guide policy content, goals and assessment (Kuhn 1970), are used for the argument that the use of predominant welfare paradigms (here: activation) is important to embed new policy proposals in the existing idea of social security and therefore provide legitimization for them. This complements the claim that "social policies matter for attitudes and behavior" by highlighting that not only the concrete social policy output, but also the underlying norms of how individuals need to be protected through state benefits and services is important to understand politicians' behavior in debate. Figure 1.2. summarizes the similarities and differences between the four articles with regard to theoretical arguments.

Figure 1.2. Theoretical arguments of the dissertation



Notes: Own illustration

1.2.2 Case selection and methods

In this section, I introduce the empirical identification strategies I used to answer the research questions of the four papers. Again, the four papers have similarities and differences, which are presented and justified in this section. Besides, I discuss the assets and drawbacks the case selection and methods might have.

The *first similarity* between the four articles is the quantitative research strategy. Concepts and variables are transferred into numbers and the underlying hypotheses are tested with the help of statistical methods (King et al. 1994). Doing so, the four articles can be classified as large-n

studies by using individuals as unit of observation. As far as epistemological considerations are concerned, the dissertation is therefore to be located in the tradition of positivist research. Regarding ontological points of view, the structure of political reality is considered to exist objectively. All papers rely on descriptive and inference statistics; thus, the aim is to generalize findings based on a sample to the respective population (here: OECD and European countries). The assets of the quantitative research strategy are the better possibility of generalizations due to representative and large samples, the specification of effect sizes and the higher comparability and objectivity of the results. The drawback of this quantitative, regression-based research strategy is the difficulty to investigate in causal mechanisms which is discussed in every article.

The *first difference* between the four articles is the case selection: while the quantitative research strategy is applied to all OECD or European countries in articles 1, 2 and 3, quantitative methods are used in article 4 to study a single case, namely Finland. The focus on OECD and European countries has three reasons: first, as these countries have matured welfare state systems with varying degrees of generosity, the influence of social policies can analyzed here (for autocracies, see Pelke & Croissant 2018; for young democracies, see Croissant et al. 2004). Second, these countries have similar problems in (rising) social inequality and similar social norms: for instance, divorces are socially accepted in these countries, which leads to higher rates of single motherhood with in turn results in specific economic risks against which these countries have (different) social policies in place. Third, the good data availability on European and OECD countries at the individual- and country-level makes the empirical analysis implementable and reliable. Article 1 looks at European countries that are also OECD members, article 2 includes OECD countries, article 3 European countries and article 4 focuses on the EU and OECD member Finland. Since all articles use individuals as unit of observation, the quantitative research strategy also applies to the case study on Finland. While the studies 1 to 3 provide general insights into the relationship between social policies and attitudes and behavior of vulnerable groups, study 4 dives deeper into a concrete policy proposal to study strategic considerations of politicians which would not be possible in a cross-country design. Studying a single case in article 4 is reasoned with the findings in the previous chapters: articles 1 to 3 demonstrate that socio-economic and ecological/climate crises taper, which makes it necessary to think about the existing social security system, how it can be transformed and which tools and instruments are feasible for this task. Welfare experiments come here to the fore as they are considered as an evidence-based policy instrument that provides a test limited in time and space of new social policies. Since welfare experiments are still rare and data

availability is very limited, a comparative, cross-country analysis of this policy instrument is not feasible. Besides, using a single case in article 4 provides also the advantage that the explorative hypotheses can be analyzed in more detail by adding case-specific knowledge. According to Van Evera (1997), "tests performed with case studies are often strong, because the predictions tested are quite unique" (Van Evera 1997: 54).

The *second similarity* between the four articles is the usage of regression analyses. Regression analysis is one of the most often used quantitative strategies in political science, as it allows to estimate effect sizes, degrees of uncertainty and is applicable to very different kind of data structures and variables. This similarity facilitates reading because the presentation of the method and the discussion of the empirical results are similar between the papers. The empirical contributions and shortcoming can be better classified by using same methods.

The *second difference* between the four articles is the specific kind of regression analysis. Article 1 to 3 use multilevel models, with random effects only or as mixed effects (Hox 2010; Snijders and Bosker 2012). Here, the individual-level survey data is nested in countries. By doing so, both, country-level regression coefficients and individual-level coefficients accounting for individual and country-level, context factor variation can be estimated (Gelman and Hill 2006). Therefore, the multilevel regression analyses provide the opportunity to differentiate between the influence of individual economic risks and attitudes as well as of country-level social policies on individual behavior and attitudes. This matches well my theoretical arguments that are based on the individual and country level (see Figure 1.2). Besides, the estimation is more likely to be unbiased and efficient as standard errors are not underestimated if accounting for the hierarchical structure of the data (Poetschke 2019). In article 4, however, only individual level, social media data, is used, resulting in the usage of cross-sectional logit models. The theoretical argument on the influence of social policies, or more precisely welfare paradigms, on attitudes and behavior, is embedded here in the individual-level data on framing strategies. The downside of both regression approaches is the lack of causal inference. While regressions can show that two (or more) variables are associated with a certain degree of uncertainty, they cannot test the cause-and-effect relationship. This would require randomized experiments, where individuals are randomly assigned to treatment or control group. However, regression analysis provides some first evidence that causal relationships might be possible between the studied variables.

The *third difference* between the papers is the usage of additional methods. In addition to descriptive statistics and regression analysis, article 1 also uses structural equation modelling to test the causal mechanism. Via structural equation modelling, it is tested whether the inability

to pay bills as a proxy for economic risks explains the relationship between the working class/the elderly and pro-environmental behavior and attitudes. Paper 2 and 3 use interaction terms to provide first evidence on possible causal mechanisms.

The *fourth difference* regarding case selection and method is the observation period. While all papers look at a period of time of roughly ten years between 2008 and 2020, some articles use only one point in time while others capture two times. In general, individual data is matched to country-level data of comparable times with consideration of theoretically reasoned time lags. While article 1 uses data from 2019, article 2 relies on 2010 and 2020, article 3 on 2008 and 2017 and article 4 differentiates 2017 and 2018. This difference between the papers is mainly based on data availability: the Eurobarometer, which is used for article 1, provides the survey questions only for 2019. The International Social Survey Programme, which is used in article 2, collected the same survey items at two points in time, similar to the European Values Study, which is used in article 3. The welfare experiment, that is studied in article 4, has been analyzed between 2017 and 2018. In study 4, I also dive deeper into time dynamics with descriptive statistics that describe the overall number of tweets over time as well as their polarity.

All in all, the four articles of the dissertation use a comparable research strategy and select cases as well as draw observations from a comparable population, established democracies with welfare systems and OECD and/or EU membership. All papers use regression analyses, three of them even the same methodical procedure with multilevel models. The differences between the four papers are rather small issues, as, e.g., additional methods.

Connected to this section on case selection and methods, the next section reviews the used data for the dissertation.

1.2.3 Data

The thesis draws on a variety of data sources, including large-scale surveys, social media data, and governmental statistics. Again, the largest difference is between papers 1 to 3 and paper 4. For papers 1 to 3, I merged cross-national survey data with country-level statistics. Paper 4 is based on an own dataset which consists of Twitter tweets from Finnish Members of Parliament extracted via the Twitter Application Programming Interface (API). Table 1.3 gives an overview of the different datasets that I used to measure the variables of each paper.

Table 1.3. Overview of data sources

Variables	**Chapter 2/ Article 1:** The welfare state and support for environmental action in Europe	**Chapter 3/ Article 2:** On the moderation effect of work-family policies on pro-environmental behaviour of single mothers	**Chapter 4/ Article 3:** Backlash by men against the socio-economic and political promotion of women in Europe	**Chapter 5/ Article 4:** Welfare experiments as tools for evidence-based policy making?
Independent variable(s)	*Individual level:* Eurobarometer 91.3 (2019) *National level:* OECD Social Expenditures (2019) and Eurostat (2018)	*Individual level:* International Social Survey Programme (2010;2020)	*National level:* OECD Social Expenditure Aggregated Dataset (2019), the Comparative Welfare States Data Set on childcare expenditures (Brady et al. 2020), and World Bank Gender Statistics (2019)	Twitter Application Programming Interface (API)
Moderating variable(s)	*Individual level:* Eurobarometer 91.3 (2019) *National level:* OECD Social Expenditures (2019) and Eurostat (2018)	*National level:* OECD Family Database (2009; 2019)	*Individual level:* European Values Studies (2010; 2019)	
Dependent variable(s)	*Individual level:* Eurobarometer 91.3 (2019)	*Individual level:* International Social Survey Programme (2010;2020)	*Individual level:* European Values Studies (2010; 2019)	

Notes: own illustration

The thesis wants to explain political and pro-environmental behavior and attitudes. For this endeavor, having individual level data stemming from international survey projects is crucial. All surveys used – Eurobarometer, the International Social Survey Programme and the European Values Study – draw a random, representative sample from each country. The sampling and interview methods differ only slightly between the surveys, e.g., all three survey programs rely on face-to-face interviews in respondents` homes and, some, if available, on computer assisted personal interview (CAPI).

Country-level data stems from national statistics that are collected and prepared by the OECD, Eurostat or similar reliable instances. Since the dissertation focuses on OECD and/or EU member states, data availability is good even if there are missings for some indicators. Most variables were retrieved from the OECD Social Expenditure database that provides internationally comparable statistics on aggregated social policy indicators. The used datasets

are widely accepted in research and most empirical social policy research relies on them. As the articles are x-centered, the direct and indirect effect of social policy data on attitudes and behavior is an important data source for the dissertation.

The dataset for article 4 was extracted via the Twitter API and supplemented by additional variables on politicians` characteristics (e.g., party membership or age). As neither survey data nor governmental statistics on welfare experiments or the basic income exist, we used this data strategy to be able to test empirically theoretical claims on welfare experiments. As this article is the first that introduces testable hypotheses on welfare experiments, the endeavor to collect social media data is an important methodical contribution to the research on evidence-based policy-making.

1.3 Summary of the thesis

In this section, I briefly summarize the key empirical findings of the four studies.

The first study (chapter 2) deals with the question whether welfare state generosity increases or decreases the likelihood of vulnerable groups to engage in pro-environmental behavior (PEB) and/or to support pro-environmental policies. By focusing on the working class and the elderly as vulnerable groups, the study tests competing expectations: while the *synergy* thesis implies that welfare state institutions lead to synergies between addressing socioeconomic and ecological risks, the *crowding-out* thesis, in contrast, posits that ecological and social risks are substitutes, where individuals prioritize one at the expense of the other. To test whether both vulnerable groups are less likely to engage in pro-environmental action and whether welfare state generosity moderates this relationship, multilevel models based on 22 European countries are estimated. The analysis concludes with four main findings: first, we find that the working class and the elderly are indeed less likely to engage in pro-environmental behavior and to support pro-environmental policies, controlling i.a. for education, left-right orientation and gender. Second, welfare state generosity positively influences the likelihood of the working class to engage in pro-environmental behavior, and to a lower extent, to support pro-environmental policies. This finding is in line with the *synergy* logic. Third, we also find support for the *crowding-out* logic regarding the elderly: if the pension replacement rate increases, the elderly is less likely to engage in pro-environmental behavior. Fourth, we study the causal mechanism via inability to pay bills to find out whether the lower pro-environmental action of both vulnerable groups is based on social risks or cultural values. The structural equation models demonstrate that the negative effects of being working class or elderly is moderated by the inability to pay bills and not by left-right orientation. The study is a first attempt to theorize

and empirically explore the relationship between the welfare state and environmental attitudes and behaviors. By doing so, the study contributes to the welfare-environment nexus: academically by providing a tested framework on economic insecurities and pro-environmental action and demonstrating the complexity of the relationship, and practically, by showing policymakers that insecurity needs to be addressed by welfare state institutions to receive broad public support for climate change mitigation.

The second study (chapter 3) adds on the first study by looking at another vulnerable group – single mothers – and how work-family policies influence pro-environmental behavior. By doing so, this study contributes to fill an identified research gap of study 1. Single mothers are a vulnerable group that is particularly interesting: On the one hand, the research on pro-environmental behavior (PEB) theorized the "motherhood effect", implying a higher likelihood of mothers to engage in PEB due to their social role as caregiver and nurturer. On the other hand, single mothers face a high economic insecurity, expressed by the fact that they have one of the highest poverty risks in Europe and the OECD world. As PEB often requires financial resources, it is an open question how single mothers behave in this trade-off. Again, it is argued that generous work-family policies might enable single mothers to engage in PEB and therefore having a positive, moderating effect on the relationship. To test whether single mothers are less likely to engage in PEB due to lower opportunities and whether work-family policies moderate this relationship by giving various resources, multilevel models based on 18 OECD countries are estimated. Three main findings can be derived: first, despite their economic deprivation, single mothers are not statistically less likely to engage in PEB compared to partnered mothers. Second, work-family policies on early child education and care increase the probability of single mothers to engage in PEB, but decrease the probability of partnered mothers to do so. Third, the duration of parental leave has no significant moderating effect while labor market participation has the opposite moderating effect by decreasing the likelihood for PEB. The study confirms the finding of the first study: variation in national social policies is associated with varying PEB among economically deprived individuals. Besides, it contributes to PEB research and gender research by demonstrating the complexity of single motherhood, economic insecurities and PEB. In addition, the study highlights the importance of intersectoral policy approaches to tackle the climate crisis and the need to evaluate also specific social policies by their potential environmental and climate effects. A practical lesson of this study is that climate change mitigation needs to consider compensation of economically deprived groups to not risk a political backlash.

The third study (chapter 4) deals with such backlashes that reducing social inequalities might have. While the first two studies show that reducing social inequalities through social policies can have positive effects on environmental protection and climate mitigation, this third study takes a different perspective by showing how the promotion of formerly disadvantaged groups, here women, can increase the likelihood of formerly advantaged groups, here men, to have a far-right political orientation. The argument is that the socio-economic and political promotion of women, e.g., through higher political representation, led to a cultural backlash of the formerly advantaged group of men, expressed through a higher far-right orientation of (some) men. Here, a self-undermining, long-term policy feedback effect is theorized, arguing that men, who are not primarily targeted by these work-family policies, develop feelings of relative deprivation and therefore opt for political parties that promise to restore former gender relations. The causal mechanism is tested via attitudes on social conservativism. Multilevel logit models for 25 European countries are estimated to test the theoretical expectations. The study comes up with three main findings: first, a higher share of women in parliament and on boards is associated with a higher gender gap in far-right orientation and far-right voting. Second, childcare expenditures are also statistically positive associated with a higher gender gap in far-right orientation, but not to the gap in far-right voting. Third, the gender wage gap is not significantly related to a varying support among men and women for the far-right. This study makes theoretical and empirical contributions: It is a first attempt to conceptualize policy feedback theory for non-targeted groups and to combine it with cultural backlash theory into a testable framework. Empirically, this study demonstrates that the gender gap in far-right orientation not necessarily results from a gender difference in nationalist and populist attitudes, but that the promotion of women might has resulted in a perceived political imbalance, leading some men to favor far-right parties.

The fourth study (chapter 5) puts the emphasis on welfare experiments as a tool for evidence-based policy making. As previous chapters highlighted, multiple socio-economic and ecological/climate crises are emerging that might require a rethinking and restructuring of existing social security systems. Therefore, it is of particular interest to test whether policymakers use welfare experiments to gain empirical evidence for contested policies or whether they serve other strategic functions. The empirical focus is here on the basic income trial in Finland, that was aimed to reduce social inequalities, especially the specific vulnerabilities unemployed individuals face. As basic income would be an alternative to the existing welfare state, it is of special interest to analyze its acceptance and implications. The study is embedded in evidence-based policymaking research and provides testable hypotheses

on the functions of welfare experiments by analyzing the political debate of Finnish Members of Parliament on Twitter. The quantitative content analysis comes to the following key results: First, the number of tweets increased during the study period and became increasingly negative, providing some evidence that the welfare experiment was not used as a scientific tool where policymakers waited for the results of the experiment. Second, the connection to welfare paradigms, especially activation, was necessary to legitimize the policy proposal. Third, political parties differed not only in their (dis)approval towards the basic income but also their framing and reference to core welfare paradigms differed. This study contributes to the research on evidence-based policy making, as it formulates and tests hypotheses on different functions of welfare experiments and therefore supplements previous research that only relied on case studies without investing in testable theoretical expectations. Next to demonstrating the usefulness of social media data for social policy analysis, the study also shows the opposition towards new social security systems and that the approval and disapproval depends largely on political, not on scientific grounds.

1.4 Contributions

The cumulative dissertation builds on three literature strands: welfare state research, research on attitudes/behavior as well as policy studies. All articles connect two literature strands each, therefore providing a holistic perspective on the complex relationship between social policies, social inequalities and attitudes/behavior (see also Figure 1.3). Besides integrating these literatures, the thesis also contributes to each literature individually and makes some important policy implications. This results in five main contributions:

The *first* contribution of the dissertation is to the literature on welfare state research. The thesis theorizes and tests empirically the direct and moderating effects of social policies on pro-environmental behavior and attitudes. While former studies already discussed the relationship between welfare state and climate/environmental policies (Gough et al., 2009; Marquart-Pyatt et al. 2019), or between redistribute and environmental attitudes (Fritz and Koch, 2019; Jakobsson et al., 2018; Otto and Gugushvili, 2020; Spies-Butcher and Stebbing 2015) articles 1 and 2 of the thesis are the first that conceptualize social policies as independent variable increasing the capabilities of vulnerable groups to engage in pro-environmental action. By doing so, the articles demonstrate that social policies not only reduce poverty through redistribution, but that risk-sharing also leads to higher capabilities to engage in other areas. This might relate the thesis to research on post-materialism (Inglehart 1981), arguing that the satisfaction of material needs makes individuals more likely to care about post-materialist concerns, as, e.g., environmental and climate issues. The contribution is theoretically and

empirically: On the one hand, theoretical claims are developed by arguing that economic risks are reduced through welfare state generosity and that this material security leads vulnerable groups to care about the long-term issue of climate change. On the other hand, the direct and moderating role of welfare state generosity on environmental action is empirically tested, providing evidence of a complex relationship. Doing so, welfare state research is more strongly linked to environmental politics, and gives some empirical evidence for policy integration. The thesis invites following studies to test the different environmental impacts various social policies might have.

The *second* contribution of the thesis is to the literature on attitudes and behavior. Based on rational choice approaches, the (psychological, social cognitive) theory of planned behavior (Ajzen 1988), that argues that behavior is the result of intentions which are determined inter alia by attitudes, is still central to explain behavior. While attitudes are an important explanatory factor of behavior, it is an established finding that attitudes not necessarily result in the observed behavior (Ajzen and Fishbein 1980). All papers of this thesis clearly differentiate between attitudes and behavior to highlight that economic risks and social policies might shape individual behavior and attitudes differently. In fact, we find in article 1 that social policies have a stronger effect on pro-environmental behavior than on attitudes. In contrast, Article 3 demonstrates a stronger effect of the political promotion of women on attitudes (here: far-right orientation) than on behavior (here: far-right voting). On the one hand, the theory on planned behavior (Ajzen 1988) is still one of the most often applied theories in research on attitudes (Jedinger 2020). On the other hand, it faces high criticism in other literature strains, most prominently health studies (Sniehotta et al.2014). One of the main critics is that the theory does not formulate testable hypotheses which would make its empirical falsification impossible (Ogden 2003). Another main point of criticism is the "sufficiency hypothesis" that assumes that non-included factors have no influence on behavior. This has proven wrong, as studies found that socio-demographic and socio-economic factors predict certain behavioral outcomes when controlling for the theory's predictors (Sniehotta et al. 2013). To advance research on this, I propose in article 2 a slim explanatory model arguing that behavior is a function of two necessary conditions: willingness and capabilities. Here, willingness is the product of attitudes, social norms and values, while capabilities include, inter alia, the economic risks vulnerable groups face. By combining social cognitive factors and socio-economic factors, article 2 advances the theory of planned behavior and opposes the central points of criticism. The explanatory model contributes to the research on attitudes and behavior in three ways; first, it provides an alternative to the theory of planned behavior, second, it provides the opportunity to

combine two lines of explanation that otherwise are often included in empirical models without theoretical elaboration, and third, it offers an explanatory model that is easily empirically testable.

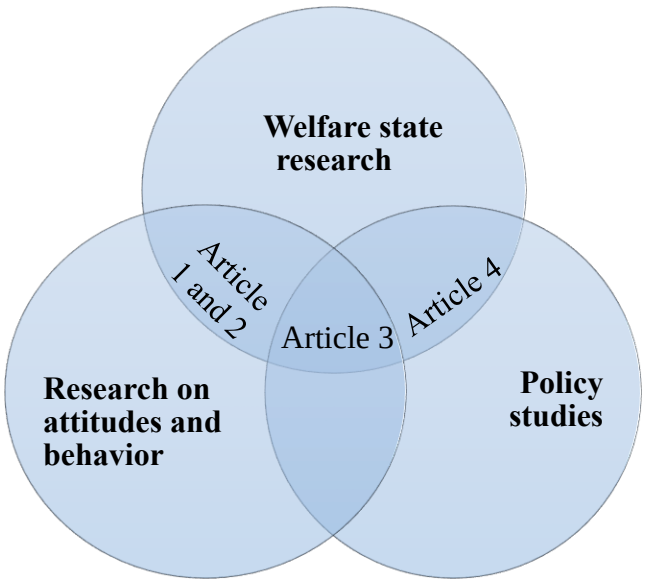
The *third* contribution of the PhD thesis is to the literature on policy studies. Here, I differentiate between two separate contributions: the one is to the literature on policy feedback theory, the other is to the literature on evidence-based policy making. Policy feedback theory "refers to the variety of ways in which existing policies can shape key aspects of politics" (Béland and Schlager 2019: 184). In its application to mass politics, it is argued that public policies can influence political participation and political attitudes (Campbell 2012). By giving lessons on the social and political status of specific groups, policies can result in individuals adjusting their political preferences and attitudes (Soss 2005). In article 3, I propose a new type of self-undermining, long-term feedback effect (Béland and Schlager 2019). Self-undermining feedback effects describe the situation where policies drift away from their original objective. Long-term feedback effects stress a certain time lag between the approved policy and the attitudinal consequences. I adjust this type of policy feedback by looking at the effect of policies on non-targeted groups. So far, research only differentiates between targeted and general feedback effects (Vanonni 2019), ignoring the fact, that non-targeted groups might feel neglected and ignored and therefore backlash politically. This theoretical adjustment is, however, important to capture the self-undermining effect fully. As policies not only have positive, supportive effects but can also provoke political backlash, this theoretical extension is needed to capture those. The second contribution to policy studies relates to the literature on evidence-based policy-making. To the best of my knowledge, article 4 represents the first systematic empirical analysis on the functions of welfare experiments as a potential tool for evidence-based policy-making. Former studies on welfare experiments rely on the description of historical examples of welfare experiments (Brodkin and Kaufman 2000; Greenberg et al. 2003) without formulating and testing hypotheses. Doing so, the study gives first evidence that welfare experiments may not necessarily serve to find new evidences but instead represent a good opportunity for lively debates on how social security should be shaped and how welfare paradigms are to be understood. The use of social media data proves as a valid strategy to capture politicians' attitudes. Here, the formulation of hypotheses on welfare experiment strategies and the related methods and social media data contribute to research on evidence-based policy making.

The *fourth* contribution of the PhD thesis is the integration of multiple research areas. As figure 1.3 illustrates, three literature strands are combined in this thesis and each paper deals with at

least two of them. By integrating different theoretical assumptions and arguments, a comprehensive understanding on the relationship between social inequalities, social policies and attitudes and behavior is reached. For instance, comparative welfare state research benefits from integrating individual-level based arguments that are not based on socio-economic grounds only, but takes concepts as relative deprivation and cultural backlash into account. By looking at attitudes and behavior as outcome variable, the four articles do not draw conclusions about one level of analysis using evidence from another, which is often done in comparative welfare state research (Stiller and Van Kersbergen 2008). In contrast, theoretical concepts from research on attitudes and behavior, e.g., the extension of the theory of planned behavior, are used and combined with the concepts of economic risk and insecurity from welfare state research to match levels of analysis and get a comprehensive understanding of the mechanisms at work.

Integrating multiple research areas also has a practical benefit. For instance, articles 1 and 2 combine welfare state research and research on environmental attitudes and behavior, producing synergies for both. As illustrated before, rising social inequalities and climate crisis are empirically interlinked, which is why theoretical claims from both literatures are needed to understand the environment-welfare nexus fully.

Figure 1.3. Venn diagram on the integration of the three literature strands



Notes: own illustration

The *fifth* contribution is of practical relevance by giving policy implications. Two concrete policy implications can be differentiated: first, the findings of article 1 and 2 highlight that

countries with high economic insecurity and non-generous welfare state institutions will be less able to form a viable wide political coalition which is needed for the society-wide transformation of climate change mitigation (Tosun and Schoenefeld 2017). Social inequalities are aggravated through climate change, which is why studying specific eco-social risks is important to find effective and protective policy instruments that make the large transition needed possible. Doing so, the thesis confirms former findings on the relationship between economic risks and climate change mitigation (Benegal 2018; Markkanen and Anger-Kraavi 2019; Rausch and Karplus 2014; Scruggs and Benegal 2012; Tosun 2022). More precisely, the thesis focuses on behavioral change by embedding explanations for pro-environmental behavior into an institutional context. Doing so, the shortcoming of previous explanatory models that largely ignored the impact of context factors, as, e.g., social policies, is met (Whitmarsh et al. 2021). Thus, the thesis adds on this research by showing that social policies might play a key role to increase financial, time and cognitive resources of economically disadvantaged groups to be able to support climate change mitigation. Compensating potential drawbacks of vulnerable groups through generous social policies might be a tool to prevent political backlash. Therefore, issues of social justice and climate justice are brought together by arguing that economically disadvantaged groups are more vulnerable to climate change which requires social policies that cushion these effects (Markkanen and Anger-Kraavi 2019). Here, it is noteworthy that not only climate change as such but also climate change mitigation policies can deepen social inequalities, making social justice a key concern in climate action. Increasing social inequalities, which are the fundament of social injustice, might therefore also aggravate climate justice. As a wrong timing might trigger public backlashes (Jordan and Moore 2020; Jordan et al. 2022), it is important to integrate also vulnerable groups early into the policy process and policy outputs. The welfare-environment nexus also includes potential trade-offs that need to be considered: As social policies are financed by taxes, high taxation levels could reduce the enabling effect of generous welfare states, but also increase the exploitation of the nature themselves since increasing taxes require growing economies. Also, financing both under circumstances of limited financial resources, social policies and climate change mitigation could become competitive policy goals. Budget stability needs to be considered additionally, which might evoke a trilemma between social justice, environmental stability and positive budget. Future research should study these potential dilemmas.

A second policy implication derives from article 4 that studies the functions of policy experiments. Investigating the welfare experiment on basic income in Finland, the article demonstrates that policy experiments are more likely to serve strategic and political functions

than being a scientific instrument of evidence-based policy making. Since policy experiments are often wrongly designed, e.g. consisting of a too small sample or being conducted in a too short period of time, they are often inadequate tools for finding significant and valid effects. The article points out that the results of policy experiments' evaluation might be less important in the policy process and do not help to find out whether trials become real reforms. In contrast, analyzing the debate of politicians gives probably more insights into the actual willingness of implementing these policies. These findings are especially interesting for civil society and activists because it gives first evidence that calling governments to test certain policy reforms for a limited period of time is a less successful strategy if they want these policies to be implemented. The political area follows different decision rules and logics than the scientific area.

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2 The welfare state and support for environmental action in Europe

Abstract. How do welfare state policies affect the political support for environmental action of economically vulnerable social groups? Two competing hypotheses can be delineated. On the one hand, a synergy logic would imply that welfare state generosity is associated with higher support for environmental action among economically vulnerable groups due to the insecurity reducing effects of the welfare state. On the other hand, a crowding-out logic would suggest that welfare state generosity is associated with lower support for other policy priorities like environmental action. We test these two hypotheses using 2019 Eurobarometer survey data and country-level indicators of welfare state generosity in 22 European countries.We find that the working class and the elderly are particularly opposed to individual and national environmental action and that the welfare state plays a complex moderating role. Consistent with a *synergy logic*, welfare state generosity increases pro-environmental behaviour among the working class, but its association with more positive attitudes towards national environmental policies is less strong. Consistent with a *crowding-out logic*, the elderly appear less likely to behave in environmentally friendly ways if retirement benefits are high. To explore the mechanisms behind this association, we show that the working class who struggle to pay their bills are most opposed to environmental action. Overall, economic insecurities are key obstacles for support of environmental actions and the effects of the welfare state depend both on which social group is concerned and whether individual behaviour versus policy preferences are considered.

Note: This chapter is identical to an article published together with Tim Vlandas in *Journal of European Social Policy* 2022, doi: 10.1177/09589287221115657.

2.1 Introduction

"Protests in Paris are a reminder that altering energy policy hits the worst-off hardest" (Martin Sandbu, Financial Times, 4th December 2018).

Preventing the imminent climate change crisis calls for urgent and drastic environmental actions by both governments and individuals. Yet, these required environmental actions are often politically unpopular, especially among economically insecure social groups that would prefer governments to address their more immediate material concerns. Since broad political coalitions are needed to undertake any large societal transition such as tackling the climate crisis, it is crucial to understand which policies – if any – can increase support for individual and national actions to address environmental challenges. To contribute to this understanding, this article analyzes the relationship between the welfare state and support for environmental action among insecure social groups in Europe. Specifically, we explore whether the welfare state exacerbates or attenuates the tensions between the often pressing need to address rising economic insecurity among many social groups and the urgent government actions required to address the environmental crisis.

While there are many valuable studies on the extent of climate change and the most adequate possible solutions (e.g. Gough and Meadowcroft, 2011; Maor et al., 2017; Jordan et al. 2022), the key question of the political viability of environmental policies necessary to achieve climate mitigation and adaptation has so far received less attention.[1] This is potentially problematic given that, as recent events such as the *Gilets Jaunes* protests suggest, solutions to the climate crisis will not be chosen on technical or economic grounds alone, but will crucially depend on the ability of governments to create sufficient electoral support to implement the necessary policy solutions.

One challenge in creating the required electoral support for these policies is that the costs of adaptation and mitigation are potentially very large and hence cannot be borne exclusively by a few economically very well-off social groups. It is therefore necessary to distribute the costs of environmental solutions across social classes. However, the ability and willingness of (partly) self-interested and (often) short-termist individuals to support environmental action depends crucially on their economic insecurity. When faced with a choice between reducing economic or climate risks, it is plausible that at least some individuals will prioritize the former. A first reason is that economic risks take place in the present and/or the near future, whereas

[1] Notable exceptions include Armingeon and Bürgisser, 2020; Marquart-Pyatt et al., 2019; Stadelmann-Steffen and Eder, 2020.

most ecological risks (are perceived to) materialise over longer periods of time (e.g. Gough et al., 2009). A second reason is that environmental risks and their solutions might appear more uncertain, harder to predict and/or requiring more collective action.

In this article, we ask whether and how the welfare state can affect the policy preferences and individual actions of insecure groups to protect the environment? Building on existing literature, we theorise two competing hypotheses (Jakobsson et al., 2018; Marquart-Pyatt et al., 2019; Spies-Butcher and Stebbing, 2015). First, a *synergy logic* would imply that welfare state generosity is associated with more support for environmental action among economically vulnerable groups due to the insecurity reducing effects of the welfare state. Second, a *crowding-out logic* would suggest that welfare state generosity is associated with lower support for environmental mitigation as individuals prioritise their material concerns and protecting welfare state policies.

To test these two competing hypotheses, we estimate multilevel regressions and structural equation models using a dataset combining a 2019 Eurobarometer survey on environmental attitudes across 22 European countries and national level data from OECD datasets and Eurostat. This survey includes questions about both individual environmental behaviour and policy preferences for national action. This allows us to study how welfare state generosity alters the environmental attitudes and behaviours of insecure social groups. We focus in particular on two characteristics that are typically associated with higher economic insecurity: the class position and age of respondents.

Our empirical analysis proceeds in four steps. First, we test which individual characteristics are associated with pro-environmental behaviour and preferences. Second, we explore whether more generous welfare states are negatively or positively associated with more overall support for individual and national environmental actions. Third, using interaction models, we analyse whether generous welfare institutions have stronger or weaker effects on support for environmental action among our two selected insecure groups – the working class and the elderly. Fourth, using structural equation models we examine a possible causal mechanism by focusing on individuals' 'inability to pay bills'.

Our results are as follows. First, we find that the elderly and working class are both less likely to support national action regarding energy efficiency and to adopt environmentally-friendly behaviour. Second, welfare state generosity influences their willingness for individual environmental action differently: while increasing welfare state generosity is associated with more environmental behaviour among the working class (*synergy logic*), the opposite is true

for the elderly (*crowding-out logic*). Third, we find that the role of the welfare state is weaker in the case of attitudes towards national environmental action. Finally, we find support for a material mechanism linking economic insecurity to environmental attitudes, which operates via the 'ability to pay bills' of individuals, rather than a more ideological mechanism operating via the left-right self-placement of different classes and age groups. Taken together, our findings contribute to an emerging literature on the determinants of political support for different environmental policies (e.g. Fritz and Koch, 2019; Tvinnereim and Ivarsflaten, 2016).

In the next section, we review previous literature to derive our two main hypotheses. Next, we describe our data and our multilevel estimation method. In the third section, we present and discuss our findings. In the last section, we explore the wider implications of our findings for research on the welfare-environment nexus.

2.2 The welfare state and support for environmental action

2.2.1 The climate crisis and the necessary politics of environmental action

Adopting renewable energy sources and making energy use more efficient are considered to be key factors for reducing greenhouse gas emissions. Although best practices are shared by the OECD and the necessary instruments such as technologies and carbon tax schemes are widely known, governments often struggle to implement the required policies needed to address the enfolding climate crisis. Assuming consensus on what has to be done, why do governments not implement the required policies more fully? One reason might be that governments fear punishment at the next elections: the short-term politics at the core of the democratic process undermines societies' ability to address long-term negative externalities of current production and consumption models, because these mainly affect future electorates. In other words, current electorates face most of the costs of adaptation and few of the benefits, whereas future electorates face most of the benefit but less of the costs.

Further compounding this temporal challenge, climate change and environmental policy efforts towards its mitigation also entail a distributional challenge in the present because these policies often have different implications for distinct social groups and the existing social policy arrangements meant to protect insecure groups (Gough et al., 2009). Whereas climate change affects especially strongly the poor due to their higher exposure and lower adaptive capacity (Gough and Meadowcroft, 2011; Schaffrin, 2014; Tol et al., 2003), it is precisely these groups that are often – somewhat paradoxically - most opposed to environmental action. This puzzling opposition and the need to have a wide political coalition to support environmental adaptation

raise the question of the conditions under which different social groups support environmental action.

Given the importance of democratic politics for tackling environmental challenges and climate change, recent literature has increasingly focused on individual attitudes and environmental policy preferences. A consistent finding across these studies is that insecure groups are less likely to support environmental action at the national level and to engage in environmentally friendly behaviour. As economic risks become apparent earlier (or more clearly) than environmental risks, economically insecure individuals seem to prioritise increasing social spending to address their immediate economic risks, even if this is at the expense of allocating more funds and resources to address environmental risks in the future. In fact, to account for the choice between social and environmental policies, self-interest has been found to be the most important factor, as demonstrated in a recent experiment in Switzerland (Armingeon and Bürgisser, 2020).

Thus, the *distribution and level* of insecurity also affects the *distribution and level* of popular support for environmental action. The resulting potential gap in support echoes a wider literature in political economy and political science, which documents how risks are unequally distributed between secure and insecure groups and how these risks in turn lead individuals to adopt distinct policy preferences (cf. Busemeyer and Garritzmann, 2017; Emmenegger et al., 2015; Vlandas, 2013a, 2018, 2020, 2021) and voting behaviour (e.g. Bojar and Vlandas, 2021) which in turn shapes government policy responses (e.g. Simoni and Vlandas 2020). In the rest of this section, we focus on two prominent political dividing lines in society: age and social class; and then theorise how these two social groups differ in their environmental actions and policy preferences.

First, with respect to social classes, individuals with low income and low economic opportunities are more likely to focus on more immediate pressing material needs. This then leads them to express lower support for policies that are not immediately conducive for increasing individual welfare (Fritz and Koch, 2019). In this view, the material interests of economically less well-off social classes affect their attitudes towards environmental behaviours and policies due to their more limited material resources. Marquart-Pyatt *et al.* (2008; 2019) for instance confirm this effect for environmental attitudes and for pro-environmental behavioural intentions in advanced industrial countries. Similarly, economically insecure have a lower likelihood to be concerned about the environment (Panarello, 2020) and working-class individuals are also less likely to have environmentalist values (Garner, 2011: 13f). Conversely, using a survey in UK, Graham et al. (2019) find that the highest-income group

is twice as willing to pay for policies that reduce future increases of climate-related deaths as the lowest-income group.

Thus, there are good reasons to expect lower social classes with more limited economic resources to be less likely to engage in environmentally-friendly behaviour (e.g. buying organic food) and to support environmental policies, especially if they fear this will lead to cuts in much needed welfare benefits. In line with this literature, we hypothesise that members of the working class have less environmentally friendly behaviours and exhibit lower support for environmental policies.

Hypothesis 1. The working class is less likely to support environmental actions.

Second, with respect to the demographic cleavage, previous research finds the elderly have distinct policy preferences in general (e.g. Vlandas et al., 2021) and are in particular less likely to support climate-friendly policies (see Andor et al., 2018; Poortinga et al., 2019). One reason is that their immediate economic needs are higher than their dependence on a future stable environment. Indeed, old-age poverty is increasing in many industrialised countries (Ebbinghaus et al., 2019; European Commission, 2018). Another reason is that they often depend financially on pension benefits and hence might worry about any reallocation of resources away from the welfare state and towards environmental priorities. A distinct and more psychological reason concerns the elderly's lower openness to change (Roberts et al., 2006) and hence lower willingness to engage in new behaviour and/or to support new - more sustainable – national policies. Conversely, younger people tend to support more government spending to tackle climate change, even if it leads to tax increases (e.g. Arpad, 2018), and they hold more positive attitudes towards sustainable behaviour (Wiernik et al. 2013). In line with this literature, we hypothesise that the elderly should be less supportive of environmental actions.

Hypothesis 2. The elderly are less likely to support environmental actions.

In the empirical section, we also test whether the links between belonging to one of these two social groups and lower environmental preferences operate via an economic insecurity and/or a political ideology mechanism. The latter assumes that individuals with left leaning ideology and post-materialist attitudes (Lachat, 2018) have higher support for environmental action than individuals with a right-wing ideology and more materialist attitudes. The elderly in particular are found to be more conservative and materialist than younger cohorts, which would then mean their lower level of support for environmental action could be operating through an ideological mechanism. In the alternative economic insecurity mechanism, the less environmentally

supportive groups have lower material resources and face more social risks, which is what decreases their preference for environmental action.

2.2.2 The welfare state and environmental action: synergy or crowding out?

While existing literature has looked at different aspects of the relationship between welfare states and the environment, to the best of our knowledge, there are few (if any) studies looking at how welfare state generosity influences the environmental preferences of different social groups. Existing literature has compared attitudes towards social and environmental policies (e.g. Fritz and Koch, 2019; Jakobsson et al., 2018; Otto and Gugushvili, 2020). More recent studies have also analysed more specific survey questions where respondents need to choose between competing options (Armingeon and Bürgisser, 202h0). Yet, previous research has not explicitly conceptualised how the welfare state could influence the environmental attitudes and behaviours of social groups.

Two opposing logics linking the welfare state and support for environmental actions can be theorised. On the one hand, where economic needs are effectively addressed by welfare state policies, individuals might become both more willing and able to be environmentally friendly and support national action on the environment. In this *synergy logic* the welfare state increases support for climate change mitigation by tackling the economic insecurity that undermines support for environmental action at the individual and national levels. Consistent with the policy feedback literature, welfare state institutions in this scenario lead to synergies between addressing socioeconomic and ecological risks. Generous welfare state policies make people safer by satisfying their short-term material needs (cf. Campbell, 2012; Pierson, 1994), thereby enabling them to focus on longer-term and more 'post-material' concerns (Inglehart, 1981), most notably support for environmental action. This *synergy logic* can in principle operate at two distinct levels. At the individual level, generous welfare states enable individuals to engage in (often economically costly) pro-environmental behaviour, such as buying organic food or more environmentally beneficial goods and services. At the national level, since individuals' material needs are taken care of by a generous welfare state, social groups become more supportive of policies to address environmental problems.

On the other hand, previous research examining the effect of welfare state regimes on public opinion towards the environment yields mixed results: while some point to a higher willingness to cut standard of living for the sake of the environment among respondents living in countries with advanced welfare institutions (Koch and Fritz, 2014; Fritz and Koch, 2019), others find no or only small empirical support for this *synergy logic* (Jakobsson et al., 2018). In addition,

an alternative *crowding-out logic* suggests that there might be lower individual actions on the environment as well as fewer available resources at the national level to address environmental issues in more generous welfare states. If ecological and social risks and policies are seen as substitutes, then individuals will prioritise one at the expense of the other (e.g. Fritz and Koch 2019; Jakobsson *et al.* 2018). With respect to individual environmental behaviour, generous welfare states increase individual resources which might make individuals more focused on materialist values; hence environmental concerns fade in the background. In this logic, generous welfare state institutions reinforce self-interest and individuals' focus on short-term social risks.

Moreover, in terms of attitudes towards national action on the environment, individuals may have more to lose from a reallocation of resources away from a generous welfare state and towards environmental policies targeted at promoting climate mitigation and adaptation. Conversely, when welfare states are not generous, individuals may already rely on alternative market or family-based modes of insurance, and hence have less to fear from a government focus on the environment. More generous welfare states also often require higher taxes, which in turn may reduce individual support for other policy priorities such as the environment that may also entail even higher taxes.

In sum, our two opposite hypotheses concerning the potential association between welfare state generosity and environmental actions are as follows:

Hypothesis 3. Welfare state generosity is associated with higher support for environmental actions;

Hypothesis 4. Welfare state generosity is associated with lower support for environmental action.

2.2.3 Insecurity, support for environmental action and the moderating role of the welfare state

An implicit assumption in existing studies on the topic (e.g. Fritz and Koch, 2019; Graham *et al.* 2019; Marquart-Pyatt *et al.* 2019) is that insecure groups are similarly against environmental policies and actions, regardless of institutional difference across these countries. This strikes us as partly implausible because the mechanisms linking these social groups to opposition to environmental support– i.e. their economic insecurity – is crucially shaped by welfare state policies. This has been well-documented by a large literature exploring how social policies emerged specifically to address social risks and insecurities (see for instance Barr, 2001; Esping-Andersen, 1990, Vlandas, 2013b). As a result, it is necessary to bring the welfare state

more centrally into the study of environmental preferences by theorising how it might shape environmental support of economically insecure groups.

Since income and labour market risks are not distributed equally across social groups, the welfare state does not affect them in a similar way (e.g. Radl 2013 on timing of retirement; Sørensen 2000). As a result, the aforementioned *synergy logic* might in turn be expected to have a particularly strong impact on more insecure groups, such as the working class and the elderly. In this scenario, welfare state generosity mitigates the level of economic insecurity of different social groups, which makes them more likely to support environmental action than they would have been if social policies did not protect them. Conversely, the aforementioned *crowding-out logic* could be stronger for insecure groups if they are especially reliant on welfare state institutions. Groups that depend on very generous welfare state policies may have more to lose from a reallocation to other policy priorities and/or might be more able to focus on their immediate material needs, at the expense of more post-material considerations.

More specifically, with respect to the working class, we posit that overall welfare state spending is especially relevant. Indeed, the working class often has lower education and/or lower income and/or higher risks of unemployment. Thus, their reliance on the welfare state is higher than for the general population. If the *crowding-out logic* dominates then the working class will be less environmentally friendly in generous welfare states, whereas the opposite will be the case if the *synergy logic* dominates.

Similarly, given the relevance of pension generosity for the elderly's economic insecurity, it should affect their environmental policy preferences and behaviours. For instance, the minimum pensions' replacement rates have been shown to be especially important for reducing old-age poverty (Ebbinghaus *et al.* 2019). According to the *synergy logic,* generous pensions should be associated with more positive attitudes towards individual and government environmental action among the elderly. Conversely, the *crowding-out logic* would instead make us expect that the elderly living in countries with more generous pension systems are especially dependent on the welfare state, and hence would be particularly worried about supporting environmental action if they fear this might lead to retrenchment.

To sum up, the following hypotheses on the interactions between welfare state generosity, social groups and environmental actions can be delineated for the *synergy logic*:

Hypothesis 5. The working class is more favourable to environmental action if the welfare state is more generous;

Hypothesis 6. The elderly are more favourable to environmental action if the welfare state is more generous.

Similarly, the following hypotheses on the interactions between welfare state generosity, social groups and environmental actions can be delineated for the *crowding-out logic*:

Hypothesis 7. The working class is less favourable to environmental action if the welfare state is more generous;

Hypothesis 8. The elderly are less favourable to environmental action if the welfare state is more generous.

2.3 Data and method

To test our hypotheses, we merge the cross-national individual level Eurobarometer 91.3 (2019) survey with national level data on welfare state indicators taken from the OECD Social Expenditures (2019) and Eurostat (2018). Our survey data was therefore collected when environmental action to tackle climate change was a salient topic and our more recent time period distinguishes our study from others that largely rely on older data, for instance based on the European Social Survey from 2016 (e.g. Fritz and Koch 2019; Stadelmann-Steffen and Eder 2020).

We create two dependent variables in our empirical analysis to capture two distinct dimensions of environmental action: one for individual level environmental behaviour and another capturing individual support for national level environmental action. This distinction allows us to differentiate how economic risks and insecurities shape individual behaviour as opposed to policy preferences. More specifically, to measure policy preferences for government environmental action, we rely on two questions: “How important do you think it is that the government provides support for improving energy efficiency by 2030 (e.g. by encouraging people to insulate their home or buy electric cars)?”; and “How important do you think it is that the government sets ambitious targets to increase the amount of renewable energy used, such as wind or solar power, by 2030?”. We construct an index combining answers to both questions and then dichotomize the resulting index to facilitate interpretation. Since our data do not include questions on other policy areas of environmental action to tackle climate change, we can only focus on energy policies. This strikes us as a reasonable proxy since energy (electricity and heating) represents the largest source of greenhouse gas emissions from human activities.

Next, for our second dependent variable capturing individual environmental actions, we create a summary index based on survey respondents’ answers to questions about eight

environmentally related actions they have done. Note that all actions included in the survey are part of the 'private-sphere environmentalism' in the classification of environmental behaviours developed by Stern (2000). We only include those items that have no socio-economic bias and are in principle feasible for all respondents.[1] Most notably, we exclude 'buying an electric car' because we expect mostly better-off individuals to engage in such a behaviour (see also appendix A.1.1).

Specifically, our summary index was calculated by summing up the answers to an extensive list of items[2] where each item is coded 1 if it is an action that the respondent has taken, and 0 otherwise. Since the median of the distribution of answers is located at value 3 (i.e. three actions), for simplicity we classify all persons who do three or more actions as environmentally conscious (coded 1) and all with strictly less than three actions as less environmentally conscious (coded 0), but our results do not depend on this dichotomisation (see A.2.16 and A.2.17).

Our key independent variables at the individual level are age and subjective social class affiliation. To facilitate our group-based analysis, we use a binary coding here. All individuals aged 65 years or above are "elderly" (coded 1) and those below that threshold are not (coded 0). We decided against using pensioners instead of age due to endogeneity issues and because of more limited data availability of this variable. Next, all individuals that consider themselves as "working class" are coded 1, while subjective self-location in other class schemes is coded 0. We use subjective social classes instead of income levels because classes allow us to capture wider and more dynamic socio-economic characteristics that are crucial for our argument (cf. Goldhorpe and McKnight, 2006; Sørensen, 2000). However, we also test our argument when using occupations as more objective markers of class position. To measure occupational groups, we rely on Gingrich and Häusermann (2015) but combine routine workers and working class (see appendix A.2.2).

Gender, education, left-right orientation and place of residence are included as control variables. With regard to gender, previous studies contend that women are more favourable to environmental policies due to higher climate change concern and higher willingness to engage

[1] Many thanks to an anonymous reviewer for alerting us to this potential bias.

[2] "low energy consumption as important factor for new household appliances"; "switched to energy supplier with greater share of renewable sources"; "installed equipment to control energy consumption"; "considered carbon footprint in food purchases"; "considering carbon footprint in transport choices"; "reduced waste and separated it for recycling"; "cut down consumption of disposable items" (see appendices A.1.1 And A.1.2 for further information).

in climate change action (Jylhä and Akrami, 2015; McCright, 2010; Poortinga et al., 2019). With respect to education, previous research has shown that individuals with higher educational attainments have a higher likelihood to have pro-environmental preferences (Fritz and Koch, 2019; Gelissen, 2007). Ideology is a key explanatory variable in other studies which found that right-wing and conservative individuals are less likely to believe in anthropogenic climate change (e.g. Benegal, 2018) or to support environmental action (e.g. Marquart-Pyatt et al., 2019). Place of residence is dichotomized (coded 1 if respondent lives in a large town, and 0 otherwise) and we expect those living in large cities to have more positive environmental attitudes due to their low labour dependency on "old" industries and since they often hold more liberal and progressive values.

To test whether the mechanism linking social groups and attitudes operates via economic insecurity, we use the item "inability to pay bills". Here, respondents are asked whether they faced difficulties to pay bills at the end of the month during the last twelve months, where they can answer 'most of the time', 'from time to time' or 'almost never'. Note that economic insecurity is often associated with an inability to pay bills which is why this indicator is often used to measure this latent concept (e.g. Rohde et al., 2016).

We rely on OECD data on welfare state generosity as percent of social expenditures of GDP in 2015 as our main national level independent variable. Welfare state generosity comprises various kinds of services and benefits and provides public goods that might have an association with behavioural or attitudinal environmental action and preferences of different social groups. As a robustness check, we also used welfare regimes instead of welfare state generosity: the results are discussed in the empirical section and shown in appendices A.2.4 to A.2.7, and A.2.15. We also rerun our analysis with a more disaggregated measurement of welfare state generosity, unemployment replacement rates (see appendix A.2.8), which can be expected to be important to working class individuals. Whereas total welfare state spending captures overall generosity fairly well (e.g. Scandinavian countries rank very highly), we believe spending on pensions cannot properly capture generosity of pensions, which is heavily influenced by share of elderly in the population. Thus, we rely instead on the Eurostat pension replacement ratio in 2018 (but we also test the effect of social expenditures on old age in 2015 in appendix A.2.9).

In the appendices A.2.9 and A.2.10, we report the results for other national level indicators such as GDP per capita. However, due to the limited degrees of freedom and multicollinearity issues, we do not include national-level controls in our baseline models. We acknowledge this may lead to omitted variable bias, but consider multicollinearity a greater risk given the high

correlation (0.6) between social expenditures and GDP (see Shieh and Fouladi, 2003). Due to multicollinearity issues, we also do not control for whether countries are located in Central and Eastern European Countries (CEECs) or not (see appendix A.2.14) but carry out some robustness checks to explore the effect of individuals being in different welfare state regimes in appendices A.2.4 to A.2.7. Definitions and sources for our variables are summarized in appendix A.1.1 While descriptive statistics for all individual and national-level variables can be viewed in appendix A.1.2.

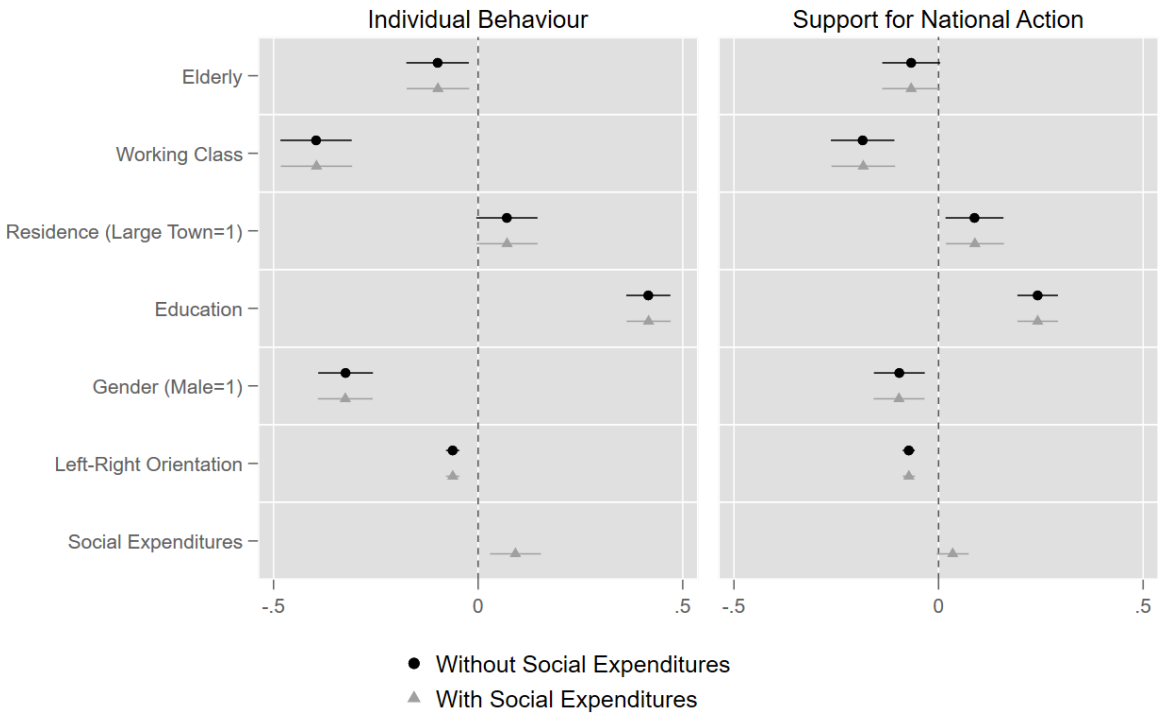
Our estimation method for our hypotheses relies on mixed effects random intercept logistic regressions which allow us to predict probabilities for our two binary outcome dependent variable. Since effects are similar to a random slope model, we opted for the former to facilitate interpretation. For predictions based on regressions, we report the fixed portion of the model only. We also report results for alternative estimations methods such as linear and ordinal multilevel regressions in appendices A.2.16 and A.2.17. Finally, to test the insecurity mechanism via inability to pay bills, we estimate generalized structural equation models.

2.4 Results

We start by running a baseline model for each of our dependent variable including only individual level variables. Next, we include social expenditures as percent of GDP in our models. Figure 2.1 reports the marginal effects (with 95 percent confidence intervals) of all our variables for both regressions. In the left panel, we show the results for individual environmental action, while the right panel displays the results when using support for national environmental action as the dependent variable.

The results show that the elderly are less likely to support environmental action both at the individual and national levels. The effect is statistically significant at the one percent level for individual behaviour. We further find that the working class is also significantly less likely to favour environmental action. We also ran regressions by welfare regimes (see appendices A.2.4 and A.2.5), which revealed that the working class is consistently and significantly less engaged in environmental action across all five welfare regimes, whereas the results for the elderly and support for national action are mixed.

Figure 2.1. Coefficient plots for individual environmental action (left hand side) and support for national environmental action (right hand side)



Notes: This figure plots the marginal effects of different variables using results from mixed effects random intercept logistic regressions for support for environmental action with 95% confidence intervals, based on data from the Eurobarometer 91.3 (European Commission, Brussels, 2019) and OECD Social Expenditures (2019).

Moreover, for both dependent variables, it is clear that women are more likely to support the environment both in terms of their behaviour and policy preferences. More highly educated individuals exhibit higher support for individual and government environmental actions. With regard to individual environmentally-friendly behaviour, we find that elderly individuals with no education have a predicted probability of 21 percent compared to a probability of 47 percent for a similar individual with the highest education. Individuals with a left-wing political orientation are more likely to engage in environmental behaviour and to support national action than individuals with a right-wing orientation. Next, the effect of place of residence is different for each dependent variable: while living in a large town increases the likelihood to support national action towards energy efficiency, it decreases the likelihood for individuals' environmentally-friendly behaviour. However, the effect size for the place of living are small compared to education, subjective social class affiliation and age.

Turning our attention to cross-country differences, individuals in countries with high social expenditures appear more likely *ceteris paribus* to behave in an environmentally-friendly way. This effect is statistically significant at the one percent level and the change in predicted

probabilities associated with different welfare state generosity is very high for individual behaviour: individuals living in the country with the lowest generosity in our sample – Lithuania with 13.7 percent of GDP – have an average predicted probability of 27 percent compared to those in the most generous welfare state – France with 31.7 percent of GDP – with a nearly 62 percent predicted probability. By contrast, the effect of welfare state generosity on support for national environmental action is only statistically significant at ten percent level, although the magnitude of the effect is also high: the predicted probability increases from above 17 percent to nearly 80 percent when social spending is at its minimum vs. maximum sample value.

In appendix A.2.15, we report the average values for support for environmental action by welfare regimes. We find that individuals living in welfare state regimes with high generosity (Nordic and Continental) show significantly higher environmental individual behaviour than individuals in Eastern and Southern welfare state. By contrast, the results are again less clear for support for national action. Overall, we therefore find only partial empirical support for our hypothesis on the *synergy logic* of the welfare state: while we find clear support for the enabling role of the welfare state on individual behaviour, the results for support for national environmental action are less clear. We find no support for our hypothesis following *crowding-out logic*.[1]

In a second step, we want to find out whether the effect of welfare state generosity is particularly strong among insecure groups. We start by rerunning our models while including an interaction term between social spending as percent of GDP and the working class (subjective affiliation and occupation-based). The results are presented as predicted probabilities in Figure 2.2. Being working class has a predicted probability of less than 20 percent to engage in environmental behaviour in the least generous welfare states, whereas this predicted probability increases to more than 40 percent when social spending is at its most generous. The findings for the occupational working class are comparable: the predicted probabilities for environmental behaviour increase by more than 25 percentage points if social spending is set from its minimum to its maximum level.

The effect for support for national action is shown in the lower part of Figure 2.2. While the association is statistically significant, the magnitude of the effect is much smaller: the predicted probabilities increase from below 50 percent to above 60 percent if social spending increases from its minimum to its maximum sample values. The results for occupational classes (shown

[1] Note that scatterplots where the average country values are plotted, also support a positive relationship between the magnitude of social expenditures and support for individual and government environmental action (see appendices A.1.3 and A.1.4).

in the right panel) are comparable to those of subjective class affiliation. We also rerun our analysis when using interactions with welfare regimes instead of welfare state generosity (shown in appendix A.2.6): the average marginal effects for working class to engage in environmental behaviour or to support national policies is lowest in Eastern regimes and highest in Nordic regimes, which is consistent with our finding in Figure 2.2.

Taken together we interpret these results to be inconsistent with a *crowding-out logic*, but in line with a *synergy logic* between the welfare state and environmental support: by reducing economic risks and insecurities, social spending makes insecure groups more likely to support environmental action at the individual and national levels. However, we find important differences between the behavioural and attitudinal dependent variables: the welfare state seems to influence individual environmental behaviour more strongly than environmental policy preferences.

Figure 2.2. Predicted probabilities for environmental individual behaviour (top panel) and support for environmental national actions (bottom panel) at different levels of social expenditures

Notes: This figure plots predicted probabilities for environmental action at different levels of social spending and for different social classes, with 90% confidence intervals, based on data from the Eurobarometer 91.3 (European Commission, Brussels, 2019) and OECD Social Expenditures (2019).

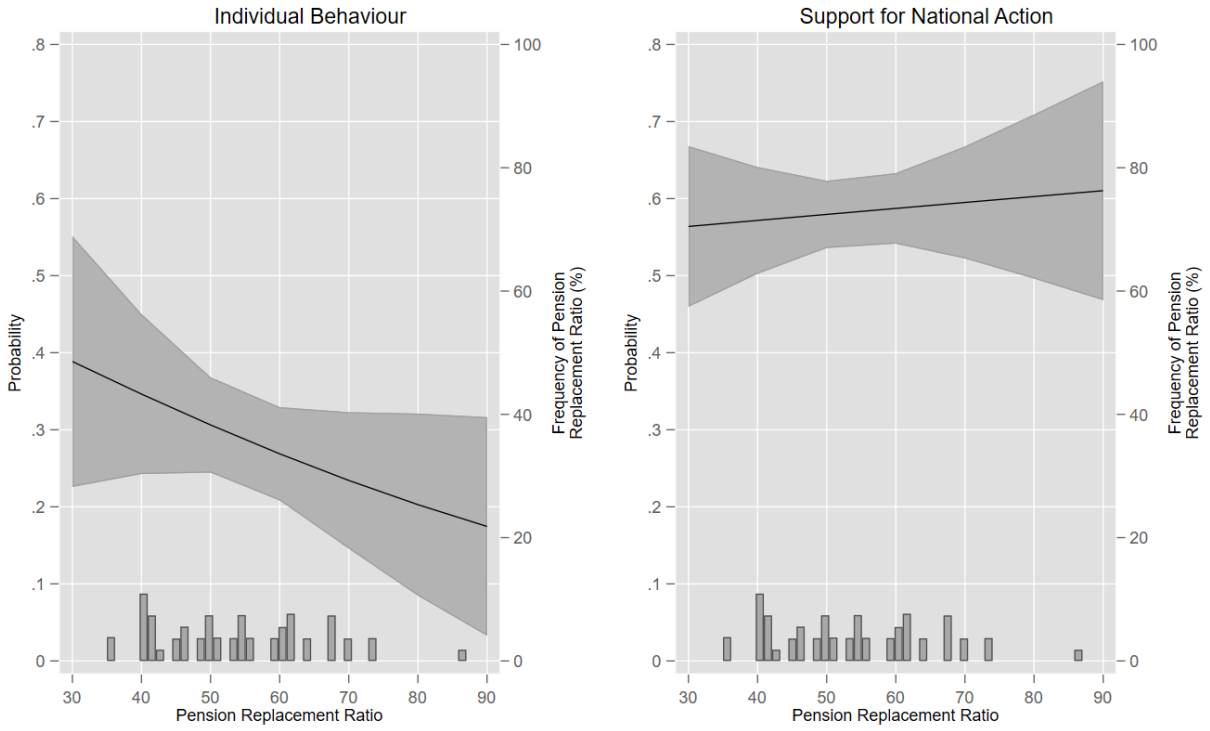
In a third step, we explore how more specific social benefits influence the behaviour and preferences of the elderly for environmental actions. Focusing on the interaction between being elderly and pension replacement ratio allows us to test more closely the logic of our argument for the case of a large and politically powerful social group. In Figure 2.3, we plot the predicted probabilities of both dependent variables among the elderly, for different levels of the pension benefit replacement rates. Individual environmental action is shown on the left-hand side, while support for national energy efficiency is shown on the right-hand side.

Starting with individual environmental behaviour, we find that the elderly are less likely to engage in environmental actions when the pension replacement ratio increases. The elderly have nearly 20 percentage points lower predicted probability to engage in environmental behaviour when the pension benefits are at their most generous compared to their lowest level: the predicted probability of pro-environment behaviour falls from around 37 percent to under 20 percent. However, the confidence intervals around these predicted probabilities are rather large. While these results therefore do not provide strong support for a *crowding-out logic* given the weak trade-off between welfare state generosity and environmental behaviour, they are at minimum not consistent with a *synergy logic*. Turning to the right side of Figure 2.3, we find a very weak positive relationship with large confidence intervals between pension replacement rate and support for national action among the elderly. In sum, we are able to reject the *synergy logic* for the elderly, but can only partly confirm the *crowding-out logic* for this social group. This suggests that the interplay between welfare states, social groups and environmental support are complex and partly dependent on the specifics of the social group and type of environmental actions under consideration.

We have so far only presented evidence linking individual characteristics, welfare state generosity and environmental attitudes. To explore the mechanisms underpinning these correlations, we turn our attention to a variable in the Eurobarometer capturing insecurity: individuals' ability to pay bills. As shown in Figure 4, the negative effects of being elderly and working class appear mediated by whether the respondents struggle to pay bills. More specifically, being working class is associated with a higher likelihood of being unable to pay bills, which in turn is associated with fewer individual environmental actions and – to a lesser extent – lower support for national environmental action. The mechanism via inability to pay bills remains statistically significant when controlling for other variables (see appendix A.2.12). By contrast, while the elderly are also less likely to support environmental action, they are less (rather than more) likely to be unable to pay bills. This could suggest either that other economic

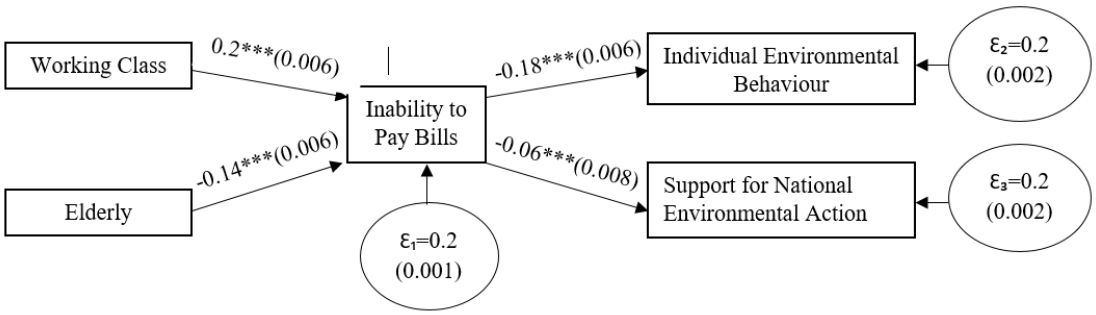
risks are at play or that the environmental attitudes of the elderly derive from other more 'cultural' factors, and/or are shaped by generational differences (see Inglehart, 1981).

Figure 2.3. Predicted probabilities for individual environmental action (left hand side) and support for environmental national action (right hand side) at different levels of pension benefit generosity



Notes: Predicted probabilities for individual environmental action (left-hand side) and support for environmental national action (right-hand side) at different levels of pension benefit generosity. Notes: Own illustration of predicted probabilities for different levels of pension replacement ratio and the elderly with 90% confidence intervals, based on data from the Eurobarometer 91.3 (European Commission, Brussels, 2019) and Eurostat (2018).

Figure 2.4. Generalized structural equation of mechanism 'inability to pay bills'



Notes: Own illustration of the GSEM results for support for environmental action, based on data from the Eurobarometer 91.3 (European Commission, Brussels, 2019). *** = 1% significance level, ** = 5 % significance level, * = 10% significance level, standard errors in parentheses, Ɛ = error variance.

In appendix A.2.13, we test an alternative mechanism operating via political ideology. For instance, the elderly might be less likely to support environmental action due to right-wing beliefs. While plausible, the results demonstrate that this is not the mechanism linking social groups to environmental preferences and actions. While a leftleaning political ideology is associated with higher support for environmental action, the elderly and working-class people are statistically not different to other social groups in terms of their political ideology. Therefore, we find some preliminary evidence consistent with a mechanism operating through economic insecurity linking social groups to varying support for environmental action.

2.5 Discussion and conclusion

This article investigates how insecurity and welfare state generosity influence environmental support by examining the preferences and behaviours of two insecure groups – the elderly and working-class people – and two kinds of environmental action – individual behaviour versus policy preferences. We theorize two opposing logics from the literature: while a *synergy logic* would imply that welfare state generosity is associated with more support for environmental action, especially among economically insecure groups, a *crowding-out logic* would suggest that it is associated with lower support for environmental mitigation.

Table 2.1. Summary of findings

	Population	*Working class*	*Elderly*
Individual environmental behaviour	Synergy	Synergy	Crowding-out
Support for national environmental action	Synergy / no effect	Synergy	No effect

Notes: summary of the empirical results in paper and appendix, based on data from the Eurobarometer 91.3 (European Commission, Brussels, 2019), (OECD Social Expenditures 2019) and Eurostat (2018).

Table 2.1 summarizes our empirical results. First, we find that the welfare state increases support for individual environmental behaviour, and to a much less clear extent for national level environmental action. Second, while generous social spending increase support for individual environmental action among the working class, the opposite is true for the elderly who are less likely to support environment action when pension generosity is high, although the evidence for the latter finding is less clear. Thus, both *synergy* and *crowding-out logics* find some support in our analysis of the welfare–environment nexus at the individual level. Third, with respect to support for national environmental action, we find clear support for the *synergy*

logic for the working class. Fourth, there is no evidence for a *synergy* nor for a *crowding-out logic* regarding elderly people's support for national environmental action.

The correlations we show can only be interpreted as consistent with our argument rather than definite evidence of a causal effect and our research design is by necessity further constrained by limited degrees of freedom at the national level. Nevertheless, our article represents a first attempt to theorize and empirically explore the relationship between the welfare state and environmental attitudes as well as behaviours, whereas previous work had focused on links between social policy preferences and environmental preferences or between environmental policies and social policies (for example, Fritz and Koch, 2019; Gough and Meadowcroft, 2011; Spies-Butcher and Stebbing, 2015). While exploratory, our findings also have important wider theoretical and policy implications. Theoretically, we provide a framework linking economic insecurity and welfare state policies, which have already extensively been discussed in political economy and welfare state literatures, to individual characteristics and environmental preferences, which have been the focus of political science and environmental studies. In terms of policy implications, our findings suggest that in countries where insecurity is high and/or not effectively addressed by welfare state institutions, governments will be less able to form a viable wide political coalition with the working classes in support for climate change mitigation. The importance of welfare state institutions for environmental actions intersects with other recent debates about the appropriate trajectory of future welfare state reforms, most notably universal basic income (Parth and Nyby, 2022; Rincón et al., 2022; Schwander and Vlandas, 2020; Vlandas, 2019). At the same time, they show that welfare state policies do not increase support for all social groups for all types of environmental solutions, since those who are elderly appear less likely to undertake environmental actions at the individual level, and do not change their support for environmental action at national level when pensions are more generous. Finally, there are several avenues for further research. First, future studies may need to further explore how *synergy* and *crowding-out* operate in different welfare regime contexts, for instance through more detailed country case studies. Second, we still do not have enough knowledge about what role (if any) other social and non-social policies have to address the source of this reluctance. Third, the temporality of the potential trade-offs between welfare state spending and environmental policies is not fully resolved. Fourth, trade union organizations and wage bargaining institutions could also in principle help address the insecurity of certain workers' groups (see Benassi and Vlandas, 2015 and 2021).

While it is true that in the long run climate change adaptation might be a 'free lunch', especially if the short-term costs of adaptation are lower than the long-term costs of doing nothing, in a

democracy the size and distribution of costs and benefits in the short term are the politically salient and important variables. To undertake a large-scale ecological transition requires political support by a large majority of the population and this is unlikely to be possible if both elderly and working-class individuals oppose such a transition. Thus, future research should therefore explore whether and how social policies can play a role in shaping a sufficient and politically viable coalition in favour of environmental action.

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3 On the moderation effect of work-family policies on pro-environmental behaviour of single mothers

Abstract. Single mothers are among the group with the highest risks of poverty. At the same time, pro-environmental behaviour research introduced the "motherhood effect", theorising that the caregiver and nurturer role of mothers makes them more likely to engage in pro-environmental behaviour. Considering that environmental action is often more expensive than conventional consumption (e.g. food or energy), it poses the puzzle how single mothers, given their higher economic risks and financial constraints, may show greater pro-environmental behaviour (PEB). A hypothesis is that economic insecurities make single mothers hardly able to choose for pro-environmental behaviour. An alternative expectation is that mothers compensate and save their resources to enable a sustainable lifestyle. This article formulates theoretical expectations on this group specific risks by focusing on the ability of generous work-family policies to moderate this relationship as research has found that these policies reduce poverty by giving various resources. For this purpose, I estimate a mixed effects linear model based on data from the International Social Survey Programme (2010,2020) and the OECD Family Database. The results based on at least 18 OECD countries indicate that generous spending on early childhood education and care increase the likelihood for PEB among single mothers but not among partnered mothers. Parental leave and employment indicators, however, do not increase the probability for PEB among single mothers. The paper contributes to the environment-welfare nexus by showing how variation in national work-family policies is associated with varying PEB among the economically deprived group of single mothers, demonstrating the need for holistic policy approaches to increase PEB and tackle the climate crisis.

Note: This chapter has not been published yet.

3.1 Introduction

Climate change mitigation not only requires joint efforts of states and companies, but also individuals need to intensify their pro-environmental behaviour (PEB). Previous literature has shown that individual pro-environmental behaviour strongly depends on regulations and incentives set by national policies. The focus there is primarily on the steering effects of energy, transport, and agricultural policies (e.g. Lucas et al. 2008; Stadelmann-Steffen and Eder 2020), to a much lower degree on the effects of social policies (Parth and Vlandas 2022). While former research has identified individual determinants for pro-environmental intention and behaviour of the population as a whole (Fritz and Koch 2019; Marquart-Pyatt et al. 2019, Otto and Gugushvili 2020), studies on economically deprived groups are rare (exceptions are Benegal 2018; Parth and Vlandas 2022). This study contributes to fill these research gaps by focusing on PEB of single mothers and how work-family policies moderate this relationship. The associated research question are: 1.) Are single mothers less likely to show pro-environmental behaviour than partnered mothers? 2.) Do work-family policies moderate the likelihood of single mothers to engage in such behaviour?

The focus on single mothers is motivated by existing conflicting expectations associated with these group characteristics: on the one hand, single motherhood is associated with one of the highest poverty risks in OECD countries. In the European Union (EU), where single parents constitute thirteen percent of all households with children of which the majority are single mothers, they even have the highest risk of poverty and social exclusion among all household types (European Commission 2019; Eurostat 2021). Given that eco-friendly products are mostly more expensive than conventional products, single mothers should be less engaged in PEB. On the other hand, environmental behaviour research theorises the “motherhood effect” meaning that the social role of mothers as caregivers lead them to greater awareness and engagement to address environmental issues. Since the survival of the offspring depends on the availability and quality of natural resources, mothers should naturally care about the preservation of such natural resources (Milfont et al. 2020). Single mothers therefore find themselves in a trade-off between their social role and economic capabilities. Studying these opposing theoretical expectations on PEB of single mothers empirically contributes to existing puzzles on the environment-welfare nexus. As climate change can be the cause and consequence for rising social inequalities, studying economically disadvantaged groups and their specific eco-social risks is of large real-world relevance to find effective and protective policy instruments. Thus, next to studying cost disparities of climate policies across different social groups (Markkanen and Anger-Kraavi 2019; Rausch and Karplus 2014; Tosun 2022), it

is argued that various public policies need to be evaluated along their eco-social risks to make the needed large transitions possible.

To reduce the risk of poverty among single mothers, several studies identified work-family policies as crucial institutions (Hübgen 2020; Misra et al. 2012). Following this, this study examines whether work-family policies not only reduce single mothers' risk of poverty but also allow them to exhibit more frequent pro-environmental behaviour (PEB). Broadening the research agenda by looking at a policy field that is not directly related to environmental outcomes takes the cross-cutting nature of climate change into account. As many climate and environmental policies are targeted to influence the behaviour of better-off individuals (e.g. subsidies for solar panels or energy-efficient constructions for houseowners), it is an open question whether the generosity of social policies as work-family policies is not only associated with lower poverty rates but also with a higher willingness and capability to spend these additional resources in PEB. In general, climate change and social justice are interlinked, meaning that economically disadvantaged groups are more vulnerable and structural solutions for that – as e.g. policies that consider these inequalities - still lack behind (Markkanen and Anger-Kraavi 2019). As climate change can aggravate socio-economic inequalities and as there is evidence that some mitigation and adaptation policies to climate change even deepen social inequalities, aspects of social justice are key for climate action.

Considering the interlinkage of climate change and social inequalities, this paper studies the relationship between single mothers and PEB in more detail by testing the expectation that the more generous the work-family policies in a country are, the more PEB single mothers demonstrate. For this purpose, I rely on survey data from the International Social Survey Programme (ISSP) in 2010 and 2020, covering at least 18 country years, and combine it with OECD statistics on work-family policies. Three categories of work-family policies are considered: early childhood education and care, birth-related and extended leave policies and labour market participation. The analysis is based on multilevel mixed effects linear regressions.

The article is structured as follows: in the next chapter, I describe the state of research on the relationship between motherhood and PEB and differentiate work-family benefits and their effects on single mothers. Based on this, I elaborate on a theoretical framework based on assumptions from political economy, from which I derive hypotheses in chapter three. Chapter four describes the method and data used for the analysis which is presented in chapter five. In chapter six, I discuss the results, relate them to previous findings and present some robustness checks. I conclude in chapter seven with the contributions of the paper for the environment-

welfare-nexus and show paths for further research on the issue of social justice in climate change.

3.2 State of research

3.2.1 The motherhood effect in pro-environmental behaviour research

Pro-environmental behaviour (PEB) can be defined "as behaviour that is undertaken with the intention to change (normally, to benefit) the environment" (Stern 2000: 408). Newer definitions add on to this by stressing the need of *caring* for environmental issues (Bloodhart and Swim 2019). Here, women come into focus since caretaking is traditionally associated with female norms and stereotypes. In fact, women tend to exhibit pro-environmental behaviour to a larger extent than men, are more likely to vote for ecological parties and more often report concern about climate change (e.g., Atkinson 2014; Dietz et al. 2002; Hunter et al. 2004; Kennedy and Kmec 2018; Panarello 2020; Vicente-Molina et al. 2018), even though there is variation between countries and over time (Hayes 2001; Xiao and McCright 2014 for China). Gender, but also education levels, are more important factors in explaining sustainability than income levels (Da Silva and Pownhall 2014). A possible reason for this gender gap in environmental advocacy is found in the idea of gender-identity maintenance, meaning that green behaviour and femininity are cognitively linked and men are more concerned to maintain their gender identity (Brough et al. 2016; Diekman and Eagly 2000; Swim et al. 2020). Other reasons are found in different social statuses and household tasks, risk perception and value orientation (Dietz et al. 2002; Vicente-Molina et al. 2018). For instance, the traditional separation of work makes women as housekeepers more likely to be responsible for the daily errands and therefore to have a higher knowledge on products' ecological differences (Kennedy and Kmec 2018).

Research argues that the gender effect becomes especially salient when women are mothers. The so-called "motherhood effect" describes the theoretical expectation that the social role of mothers as caregivers leads them to greater awareness and engagement to address environmental issues. It is reasoned with socialisation theory, arguing that certain taught gender norms lead to higher social responsibility and behaviour among mothers (Blocker and Eckberg 1997; Diekman and Eagly 2008; Zelezny et al. 2000). Accordingly, having children should increase the likelihood of women to engage in PEB as it activates the social role of women as caring for the health and safety of their children. The "motherhood effect" is related to the "parental roles hypothesis" (McCright 2010) that argues that gender differences lead to varying levels of environmental concern due to parenthood: While fathers are focused on securing

income and material well-being which is not related to pro-environmental behaviour, women care more about the health of their offspring which is related to PEB. A further related hypothesis in PEB research is the "legacy hypothesis", meaning that having children leads to considering the legacy left to the offspring which postulates no gender differences (Thomas et al. 2018). As the survival of the offspring depends on the availability and quality of natural resources, parents should naturally care about the preservation of such natural resources (Milfont et al. 2020).

With regard to empirical findings on the "motherhood effect", results are rare and mixed (for an overview, see Thomas 2018). Based on a representative survey in Australia, Williams and Ha (2013) find women with children to be more likely to perform PEB that is linked to the children's wellbeing, such as proper disposal of household chemicals. However, based on qualitative interviews, researchers find mothers increase their energy use and change their transport habits at the expense of the environment. Adding children to a partnered household therefore increases spending on fuels and energy which is the biggest CO2 emitting sector globally (see also Thomas et al. 2018). Longhi (2013) makes the point that studying individuals separately from their household context leads to biased findings, as they may be correct in the context of single households but not for couple and family households where individuals might sacrifice their environmental attitudes to prioritise the comfort for their children. For instance, cycling to work is not possible if the place of residence is chosen due to its closeness to the school. Thus, while some PEB are still an individual decision (e.g. turning the tap off when brushing the teeth) others are interlinked with household members (e.g. where to go on holidays and how much the home is heated) (Longhi 2013). Time and financial constraints are on average higher with more household members, but PEB differ by their kind. In sum, Longhi (2013) finds only little empirical evidence for the "motherhood effect": Comparing women in four different household types, she finds that single women household behave the most environmentally-friendly, followed by partnered women without children, followed by partnered women with children and lastly single mothers (see also Melo et al. 2018). However, former studies also demonstrate it is important to differentiate the various kinds of PEB by their affordability and "motherhood effect" (Steg and Vlek 2009; Lynn 2014). For instance, Milfont et al. (2012) demonstrate that individuals with children have higher support for climate change actions and adjust their voting preferences accordingly.

3.2.2 Work-family policies and poverty of single mothers

As the last section demonstrated, motherhood is an important explanatory factor for PEB, however, empirical findings are diverse and do not convey a clear picture. To understand this gendered environment-welfare-nexus better, I strive to analyse whether work-family policies exhibit a moderating influence on the relationship between single motherhood and PEB. The expectation is that policies can distribute resources to groups, thus allowing them to engage in PEB for which otherwise they would lack resources (Campbell 2003, Shore 2019).

Work-family policies, made to reconcile work and care responsibilities, represent important tools to increase mothers` employment rates and reduce the so-called "child-penalty", implying gender inequalities in labour market outcomes due to parenthood (Kleven et al. 2019). As becoming a mother is associated with time consuming caring responsibilities, many women abstain from re-entering the labour market. While partnered mothers mostly can rely on the income of their partner, single mothers encounter the problem of poverty-stricken earning loss. Generally speaking, marriage or cohabitation lower poverty risks which makes single mothers the especially economically deprived group (Edin and Kanfalas 2005). The share of single parents/mothers in the overall OECD population is low, but the number increased over time with a rather high level of cross-country variation (Bernardi and Mortelmans 2018). While 47 percent of single-parent households are at risk of poverty according to estimations of the European Commission (2019), 21 percent of two-parent households are at risk. Therefore, policies that mediate poverty and increase the likelihood for re-entering the labour market are at the forefront, also to change behavioural choices (Hübgen 2020).

As countries support single parenthood differently through work-family policies, poverty levels also vary between them (e.g. Misra et al. 2012). In general, subsidised childcare for toddlers has a poverty reducing effect on mothers and single mothers (Misra et al. 2007). Generous family benefits and a broad supply of public childcare together reduce the poverty risk of single mothers substantively (Brady and Burroway 2012; Misra et al 2007, 2012). While childcare for older children has no significant effect on poverty and employment maintenance among single mothers, it has a positive effect on employment of partnered mothers (Misra et al. 2012). Women who live in countries with 1 percent higher spending on family benefits of GDP are 2.3 percent less likely to fall into poverty, controlling for age, employment, education, partnership, and parental status (Misra et al. 2007). The effect of childcare expenditures on poverty reduction is found to be even higher than the effect of overall family benefits (ibid.). In contrast, long paid parental leave and family allowances have mixed results: while they are associated with less poverty in some countries they are associated with higher poverty rates in

others since they might increase the caregiving role of women (Maldonado and Nieuwenhuis 2014; Misra et al. 2007; Nieuwenhuis et al. 2012). Others find positive effects for family allowances only for single mothers, reducing the probability of poverty from 0.14 to 0.06 from a country without to a country with generous family allowances (Misra et al. 2012). As "the policy effects for parental leave and childcare are playing out through mothers' employment" (Misra et al. 2012: 120), it is also important to look at labour market participation rates (Hübgen 2020). Following that, this study also looks at the labour market participation of single mothers by measuring employment rates and the distribution of working hours for single parents. To sum up here, reconciliation policies that enable to combine family and work life seem suited to reduce the risk of poverty among single mothers and might enable them to spend resources on environmental behavioural choices (Maldonado and Niewenhuis 2014).

3.3 Theoretical framework

3.3.1 Political economy: Capability of environmental behaviour for single mothers

The likelihood for PEB is best understood as a function of willingness and capability. The standard behavioural assumption used in economics stems from rational choice theory, where individuals are self-interested, utility maximising and therefore unlikely to engage in PEB, as contributions to the public good "environment" do not directly profit them (Marciano and Roussel 2014). To explain why mothers still engage in such behaviour, their social norms need to be consulted as they directly and indirectly impact willingness and behavioural outcomes (Thøgersen 2014). PEB is driven by social norms and values such as attention, responsibility, and reactivity which need to be incorporated into the model of economic behaviour (Petit 2014). According to this and as outlined in chapter 2a, the willingness for PEB should be higher among mothers compared to women without children. As mothers are focused on ensuring a good living standard for their children, they are interested in preserving the existence and quality of natural resources (see Milfont el al. 2020). This "motherhood effect" should at least increase the willingness for PEB (Thomas et al. 2018). However, willingness for a certain behaviour is often unequal to the de facto behavioural outcome, even though much of sociological and economic research rely on survey data based on intention/willingness (for a combination of intention and behaviour, see Norton et al. 2017). Even though willingness is a necessary condition for action, capabilities are inter alia based on resources whose absence can even neutralise the positive effect of willingness. By integrating such economic factors into a social cognitive model of behaviour, this slim explanatory framework advances the theory of planned behaviour (Ajzen 1988) which ignores socio-demographic and socio-economic variables to

explain behaviour. As Panarello (2020) finds, financial uncertainty also strongly influences environmental concern. Besides, if individuals are confronted with a bad economic situation, they even perceive environmental science facts differently, denying self-responsibilities and options for action (Scruggs and Benegal 2012). As single mothers have on average a lower economic status compared to partnered mothers, I expect to not confirm the "motherhood effect" for single mothers but to observe instead lower PEB among single mothers (see also Melo et al. 2018). Thus, the expectation is that economic capabilities trump social norms.

H1. Single mothers are less likely to engage in pro-environmental behaviour than partnered mothers.

3.3.2 Intersectoral policy effects

How do work-family policies influence the capability of single mothers for PEB? I argue here that work-family policies enable single mothers to engage in PEB as they give resources to act according to their social norms and values, so that their willingness matches their capabilities. As a consequence, institutional differences in work-family policies between countries should result in varying PEB among single mothers. Policies are understood here as explanatory factors for social processes and behavioural outcomes (Schneider and Ingram 2005; Skocpol 1992; Soss and Schram 2007). Policies are not only products in the policy process but also influence the preferences, beliefs, and behaviour of the public. They can have resource effects meaning that policies provide specific benefits in the form of goods or services or impose burdens by increasing costs or regulating behaviour (Jacobs and Mettler 2018). Here, I focus on this resource effect of work-family benefits, arguing that the more generous they are, the more likely that single mothers make environmentally-friendly choices that are associated with higher costs. Generosity does not only mean higher spending on work-family policies, as e.g., childcare expenditures, but also higher work-life balance and flexibility, as e.g., long paid parental leaves or low average working hours. Through this increased work-life balance and flexibility, it is argued, that single mothers not only have more financial capabilities but are also more capable to spend time for pro-environmental choices. The argument is that work-family policies increase the capability for PEB, so that the theorised "motherhood effect" is also observed for the economically deprived group "single mothers". As former studies indicated work-family policies as crucial to shape the economic position of single mothers, I focus on the effect of work-family policies here. The studied policy effect is described as intersectoral policy effect because the policy field where the policies were adopted (family politics) are expected to influence outcomes in another policy field (environment). Thus, the departmental principle with separated financial equipment does not necessarily result in separated beneficial results. Work-

family policies enacted by ministries of family affairs have the aim to reduce poverty risks of children and improve the well-being of families. Consequently, their success is measured by these parameters. They are not intended to influence PEB which lies in the resort of ministries of the environment or consumer protection. Following this, work-family policies are expected to have positive externalities regarding PEB. By focusing on these intersectoral effects, the cross-sectoral character of environmental and climate action becomes clear. In the following, I test the moderation of work-family policies for the likelihood of single mothers to engage in pro-environmental behaviour. I expect that work-family policies have a larger effect on the economically deprived group of single mothers than on partnered mothers, because the resources of the welfare state are of greater importance here. Following this, I formulate the following hypothesis:

H2. Single mothers are more likely to engage in pro-environmental behaviour if work-family policies are generous.

3.4 Identification strategy

I estimate multilevel mixed effect linear models to test the relationship between single motherhood and PEB and whether work-family policies moderate this relationship. The two-level models based on individual survey data and country statistics are estimated for single mothers in contrast to partnered mothers. I use both fixed and random effects because I expect a fixed difference between "country years" and within-group homogeneity. This means that explanatory factors (e.g. education) have a certain fixed relationship to the outcome variable PEB but the effects on the outcome variable within the group variable "country year" are similar.

I rely on the International Social Survey Programme (ISSP) in 2010 and 2020 which represent cross-country surveys focusing on environmental attitudes and behaviour. This individual-level data is matched to country-level data from the OECD Family Database. As the ISSP of 2020 so far only contains survey data from 14 countries, I added the 2010 database with 36 countries to increase the degrees of freedom for the second part of the analysis, the multilevel estimation. As a result, I control for year but do not expect differences between both observation times. On the one hand, the overall environmental behaviour should increase in 2020 due to higher climate change salience, but this change, on the other hand, should not influence single mothers specifically. From the 50 country years, I deleted all survey data from countries that are not part of the OECD as I only have access to statistics on work-family benefits in OECD countries. This resulted in 39 country years and 30 countries.

I created a summative environment index that ranges from one to four for five items that are part of the 2010 and 2020 survey: Avoid buying certain products for environmental reasons, saving or reusing water, reducing energy or fuel at home for environmental reasons, cutting back on driving a car for environmental reasons and buying fruit and vegetables without pesticides or chemicals. The minimum is one environmental activity and the maximum are four environmental activities in the sample. All behaviours are clearly labelled as environmental action in the survey which increases the validity and reliability of the measurement. The principal factor analysis resulted in a factor loading of at least Cronbach`s α=0.60, indicating that the items match on a scale. The items have a different price sensitivity: while some behaviours are available to all individuals due to their cost neutrality, others require additional financial investments. Besides I expect a "motherhood effect" meaning that items differ on whether they are related to the wellbeing of children. As a result, I correlated the individual environmental items with motherhood and income level but did not find differences in correlation. Thus, interestingly, both high income and motherhood are associated with lower values for environmentally behavioural items. To sum up, I rely on one PEB index containing five items that relate to environmental action in the private sphere. As former studies have shown that the purchase of organic food is positively related to parenthood (Ha and Williams 2013; Schäfer et al. 2012), I use this dependent variable as a robustness check (see Appendix B2 and B6).

For the independent variable "single mother", I rely on gender, partnership status and children living in the household. Thus, if a woman has children that already moved out, she is coded as not having children as I expect effects from motherhood with children in household. The variable is coded binary, where "0" includes partnered mothers and "1" single mothers.

As controls at the individual level, I rely on the most prominent socio-demographic and socio-economic variables. As single mothers are often found to be less educated and working in lower-skilled and worse-paid jobs than partnered mothers, I control for education levels that are measured by four levels (Stewart 2009; Zagel 2014; Zhan and Pandey 2004). In addition, I include birth year as a control variable and personal income transformed into US dollar purchasing power parity. Besides, I include the number of children living in a household, expecting that an increasing number is associated with higher financial restraints. I also control for environmental concern as this item proxies the willingness for PEB.

This study focuses on the three main areas of work-family policies: early childhood education and care, birth-related and extended leave policies and labour market participation (see also Boeckmann et al. 2012; Gornick and Meyers 2003). These work-family policies are

especially relevant to single mothers who take care of young children as they allow them to take a break from work when children have been born and to rely on subsidised childcare facilities to re-enter the labour market. Table 3.1 summarises and describes the used indicators. In sum, I rely on six indicators based on the OECD Family Database. In category two, I left parental leave wage replacement rates out because the available data for this indicator is only from 2014. As I focus on survey data in 2010 and 2020, using country data from 2014 would be too lagged or too far in the future.

Table 3.1. Description of work-family policies

Category	Work-family policy	Description (if applicable)
Early childhood education and care	Childcare expenditures as percentage of GDP	covers all public spending (in cash or in-kind) towards formal day-care services and pre-primary education services
	Percentage of children between 0-2 years enrolled in publicly supported childcare services	-
	Percentage of children between 3-5 years enrolled in publicly supported childcare services	-
Birth-related and extended leave policies	Length of paid maternity and parental leave available to mothers	Maternity leave refers to the number of weeks of job-protected leave available for mothers just before and after childbirth. Parental leave with job protection refers to the number of weeks after maternity leave which a woman can take as parental leave with her job protected, disregarding payment conditions.
Labour market participation	Employment rate of single mothers	15-64 years old women with at least one child under 15 years
	Percentage of single parents with 30 to 44 working hours weekly	Share of employed single parents with at least one child aged 0-14 working between 30 to 44 hours weekly

Notes: Indicators based on the OECD Family Database, selection partly based on the Work-Family Policy Indicators (2012), own illustration.

I use childcare expenditures as percent of GDP as former studies found that childcare expenditures reduce poverty of single mothers and partnered mothers (e.g. Misra et al. 2012). Consequently, also PEB should increase with higher resources/capabilities. In addition, I add the share of children with the age between 0 to 2 years, and 3 to 5 years, in publicly subsidised childcare, expecting that a higher share expresses higher work-life balance and more time and financial resources for PEB. I also use the duration of paid parental leave for mothers, because there is some evidence that this reduces economic risks as well (Maldonado and Nieuwenhuis 2014; Misra et al. 2007; Nieuwenhuis et al. 2012). Since employment plays a key role that policies unfold their effectiveness (for instance, public childcare only reduces poverty if single mothers participate in the labour market meanwhile), I use employment rates of single mothers, expecting that larger employment rates are associated with less poverty and more financial

capabilities for PEB. Finally, I include the share of single mothers working between 30 to 44 hours per week, expecting that income generating from a (nearly) full time job should reduce poverty and enable PEB. As a control at the country level, I include the share of children living together in a household with a single parent. It is expected that the frequency of single parenthood influences the design and need for work-family policies, which is why I control for this factor here.

The descriptive statistics for the individual and country level variables can be found in Table 3.2. Further information on the variables are found in the description of variables in Appendix B1.

Table 3.2. Descriptive statistics

	Variable	**n**	**Country years**	**min**	**max**	**Mean (st.dv)**
Individual level	Environmental behaviour index (PEB)	25,244	39	1	4	2.22 (0.73)
	Single mother (0=mother, 1=single mother)	8,487	37	0	1	0.23 (0.42)
	Number of children living in household	50,836	38	0	10	0.48 (1.02)
	Income (personal, in US$ PPP)	31,481	36	0	5,463,884	7428.04 (82,272.79)
	Education level (four levels)	53,124	39	0	4	2.80 (1.13)
	Birth year	53,762	39	1911	2004	1962 (17.82)
	Environmental concern	53,324	39	1	5	3.72 (1.07)
Country level	Year	54,269	39	2010	2020	2012.8 (4.5)
	Childcare expenditures as % of GDP	54,269	39	0.15	1.81	0.71 (0.36)
	% of children between 0-2 years enrolled in publicly supported childcare services	42,377	30	0.02	0.553	0.31 (0.14)
	% of children between 3-5 years enrolled in publicly supported childcare services	45,945	32	0.468	1	0.814 (.167)
	Length of paid maternity and parental leave available to mothers	49,948	35	0	164	48.64 (42.89)
	Employment rate of single mothers	46,092	33	32.6	86.5	67.56 (11.47)
	% of single parents working between 30 to 44 hours weekly	30,023	23	37.8	92.1	70.32 (14.67)
	% of children living with a single-parent[1]	51,477	37	5.9	31.8	16.74 (5.76)
	Tax difference (133% of average income)[2]	51,196	37	-60.4	5.7	-14.68 (15.27)

Note: own illustration based on the ISSP 2010 and 2020, OECD Family Database

[1] Used as additional measurement in Appendix B.4

[2] Used as additional measurement in Appendix B.4

3.5 Results

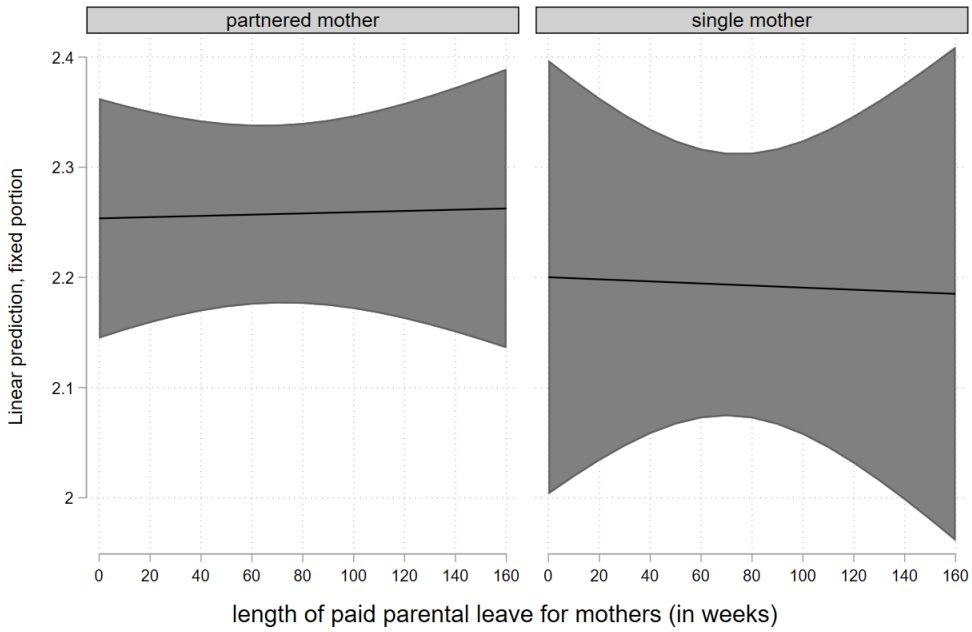
To answer both research questions, I estimated mixed effects linear models with country-year clustered robust standard errors. To find out whether single mothers are less likely to engage in PEB (hypothesis1), I rely on a model without country-level variables (see Appendix B.2). The results indicate that single motherhood is negatively associated with pro-environmental behaviour but the effect is not significant. Thus, while the direction of the coefficient corresponds to my expectation in hypothesis 1, arguing that single mothers as economically deprived group are less capable to engage in PEB, I nevertheless have to reject this hypothesis due to the lack of statistical significance. Regarding the individual control variables, Appendix B.2 shows interesting results: while education and the number of children in a household are insignificant, I find a negative significant effect for birth year, a positive significant effect for personal income and a highly significant positive effect at the 1% level for environmental concern. Therefore, higher age and income as well as higher environmental concern are associated with PEB. The effects of these individual-level control variables are robust in the further models with the exception of personal income, which is insignificant when controlling for the share of children in publicly financed childcare.

To test the theorised moderation effect in hypothesis 2 that is in the foci of this study, I modelled interaction terms between single mothers and work-family policies. As the number of country years is lower than 30, I mostly included only one country-level variable together with the variable "year" at a time. All six indicators for work-family policies are coded as such that higher values express higher generosity to facilitate interpretation. The results based on the interactions between single motherhood and specific work-family policies are presented as predicted probabilities. While Figure 3.1 reports the results for the category "Early childhood education and care", Figure 3.2 reports the findings for the category "Birth-related and extended leave policies" and Figure 3.3 for the category *"*Labour market participation*"*. These illustrations also allow to compare the effect sizes between single mothers and partnered mothers, but for a more accurate measurement, I report the average marginal effects in Appendix B.7, 8 and 9. All key results found in the appendix are described and discussed in more detail in the discussion chapter. In the following, I describe the results in figures 3.1 to 3.3 to test hypothesis 2.

Figure 3.1 consists of three graphs: the first shows the predicted probabilities for environmental behaviour of single mothers with increasing childcare expenditures (as % of GDP). The second graph illustrates the predicted probabilities of single mothers for PEB if the share of children between 0-2 years in publicly financed childcare increases and the last graph

for the case when the share of children between 3-5 years in publicly financed childcare increases. The interaction terms on which the predicted probabilities are based on are positive and significant for all three "early childhood education and care" indicators (see also Appendix B.5). This indicates that the effect of these three work-family policies on PEB is higher for single mothers than for partnered mothers. If childcare expenditures (as % of GDP) increase from 0.15 to 0.75, single mothers increase their PEB from 2.10 to 2.25 on a scale from 1 to 4, ceteris paribus. In contrast, the predicted probability for partnered mothers decreases in the case of increasing childcare expenditures from 2.29 to down to 2.08. If childcare expenditures are at its maximum (=0.75% of GDP), single mothers are more likely than partnered mothers to engage in PEB. This finding is very interesting as it highlights that generous work-family policies can not only increase the capabilities of the economically deprived group of single mothers, but even lead them to exceed partnered mothers in PEB. The other two graphs in Figure 3.1 support this finding: if only 2 percent of children between 0-2 years attend publicly financed childcare, single mothers have a predicted probability of 2.11 (on a scale from 1 to 4) to engage in PEB. If 52 percent of children between 0-2 years attend publicly financed childcare, single mothers have a predicted probability of 2.29 (on a scale from 1 to 4) to engage in PEB, all things equal. This increase in 6.6 percentage points is associated with a decrease in 3.3 percentage points for partnered mothers, who are less likely to show PEB if more children in this age group attend publicly financed childcare. The largest effect for single mothers is found in graph 3, showing that the predicted probabilities for PEB among single mothers increases from 1.95 to nearly 2.3 if the share of children between 3-5 years old attending publicly financed childcare increases from 46% to 100%. Publicly financed childcare for this age group has no effect on PEB of partnered mothers. In sum, Figure 3.1 supports the empirical expectations in hypothesis 2 where I expected that generous work-family policies moderate the likelihood of single mothers to engage in pro-environmental behaviour. Single mothers are more likely to show the theoretically described "motherhood effect" if the welfare state gives them the capabilities to do so. As public childcare allows single mothers to participate in the labour market and to take time off from care work, they are more capable to engage in PEB. Recalling here the measurement of PEB as an index of pro-environmental consumption, transport, energy and water use, it demonstrates that PEB not only involves more financial but also more time and mental resources.

Figure 3.1. Early childhood education and care: Predicted probabilities for pro-environmental behaviour

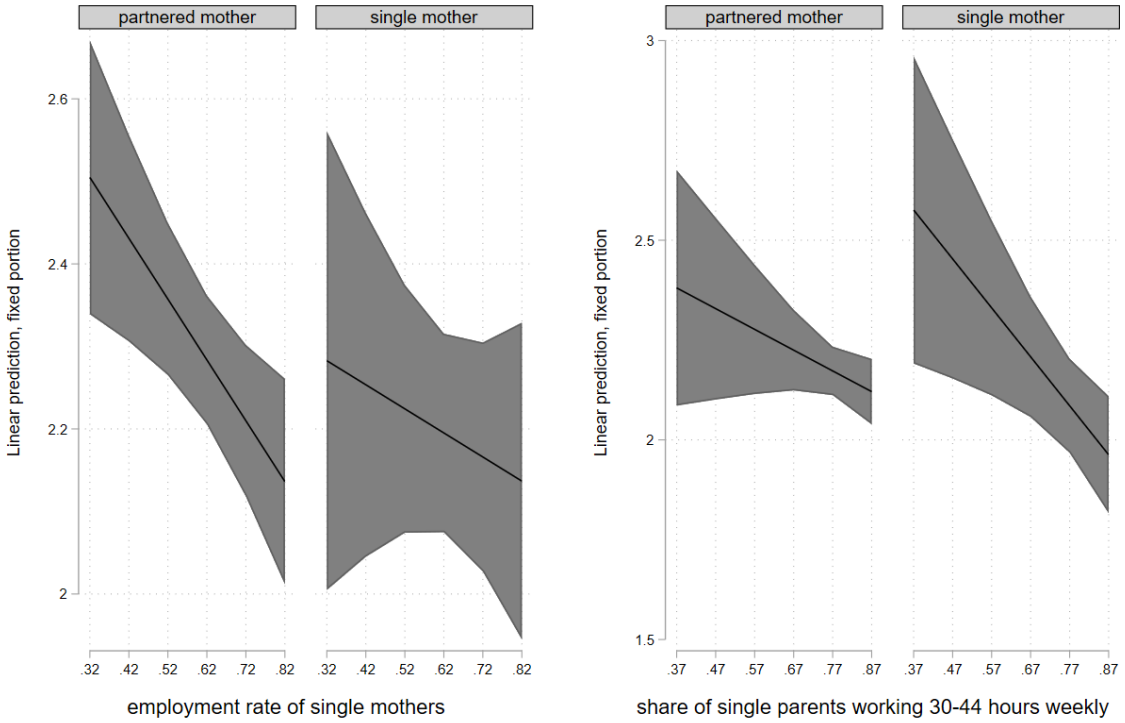


Notes: Own illustration of predicted probabilities with 95 percent confidence intervals, based on data from the ISSP 2010 and 2020 and the OECD Family Database.

Finally, Figure 3.2 describes the results for PEB based on the interaction between indicators on "labour market participation" and single mothers. The left graph shows the employment rate of single mothers on the x-axis, while the right graph has the share of single parents working between 30 to 44 hours per week on the x-axis. The interaction term for employment rates is insignificant, while the interaction term for working hours is negative significant at the 1%-level. The later means that single mothers are less likely to engage in PEB if the share of single parents working 30-44 hours increases, all factors equal. The effect for employment rates is especially large for partnered mothers, where the predicted probability for PEB decreases from 2.5 to 2.1 if the employment rate for single mothers is at its maximum. This finding is, however, less meaningful as the work-family policy indicator "employment rate" is only based on the one of single mothers and not partnered mothers. The negative effect of the moderation is large for single mothers: While single mothers have a predicted probability of 2.57 if the share of full-working single mothers is at its minimum (=37%), it decreases to 1.96 if the share of full-working single mothers is at its maximum (=87%). This finding shows that long working hours for single mothers are associated with less pro-environmental behaviour, which is surprising, as I expected longer working hours to be associated with higher income and more capabilities to engage in PEB. Reasons for these unexpected empirical results might be based on the high

variance of the country sample (e.g. with regard to employment regimes and protection) and missing information on wages[1]. In countries where employment protection and social benefits are low, individuals with low wages and long working hours are likely to be less engaged in PEB as they are more concerned about current socio-economic needs. The opposite theoretical expectation is that single mothers living in countries with high social benefits and services are working long hours because they are employed in high-skilled jobs with leadership responsibility, leading them to have only little time resources to engage in PEB. Looking at the data, I find countries from Eastern Europe (Hungary, Slovenia) but also countries from Northern Europe (Denmark) among those with the highest share of single parents working full time. They have very different employment regimes and labour market regulations which point to the argument that the high variance and the lack of data on further labour market variables might lead to these unexpected findings. In sum, Figure 3.2 does not confirm the expectations of hypothesis 2. While part of this might be explained by the small sample size.

Figure 3.2. Labour market participation: Predicted probabilities for pro-environmental behaviour



Notes: Own illustration of predicted probabilities with 95 percent confidence intervals, based on data from the ISSP 2010 and 2020 and the OECD Family Database.

[1] The personal income variable captures all kind of incomes (e.g. earnings, transfers, rents), not only wages

To summarise the empirical results based on the predicted probabilities, I can confirm hypothesis 2 for the category "Early childhood education and care", but find no support for the categories "Birth-related and extended leave policies" and "Labour market participation". In addition to the predicted probabilities, I also estimate average marginal effects for the three categories of work-family policies (see Appendix B.7, 8 and 9). The results support the previous ones: while I find significant positive average marginal effects for the childcare indicators (Appendix B.7), I find no relationship for parental leave (Appendix B.8) and contradictory average marginal effects for the employment indicators (Appendix B.9). Thus, while the three childcare indicators especially moderate the relationship between single mothers and PEB, full-time working hours have a negative effect on single mothers but a positive effect on partnered mothers. The other indicators have no moderating effect on PEB.

To be better able to classify the empirical results, I did a few robustness checks and diagnostics I describe in the next section.

3.6 Discussion

This chapter discusses the following questions related to the empirical results: 1.) Do the results depend on the choice of the dependent variable as a pro-environmental behaviour index? 2.) Do work-family policies also influence PEB directly? 3.) How do other country-level variables influence PEB? 4.) Are the models robust regarding the model assumptions? In a next step, the empirical results are placed in the existing literature and reasons for unexpected findings are discussed.

To examine firstly whether the design of the pro-environmental behaviour index influenced the results, I estimated the same mixed effects linear regressions for buying organic vegetables and fruits. It is expected that mothers caring for the health and wellbeing of their children put an emphasis on buying food from organic origin (see Appendix B.2 and B.6). Appendix B.2 model 2 shows whether single motherhood is associated with buying less/more organic food without including work-family policies at the country level. The results are almost similar to the PEB index: single mothers are less likely to buy organic food and the effect is also insignificant. Regarding the interactions between single mothers and work-family policies, Appendix B.6 reports the results. Column 1 shows a negative direct significant effect for childcare expenditures on buying organic food, which becomes insignificant when interacting with single motherhood. Recalling here that childcare expenditures were insignificant and became positive significant when interacting with single mothers for the PEB index, this finding is surprising. With regard to the share of children in publicly financed childcare, the results are

mixed: while the share of children between 3-5 years in childcare is not directly or indirectly related to buying organic food, I find a negative direct and a positive indirect effect for the share of children between 0-2 years in publicly financed childcare. The latter finding is very interesting as it shows that the scope of childcare facilities are negatively associated with buying organic food but become positive when interacting with single mothers. Thus, single mothers are more likely than partnered mothers to buy organic food when the share of children between 0-2 years in publicly financed childcare is increasing. This is also found for the main dependent variable, the PEB index. Regarding parental leave and labour market/employment indicators, the results are nearly comparable to the PEB index. To sum up, the choice of the pro-environmental behavioural indicator seems to influence the results to a certain degree, but the overall findings are consistent.

Secondly, I test whether work-family indicators also have a direct effect on PEB by inserting them separately into each model (see Appendix B.3). Of the six work-family policies, four report no statistically significant effect, while both indicators on labour market participation are significant and negative associated with PEB, demonstrating all in all that work-family policies as such tend not to be associated with PEB (if not interacting with individual characteristics). This finding supports my expectations as it highlights that the generosity of work-family policies - that match certain welfare state regimes - do initially not correlate (strongly) with PEB. Thus, the generosity of work-family policies is not just a proxy for the wealth of nations or awareness for environmentalism. Regarding both indicators on the "labour market participation", I find negative significant effects. Thus, a higher employment rate of single mothers and a higher share of single parents in full-time jobs is associated with less pro-environmental behaviour, ceteris paribus. This is surprising as I expected both indicators to increase the economic well-being of single mothers and lead to more PEB. Again, the results on "labour market participation" need to be considered in the light of the variables' high imbalance among OECD countries and missing further labour market indicators. For instance, single countries with very high or low employment rates might influence the results. Case studies and more detailed labour market indicators would help to solve this puzzle.

In a third step, I looked at the relationship of further country-level indicators on PEB in Appendix B.4 to test alternative explanations. I chose two related indicators - the share of children living with a single parent and the differences in net household transfers to government between single-earner and equal dual-earner couples, for couples with household earnings equal to 133% of average earnings. There is a possibility that a higher prevalence of single motherhood impacts generosity and policy design but also the capabilities of single mothers for

PEB. Besides, countries that have a negative balance of transfers and taxes to single-earner households have more generous social benefits to single parents which should increase their capabilities. The findings in Appendix B.4 demonstrate that both indicators are insignificant.

In a fourth step, I tested the assumptions of the core multilevel models based on interactions between work-family policies and single mothers which are reported in Appendix B.5. To correct for potential inaccurate standard errors for the random effects at level 2, I rely on robust variances in all reported models (Maas and Hox 2004). This is applied to ensure homogeneity of variance. Appendix B.10 reports six graphs with the standardised residuals for all six interactions with work-family policies. If the residuals follow the normal distribution, they should group around the linear line. Appendix B.10 shows that most residuals follow the normal distribution strictly with deviations at the margins. These deviations are, however, small, which is why I assume a normal distribution of residuals here. I also checked for the omitted variable bias, finding insignificant results for all six models which indicates that there is no evidence that the model is wrongly specified.

To connect the empirical results into the existing literature, I can largely support previous findings: in accordance with Longhi (2013) and Melo et al. (2018), I find single mothers less likely to engage in PEB. Comparing them with partnered mothers, however, does not lead to a significant difference between both groups. Similar to Parth and Vlandas (2022) I find an enabling moderating effect of social policies for economically disadvantaged groups, thus the more generous social/work-family policies are, the more likely are disadvantaged groups to engage in PEB. This demonstrates that it`s possible to kill two birds with one stone: increasing pro-environmental behaviour and decreasing socio-economic deprivation. This study therefore provides further evidence that the welfare-environment nexus does not need to be thought of as a trade-off but rather as a convergence. Referring to the literature on work-family policies, I can confirm the mixed effects of different work-family policies: while childcare expenditures decrease poverty of single mothers (Brady and Burroway 2012; Misra et al 2007, 2012) and increase their PEB, the results on family allowances are mixed (Maldonado and Nieuwenhuis 2014; Misra et al. 2007; Nieuwenhuis et al. 2012).

This brings me to find possible explanations for unexpected findings: I find no moderating effect for “birth-related and extended leave policies”, which is, on the one hand, supported by the literature on poverty and work-family policies (ibid.), but on the other hand, also plausible on theoretical grounds. Leave policies only capture a relatively short period of time after birth. As they ensure that parents do not need to worry about missing income during the first weeks after birth, their effect on behavioural change might be limited. In contrast, childcare structures

and expenditures should have a larger and longer effect on PEB as children attend them over several years while mothers re-enter the labour market and public life. In addition, the insignificant findings for hypothesis 1 were surprising. Even though single mothers are found to be less likely to engage in PEB, the effect was not significant. To a certain degree, this finding might result from the small sample size of single mothers (e.g. only 20 respondents indicated being single mothers in Canada 2010 compared to 97 partnered mothers, or 23 single mothers in Germany 2020 compared to 138 partnered mothers). To find out whether there is in fact no significant difference between partnered and single mothers, further studies should use more elaborated methods, for instance propensity score matching, to robustly confirm this finding.

3.7 Conclusion

This study contributes to the research on the environment-welfare nexus by focusing on the vulnerable group of single mothers and how cross-national differences in the generosity of work-family policies moderate pro-environmental behaviour of this economically disadvantaged group. Based on the assumption that behaviour is a function of willingness and capabilities, single mothers are expected to have the willingness due to their role as mothers (see the so-called "motherhood effect") but lack capabilities due to their high risk of poverty. Since generous work-family policies increase recipients' necessary resources, e.g. by being able to participate in the labour market, I expect these policies to positively moderate the relationship between single motherhood and pro-environmental behaviour (PEB). By researching the effect of work-family policies on PEB, this paper helps to fill the research gap on how the policy environment and monetary issues affect PEB (Tosun 2022).

To test these hypotheses, I opted for mixed effects linear models based on survey and country level data of at least 18 OECD country years. I developed a pro-environmental behaviour index based on ISSP survey data from 2010 and 2020 and merged individual characteristics with work-family policies and related country level controls. To test the expected moderation effects of six different work-family policies, I estimated interaction terms, reported their effect sizes as predicted probabilities and also visualised these with average marginal effect plots. The main findings can be summarised as follows: single mothers are not statistically more or less likely to engage in PEB than partnered mothers. While work-family policies on early child education and care increase the probability of single mothers to engage in PEB, they rather decrease the probability of partnered mothers to engage in PEB. The two other categories of work-family policies – the duration of parental leave and labour market participation – have no significant effect or the opposite effect than the expected one. The higher the employment rate of single mothers and the higher the share of single mothers working full time, the lower the probability

for PEB. The results demonstrate the variety and complexity of work-family policies. While childcare expenditures and structure seems to especially increase pro-environmental behaviour of vulnerable groups – e.g., by enabling them to participate at the labour market and having the capacities to engage in PEB – other work-family policies have not the expected enabling effect on single mothers.

The paper makes conceptual and empirical contributions. First, the division into willingness and capabilities allows to clearly differentiate expected effects of different groups on behaviour. For this endeavour, the paper combines political economy, sociological, and public policy research into a straightforward, testable design. Second, it contributes to the research gap on how social policies affect environmental outcomes. Only few studies looked at cross-national differences in social policies and its effect on environmental behaviour of economically disadvantaged groups (exception are Parth and Vlandas 2022). By doing so, the article has high practical relevance by demonstrating the feasibility to align welfare and climate mitigation goals with public policy-making. As climate mitigation is a cross-cutting issue, it is important to look at such intersectoral policy effects as they give an impression which - at a first glance unrelated - factors influence environmental behavioural outcomes. Policies directly labelled as climate-friendly, especially in the energy or transport sector, might only impact a small, better-off share of the population. As climate mitigation requires financial, time and cognitive resources, social policies might play a key role to influence the likelihoods of vulnerable groups. Climate mitigation also requires the support of worse-off groups to not risk a political backlash. Therefore, countries need to compensate potential drawbacks of disadvantaged groups (e.g. through social policies) to not lose their support.

These intersectoral effects, demonstrated here for the family and environmental sector, are not only important for policy evaluation, but also for policy design. If policies from sector A influence outcomes of sector B, the process of policy formulation might need to be reconsidered. This connects to the policy integration literature, which demonstrates e.g. that the success of climate change mitigation policies also depends on how well they are integrated with other sectoral policies (Tosun and Lang 2017). The here found positive externalities of work-family policies might also increase the acceptability of such inequality reducing instruments.

The paper also has some weaknesses. Information on whether the single mothers in the sample are recipients of the studied work-family policies is not available. Therefore, it is not possible to prove whether the observed correlation is the result of a causal relationship. Macro data is available only for a smaller sample of countries, which risks biases in a multilevel design. Even though the discussion chapter showed that the estimation results are unbiased, a larger

country sample with a longer time frame would allow to include more variables at level 2, which would reduce the potential risk of overestimating the influence of single work-family policies.

Future research could explore this welfare-environmental nexus in more detail by conducting interviews with recipients to provide direct evidence for this relationship. For instance, by asking how mothers spend state benefits and wages, a clearer picture of the theorised relationship would appear. Besides, it would also be interesting to look at a set of various public policies and their effect on PEB to compare effect sizes. Nevertheless, this paper represents one of the first approaches to look at how social policies influence PEB, which helps to explore eco-social risks in more detail and provide the literature on climate justice with empirical relining.

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4 Backlash by men against the socio-economic and political promotion of women in Europe

Abstract. The gender gap in voting for far-right parties is significant in many European countries. While most studies focus on how men and women differ in their nationalist and populist attitudes, it is unknown how the socio-economic and political promotion of women is associated with the gender gap in far-right political orientation. The following paper compares the effect of four different spheres of gender equality on this gender gap. By estimating multilevel logit models for more than 25 European countries and testing the mechanism via a socially conservative attitude toward gendered division of work, I find that the visible field of representation in particular—measured by the share of women in parliament and women on boards—is associated with a gender gap in far-right orientation. This paper contributes to the literature in two important ways: first, it combines policy feedback with cultural backlash theory, enlarging the scope of both theories; second, it demonstrates the importance of gender equality policies for the study of the far-right gender gap.

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4.1 The puzzle: The gender gap in far-right voting

Sex is the main sociodemographic variable that is consistently relevant for describing far-right voters in almost all European countries (Donovan 2022; Givens 2004; Harteveld and Ivarsflaten 2016; Ralph-Morrow 2022). While the sex ratio regarding support for other parties is balanced, around two-thirds of far-right voters are male (Mudde 2007). Neither education, employment status, occupation type, nor attitudes towards immigration can sufficiently explain this gap (e.g., Harteveld et al. 2015; Spierings and Zaslove 2015). So, why do men vote more often for the far-right?

Although some studies have already investigated this, they have not been able to sufficiently explain variations between countries regarding the male over-representation among the far-right electorate.[1] Based on the fact that men and women undergo different forms of socialization, these studies argue that men are more likely to have authoritarian, extremist, and populist attitudes, which, in turn, increase their attraction to extremism and their probability of voting for far-right parties (Harteveld et al. 2015; Immerzeel et al. 2015; Spierings and Zaslove 2017). This reasoning might lead one to expect larger gender gaps among far-right voters in countries with conservative gender roles than in countries with liberal gender roles where men and women do not differ much in their socialized attitudes (e.g., Eagly et al. 2004). However, this is not the case, either: as the European Election Study 2019 demonstrates, social-democratic, egalitarian countries are among those with the highest gender gap. Based on this logic of gendered socialization, one would also expect the variation in the gender gap to be related to varying extremist images of specific far-right parties (see Harteveld and Ivarsflaten 2016). Far-right parties with an extremist image in society should have a higher share of men as supporters than far-right parties that cultivate a moderate public image, which is, however, not the case. Similarly, far-right parties that become more radical over time should report an increase in male voters and decrease in female voters as women should be deterred by the programmatic change. However, this is not necessarily the case: following its transformation from a Eurosceptic to a radical-right party, for example, the gender gap in the voter profile of the Alternative for Germany (AfD) only increased by two percentage points and is not statistically significant (Arzheimer and Berning 2019). If extremist and authoritarian attitudes are more prevalent among men, one would expect men to a higher, and women to a lower degree

[1] An important exception is Immerzeel et al. (2015), who attempted to explain cross-national variation through the far-right party characteristics of the outsider image and populist discourse style. However, they found no support for this theory. The present paper pursues another strategy to explain the gender gap by focusing on different spheres of gender equality.

to be attracted by the rising extremist image and programmatic profile of the AfD. In addition to the extremist image of far-right parties, other characteristics, such as their populist discourse style and self-portrayal as outsiders, do not vary with the cross-national gender gap (Immerzeel et al. 2015). Thus, the knowledge on the cross-national gender gap in far-right orientation is still low and not satisfactory. An exception is a new study from Donovan (2022) which exploratively tests different causes for the gender gap in multilevel models, finding that the number of Catholics in a country and the gender equality index plays a role. The present study takes Donovan's as its departure point, further elaborating the so-called gender-equality 'threat' as a hypothesis with which to try to solve the puzzle of the varying gender gap in far-right voting between European countries.

In the present article, rather than focusing on socialized attitudes, I propose a theoretical mechanism based on cultural backlash theory (Norris and Inglehart 2019) and the relative deprivation of formerly privileged groups to explain the gender gap in far-right orientation. This might also improve our understanding of how policy feedback affects political orientation.

More precisely, this paper is based on the argument that increased "feelings of aggrieved entitlement" (Kimmel 2017) among formerly privileged groups due to various liberal policy adaptions, such as the promotion of women in the professional sphere, have created windows of opportunity for men to backlash against these liberal turns electorally (Norris and Inglehart 2019). In general, political parties in government are expected to enact social policies that protect and promote specific social groups with economic risks. While governing political parties placed the emphasis on old social risks during the time of effective male breadwinner income models, such as old age and unemployment, they shifted towards "capacitating fairness" (Dworkin 1981; Sen 1992) and new social risk in the 2000s. Among the new social policies developed were ones for integrating female labor capacities into the post-industrial economies (Hemerijck 2013; Morgan 2013), such as increased spending on childcare facilities, parental leave, tax incentives for dual earners, gender quotas, and the ratification of laws on equal pay. These changes took place when classical male policy protection and long-term unemployment benefits were decreasing (Fleckenstein 2010; Jaumotte 2003; Gauthier 2002; OECD 2019a). Scholars have argued that the focus of governments and employers on making work and family life compatible for women evoked feelings of neglect among some men toward mainstream parties. When "the era of unquestioned and unchallenged male entitlement [was] over" (Kimmel 2017, p. 12), some men turned away from established parties and toward far-right ones, which often hold socially conservative views on gender topics. These parties promise a return to old times, when inter alia men were breadwinners and women were predominantly

housekeepers, as exemplified by Björn Höcke from the Alternative for Germany (AfD), who said that men have to "rediscover […] masculinity" (2015). In this article, I argue that the so-called silent postmaterialist revolution (see Norris and Inglehart 2019), also expressed in policies and labor opportunities for women, has reshaped the political playing field, compelling some men to orientate toward the far-right. To test these theoretical expectations, I pose the following two research questions: to what extent is the political and socio-economic promotion of women associated with the gender gap in far-right political orientation, and do attitudes toward gender equality moderate this gender gap? I answer the research questions by comparing the effect of four different spheres of gender equality on the gender gap in far-right political orientation.

The rest of this article unfolds as follows. First, I summarize the literature and set out the theoretical reasoning derived from cultural backlash theory and the approach of policy feedback. Then, I introduce the method of analysis, data, and variables, for which I used the European Values Study (EVS) in 2008 and 2017 and country-level data on (at least) 25 European countries from different datasets. Next, I present and discuss the findings of the mixed multilevel logit models, before drawing conclusions on the effects of the promotion of women on the gender gap in far-right political orientation.

4.2 Previous explanations for the gender gap in far-right voting/political orientation

The most prominent explanation for why women do not vote as much as men for far-right parties is "a certain resistance towards extremism" (Harteveld et al. 2015; Spierings and Zaslove 2017). The reasoning behind this is that the "extremist image" of far-right parties keeps women from voting for them, rather than the parties' radical right ideology, or more precisely, their "conservative positions on gender issues" (Mudde 2007, p. 116). Harteveld et al. (2015) add that women are more strongly deterred by the political style of far-right parties, but do not differ from men regarding their authoritarian attitudes or (dis)satisfaction with democracy. This attributes the reason for the gender gap to the different socialization of men and women, as exemplified by the normative variance of 'correct behavior' between the sexes (Spierings and Zaslove 2017) and the varying motivation to control prejudice (Harteveld and Ivarsflaten 2016). However, as highlighted in the introduction, attitudes and personality traits relying on socialization cannot explain varying gender gaps between countries. The countries do not cluster along our expectations (countries with traditional gender socialization do not have smaller gaps than liberal ones). Thus, the socialization hypothesis might hold when comparing individuals, but not for countries. This first problem of the previous literature is, therefore, the lack of identifying variables at the country level to explain cross-national variation. The second

problem of the "demand side" literature on far-right voting is that they largely rely on macro- and meso-level explanations, for example, socialization processes (Spierings and Zaslove 2017), but measure them at the micro-level by examining specific attitudes, such as interest in politics, political efficacy, religiosity, or extremism (an exception is Mierina and Koroleva 2015). Thus, the theoretical arguments require empirical support at the meso- and macro-levels; until then, it will remain unclear where these attitudes come from, and thus why men are more inclined than women to vote for far-right parties. A third problem of previous studies on the far-right gender gap is that there is hardly integration of gender research. The research mainly has its origins in the far-right literature, using their explanations, e.g., by comparing anti-immigration attitudes between sexes. The—unspoken—expectation is here that sexes differ by nature and socialization, e.g., men *are* more authoritarian. However, assuming that voters want to maximize their utility and assuming that the utility of policies differs between sexes, one might expect that men and women *have* different reasons for choosing/rejecting parties. Therefore, it is necessary to ask how gender specific attitudes and policies are related to the gender gap. An innovative approach is provided by Allen and Goodman (2021), who compare the voter profiles and motivation of men and women separately, finding that women employed in routine nonmanual work who have progressive chauvinist views (e.g., on same-sex marriage) favor far-right parties. More precisely, they find that attitudes in favor of gay equality are positively associated with women voting for the far right, while these attitudes are negatively related to far-right support among men. Thus, far-right parties are faced with a programmatic trade-off since their electorate diverges on core social issues. Even though the authors do not elaborate on this trade-off on the political party supply side, it shows that it might be worthwhile to look at the national status of different gender policies, as this is the playing field on which far-right parties position themselves on gender.

In the present article, I argue that the gender gap in far-right orientation is also the result of a backlash against the silent post-materialist revolution, which also includes the promotion of women in different political and socio-economic spheres. However, this strand of literature has only been considered to a very limited extent as explanatory for far-right voting (exceptions are Burgoon et al. 2019; Vlandas and Halikiopoulou 2018). The introduction and rejection of specific policies, as well as paradigm shifts, can explain a changing political orientation, expressed in the establishment of new parties (e.g., the Pirate parties, or the Brexit Party in the U.K.), the increasing support for certain political parties (the far-right, but also the Greens), or decreases in support for other parties. In the present article, I argue that the gender gap in far-right political orientation is also linked to the promotion of women in politics and the

professional world. This theoretical macro–micro model of the relative deprivation of some men caused by the increased focus on promoting women politically and economically is tested by mixed logistic multilevel models with both individual characteristics and contextual level variables (Arzheimer 2009).

4.3 Cultural backlash theory and policy feedback theory: Relative male deprivation

The theoretical framework for this study is based on cultural backlash theory (Norris and Inglehart 2019) embedded in policy feedback theory (Moynihan and Soss 2014). While the causal mechanism stems from the former, the set of independent variables derives from policy feedback theory.

The cultural backlash theory by Pippa Norris and Ronald Inglehart (2019) is grounded on the observation that a silent revolution toward post-materialist values has been taking place since the 1970s, when the conventional attitudes and norms of socially conservative individuals were challenged. Feeling threatened by the dominance of cultural issues in politics—for example, same-sex marriage and the integration of ethnic minorities—on which most parties had adopted liberal stances, this group of voters turned toward socially conservative and authoritarian values (Allen and Goodman 2021; Norris and Inglehart 2019). This is a mechanism of relative deprivation, as members of a particular social group changed their political behavior and attitudes due to subjective perceptions of other groups and former times. Recognizing that the cultural norms and values they believed in were no longer supported by either the majority of the population or most political representatives, they expressed their discontent by shifting toward the far-right (Ignazi 1992, 2003). Not only does competition with immigrants, a well-known motive for far-right support, produce a sense of declining status (Gest et al. 2018; Rydgren 2013), but female empowerment provokes feelings of (white) male neglect. In this instance, far-right orientation represents support for "redemptive politics" (Canovan 1999), as it communicates the desire to restore the focus of welfare policy on old social risks, men in leadership positions, and women in gender-stereotypical professions and/or as care worker at home. Looking at the supply side of the argument, far-right parties, despite their programmatic diversity, offer a political home for those individuals who want to maintain the gendered division of work and heteronormative patriarchal families and/or favor a femonationalism, where women need to be protected from immigrants (Santos and Roque 2021). Thus, far-right parties promote the reproductive function of traditional families and women's role as caretakers, while simultaneously opposing the sexual rights of women alongside LGBTIQ+ rights (Köttig et al. 2017; Santos and Roque 2021).

Who are the socially conservative voters that have become more authoritarian in recent years? Norris and Inglehart (2019) argue that the post-materialist triumph especially threatens those who suffer from (cultural) grievances due to their age and/or education. College education is considered to play a key role in establishing socially liberal values, evidenced, inter alia, by the division of education in the Brexit referendum and the below-average level of education among Trump supporters (Ford and Goodwin 2017). Furthermore, while the interwar and baby boomer generations made up the electoral majority for several decades, newer generations were subject to a broad educational advancement, leading to the silent cultural revolution (Norris and Inglehart 2019). In fact, earlier generations are proven to have more conservative values (Tilley and Evans 2014), and the gender gap in political orientation is driven especially by a change among older generations (Dassonneville 2020).

But what structures influence attitudes about gender equality? I argue that cultural norms are also embedded and expressed in policies as socially progressive values, but also in corporate goals, against which some men backlash and feel relatively deprived. Assuming that "policies, once enacted, restructure subsequent political processes" (Skocpol 1992, p. 58), I expect, for example, social policies to regulate gender relations by defining female rights and pushing companies to engage in gender equality measures. Besides, policies inform the public about civic standing, group deservingness, and the nature of social problems (Schneider and Ingram 2005; Soss and Schram 2007). Thus, policies at the state and business level can actually give lessons on the social and political status of specific groups and adjust political preferences and attitudes (Soss 2005). I propose here a self-undermining, general, and long-term feedback effect (Busemeyer et al. 2019), meaning that different policies associated with increasing the representation and the resources of women have encouraged the population to reinterpret gender relations and that these reinterpretations differ between sexes and come into play after a certain time. For instance, the expansion of childcare provision and other dual-earner arrangements has led to a greater advocacy of an egalitarian division of work and family life (Neimanns 2020; Pedulla and Thébaud 2015), since the set-up and expansion of professional childcare led to a rethink about the ideal conditions for children to grow up in, as well as about the role mothers have in childcare, and passed these on as new cultural norms. In Norway, the establishment of a universal childcare system increased support for 'childcare services only' as the best form of care by about 30 percentage points (Ellingsæter et al. 2017). Similarly, gender quotas on boards and parliamentary representation communicate that women can do these jobs as well and are not slated to take care of family and home only. A number of social policies and corporate

measures have been enacted in recent years in Europe, which can be considered as a very significant break from socially conservative norms regarding the obligations of motherhood.

In comparison to other policy studies that analyze feedback effects on targeted groups or the mass public, I expect (some) men as a non-targeted group to perceive the increased focus on gendered family policies as a threat to social entitlements associated with old risks (e.g., unemployment, inability, ageing). Thus, while the majority of studies analyze whether policies can intensify or alleviate the marginality of disadvantaged groups (Mettler and Soss 2004), this paper analyses whether social policies at the national and corporate level can also influence the relative deprivation of formerly *advantaged groups* that are *not targeted* with these policies. My precise argument is that if these policies are shown to be less for and about people like them, they might turn away from mainstream parties and classify themselves as far-right. Thus, the promotion of women in politics and professional life might create opposition not only to its continued provision, but also to "mainstream" parties supporting these policies and the associated turn in liberal values (see Busemeyer et al. (2019) 'self-undermining direction of feedback').

Which spheres of gender equality might drive men to favor the far-right? I take an elaborative stance here and test the effect of the promotion of women in the political and professional realms regarding their representation and resources. In Table 4.1, the four studied spheres of gender equality are presented in a 2 × 2 matrix.

Table 4.1. Spheres of gender equality.

	Political Area	**Socio-Economic Area**
Representation	Women in parliament	Female seats on boards
Resources	Childcare expenditures	Gender wage gap

Note: own illustration.

I selected these four measures of gender equality because of their relevance and importance in the European context, as they are either in the focus of public debate and/or have undergone changes in the last couple of years. For instance, to illustrate the relevance of these spheres, the Council of Europe, which defines gender equality as "equal visibility, empowerment and participation of both sexes in all spheres of public and private life […]" (Council of Europe 2016), highlights the gender wage gap and the unrepresentative number of women in parliament as key challenges. There are alternative policies to those studied here, such as parental leave, that are also heavily discussed in public discourse. However, while parental leave, for example, has changed in some countries (e.g., Germany), it is not subject to policy-making in others (e.g.,

Switzerland, U.K.), which makes it difficult to establish a valid argument for this gender equality measure. Furthermore, Akkerman (2015) shows that for the six electorally most successful far-right parties in Europe, labor market participation, political participation, and public childcare are among those most discussed gender policies in manifestos.

Since my argument hinges on an unspecific, diffuse group of women that are promoted in *public—political* and *socio-economic*—life, all four variables deal with gender equality in public life. This is also why indicators on *private* life (e.g., domestic abuse) would be unsuitable. Besides, health (e.g., maternal mortality) and education issues (e.g., female population with at least secondary education), which are part of the Gender Inequality Index (GII) of the United Nations Development Program, are not important for the countries studied here, as I do not expect inequality and large variation among them. Instead, I focus on the *political* and *socio-economic* spheres, as these are publicly visible and relevant to my thesis.

Representation is the most visible form of the promotion of women and equal rights are a prerequisite for it. Resources subsume the available opportunities women have to take part in public life, which is why I focus on this dimension next to representation. Female participation in paid work increases the well-being of women and is a cornerstone of today's labor market policies in Europe. Having a paid job allows women to participate to their full potential in public life and demonstrates their ability as equal workers. Thus, seeing women on boards or knowing of a low wage gap might arouse feelings of aggrieved entitlement among some men who have considered the labor market as their exclusive playing field. Furthermore, as I focus on political orientation, looking at gender equality in the political sphere is a logical step. Gender equality in political institutions is considered key for good governance and the fairness of political processes and outputs. To see that the legislative body of a country is largely made up of women suggests that women hold powerful positions, too, and can decide on key issues. The representation of women on boards and in parliament is also often based on policies promoting gender quotas. This means that an examination of female representation among society's top positions can serve as an indirect measurement of the policy feedback mechanism. Regarding resources, childcare expenditures are a crucial political instrument for empowering women's participation in the labor market and is one of the few areas of increased expenditure across mature welfare states (Lauri et al. 2020). They stand for defamiliarization, meaning that traditional care obligations are assigned to public institutions and are not carried out in private by mothers. Thus, it is plausible that men with neo-traditional views on the gendered division of work reject generous childcare policies. Furthermore, the majority of European far-right

parties reject public childcare expenditures and advocate for mothers to care for their children at home.

The measurement of these four indicators will be discussed in more detail in the next chapter. Since insufficient quantitative research exists on gender policies and far-right voting/orientation, the reasoning behind my variable selection is only based on these first explorative grounds. In general, I expect a larger representation of women and greater gender equality in the *political* and *socio-economic* areas to provoke a cultural backlash by men, leading to more men having a far-right orientation than women. Thus, policies of female empowerment (e.g., public childcare) especially provoke some of the non-targeted men to backlash against this cultural turn and to adopt a far-right orientation. Based on this argumentation, I formulate the following four hypotheses:

> ***H1a:*** *The higher the female representation in the political sphere (here: women in parliament), the greater the gender gap in far-right orientation.*
>
> ***H1b:*** *The more equal the resources in the political sphere (here: childcare expenditures), the greater the gender gap in far-right orientation.*
>
> ***H2a:*** *The higher the female representation in the socio-economic sphere (here: women on boards), the greater the gender gap in far-right orientation.*
>
> ***H2b:*** *The more equal the resources in the socio-economic sphere (here: gender wage gap), the greater the gender gap in far-right orientation.*

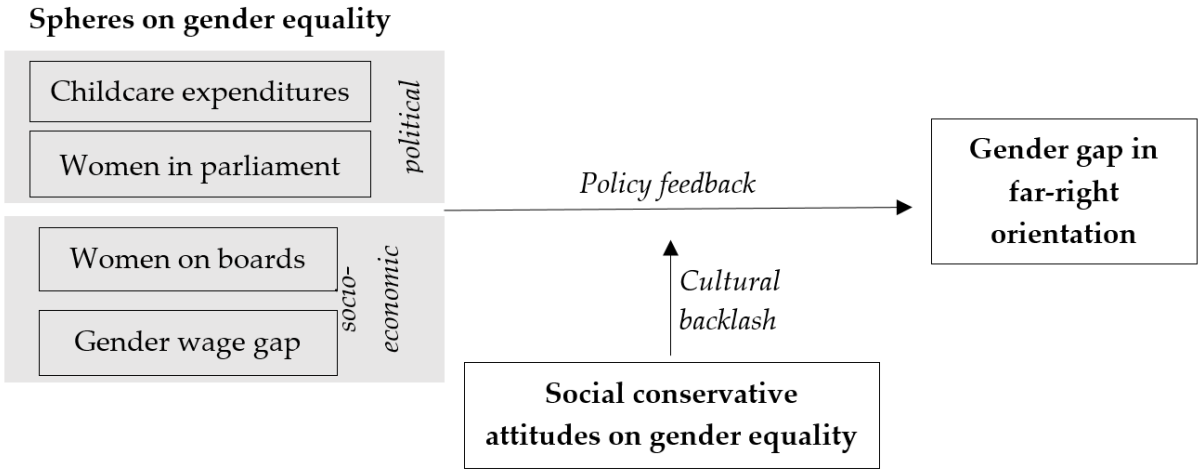
While these hypotheses are correlative in nature and focus on explaining the cross-country gender gap in far-right orientation, I also aim to test the cultural backlash mechanism by analyzing individual attitudes. The moderating factor of the theoretical framework are socially conservative attitudes that drive men rather than women toward a far-right orientation. Hence, I argue that the promotion of women in the political and socio-economic spheres strengthen a cultural backlash, as expressed in socially conservative gender attitudes that inter alia increase the likelihood of a far-right orientation. The argument, grounded on socially conservative attitudes, is empirically supported by Allen and Goodman (2021), who find that progressive attitudes toward gay equality are positively correlated with women voting for the far-right, but negatively correlated with men voting for the far-right. Thus, social conservativism—if measured on the basis of attitudes toward homosexuality—is associated with female far-right voters, but not with male far-right voters. I, therefore, argue that the effect of gender equality policies on the gender gap in far-right voting is moderated by socially conservative attitudes.

Social conservatism represents, here, the silent revolution against the post-materialist turn; hence, the moderation effect is used to test the mechanism more robustly. Furthermore, far-right parties justify their family and gender policy proposals with socially conservative views on women's role in society. While Hypotheses 1a to 2b especially test the framework of policy feedback, Hypothesis 3 explores the cultural backlash mechanism.

> ***H3:*** *Socially conservative gender attitudes positively moderate the effect of the political and socio-economic promotion of women on the gender gap in far-right orientation; i.e., socially conservative attitudes strengthen the relationship between the promotion of women and the gender gap in far-right orientation.*

This paper therefore introduces two theoretical innovations for policy feedback theory by formulating hypotheses on the political orientation of groups not targeted by specific policies and by combining the theories of policy feedback and cultural backlash. The theoretical argument of the study is summarized in Figure 4.1. The four studied spheres of gender equality are displayed on the left-hand side, divided into a political and a socio-economic area. As explanatory variables, they are considered to have a positive relationship with the outcome variable: the gender gap in far-right orientation. The relationship here is a feedback mechanism, meaning that policies and corporate goals influence the preferences of both sexes differently. This connection at the macro-level is linked to a moderation effect at the individual level, meaning that socially conservative attitudes on gender equality influence the effect of policies on female promotion on the gender gap in far-right orientation. Next, I describe the empirical identification strategy that I use to test these hypotheses.

Figure 4.1. Theoretical framework



4.4 Empirical strategy: Data and methods

To explore the hypotheses about the gender gap in far-right orientation in European countries, I required data for a number of countries on: (1) attitudes toward gender equality; (2) individual-level covariates, such as education and political orientation; and (3) levels of the promotion of women in different fields. Such data must, therefore, capture people living in countries with different levels of gender-equality representation, different resources, and varying gender gaps in far-right orientation.

Since there is no single dataset that combines (1) to (3), the study relies on the European Values Studies (EVS) from 2017 and 2008 (EVS 2010; EVS 2019), which has many items on attitudes toward gender equality. The individual-level survey data from the EVS are combined with the OECD Social Expenditure Aggregated Dataset on female seats on boards and the gender wage gap (OECD 2019), the Comparative Welfare States Data Set on childcare expenditures (Brady et al. 2020), and the World Bank Gender Statistics for women in parliament for the respective years. Consequently, the combined dataset includes country-level data from three datasets and individual-level data from the EVS. While egalitarian attitudes and political orientation were measured in 2008 and 2017, respectively, the independent, macro-level variables are lagged by at least a year to produce a temporal sequence as a condition for causality. Since data availability is not sufficient for a single year, I look at some countries only in 2008, others only in 2017, and some countries for both years. The values for the latter countries (2008 and 2017) are combined to avoid overrepresentation. The studied 32 European countries are presented in Appendix A Table A1.

The empirical analysis is based on the dependent variable "gender gap in far-right political orientation" from the EVS. The outcome variable compares men and women with a far-right political orientation. Thus, men with a political orientation of eight to ten—on a scale from one to ten—are coded as one, while women with the same ideological self-placement are coded as zero (see also Pickard et al. 2022). I use far-right political orientation instead of far-right voting for the following reasons: first, far-right parties have a varying portfolio regarding gender and family issues (Akkerman 2015; De Lange and Mügge 2015), which could bias the results if used as the dependent variable. Even though far-right parties share a conservative gender agenda, some of them debate the status of women and gender equality in light of rising immigration (e.g., the Danish People's Party (DF)), while others clearly promote women to be housekeepers and to stay away from the labor market (e.g., Austrian Freedom Party (FPÖ)). This ideological heterogeneity, as well as endogenous factors, such as the popularity of party leaders, could be an invalid measuring instrument and dilute the theoretical concept behind it.

Far-right political orientation, in contrast, is a broader item measuring the recent far-right ideological preferences of respondents. The left–right scale organizes the values and beliefs of individuals, and is thus a good aggregated indicator for measuring far-right ideology (Verkuyten et al. 2022). Second, cultural backlash is not only expressed by voting but by a shift in attitudes and values. Some individuals might not have voted, and their answers would become irrelevant if I had opted for voting behavior. Nevertheless, political orientation and voting behavior are strongly correlated. As Jou and Dalton (2017) find, the majority of voters can locate themselves on a left–right scale and link their voting decisions to it. Voters are able to identify political parties on a left–right scale and the political orientation on a left–right scale is an important guide for voting choices. In Appendix Table A6, I estimated the models with far-right voting as the dependent variable, showing that the results do not differ crucially.

The key independent variables on the political and socio-economic promotion of women are presented in Table 4.1. Regarding the political sphere, I use the share of women in parliament for the category "representation". Several studies have found that the number of female parliamentarians positively influences the public image of women as political leaders as well as diversifies the legislative agenda (e.g., O'Brien and Piscopo 2018). Moreover, a higher female representation in parliament increases the level of policymaking on women's issues (Devlin and Elgie 2008). The United Nations Development Programme (UNDP) established a gender equality index in the 1990s with the representation of women in parliament as the key indicator for measuring the political opportunities of women. In general, this indicator is well-established in gender research as a measurement of the political representation, participation, and decision-making power of women (Plantenga et al. 2009), which is why I also use it here. Table A4 shows inter alia the distribution of this independent variable. While Ukraine has the highest gender gap regarding women in parliament, with only 8.2 percent in 2008, we find the lowest gender gap in Iceland, with 47.6 percent in 2017. The mean value is 26.9 percent; however, the share of women in parliament—averaged across all countries—increased by 11 percentage points from 2008 to 2017. Next, childcare expenditures are used for the category "resources" (policy outcomes). Childcare policies are at the front of the political promotion of women in order to increase female labor participation. Even former male breadwinner countries, such as Germany or Austria, have increased their childcare expenditures tremendously in the last years and even established a formal right to public childcare access. Since public childcare symbolizes a departure from mothers staying at home and doing care work, scholars regard it as a good indicator of defamiliarization and the cultural backlash. Lewis (2008) argues that family policies represent an area in which competing values concerning the

social order of society are in focus, and childcare policies are critical to understanding the role of men and women in both societies and families (Fleckenstein 2010). I measure childcare expenditures as share of GDP, including early childhood education and care as well as formal day-care services and pre-primary education services. The average expenditure on childcare in the sample is 0.696 percent, with the lowest value in Latvia in 2008 (0.09 percent) and the highest value in Iceland in 2017 (1.8 percent). The average expenditure increased from 0.48 percent in 2008 to 0.81 percent in 2017. The third independent variable used in this analysis to measure the representation of women in professional life is the share of women on boards. Female board representation not only improves decision-making (Nielsen and Huse 2010) and the governance and effectiveness of organizations (Halliday et al. 2021), but it is also important for the broader public since it creates role models and increases the professional visibility of women. Studies found that in countries with greater gender equality, women enjoy more legitimacy on boards and suffer less sexism and gender bias (Glick et al. 2004; Santacreu-Vasut et al. 2014). For all these reasons, the inclusion of women on boards has gained public and scholarly interest, and several countries—for example, Norway, France, Belgium, Italy, and Germany—have introduced gender quotas with sanctions for non-compliance. Other countries have formulated policies without sanctions (e.g., the Netherlands or Iceland) or only quotas for state-owned companies (e.g., Austria, Poland, and Slovenia). I hypothesize that the varying representation of women on boards influences the cultural backlash of some men who turn to the far-right. In the present sample, an average of 20.63 percent of board members are female. The lowest percentage is found in Luxembourg, with 3.5 percent of women on boards in 2008. The highest share of women is found in Iceland, where 43.5 percent of board members are female. The average number of women has more than doubled between 2008 and 2017: while 12.84 percent of board members were women in 2008, the share increased to 27.85 percent in 2017. The last independent variable in the present analysis is the wage gap, which I use to measure resources in the socio-economic sphere. Even though the gender wage gap has decreased since the 1970s and female labor participation has increased, a wage gap persists in nearly every European country despite the enactment of anti-discrimination policies. Women in the EU earned, on average, 14.1 percent less per hour than men in 2019 (EU27 data). Reasons are the employment in different sectors, disrupted careers path due to family obligations, or the glass ceiling. The argument here is that the lower the wage gap, the more integrated are women in the labor market at different positions and sectors and the more they stand in direct competition with men. The latter might evoke feelings of aggrieved entitlement among men, which is why I use the gender wage gap as the fourth independent variable. In the present

sample, the highest gender wage gap is in Cyprus in 2008 (30.27 percent) and the lowest—interestingly—is in Hungary in 2008 (2.2 percent). The average gender wage gap is 13.43 percent, a minor decrease from the 14.17 percent in 2008 to 13.13 percent in 2017. It is important to note that high values in this variable are associated with low gender equality, and the coding is, therefore, the other way round than for the other three variables.

To find out whether this silent revolution for female rights sparked authoritarian attitudes among social conservatives, I look at attitudes toward gender equality, focusing on the Eurobarometer item: "a man's job is to earn money, a woman's job is to look after the home and family". The attitude is dichotomized into "agree" and "disagree". This item represents normative ideas about the social role of women and is used in many surveys (e.g., ISSP, EVS), making it a valid and frequently used item for measuring socially conservative attitudes.

At the individual level, I control for economic deprivation, which is measured as the binary item of having experienced unemployment in the last 12 months. I expect unemployment to increase the likelihood of a far-right orientation, especially among men who expect themselves to be in employment according to their normative self-image. This variable also maps well onto the relative/positional deprivation some men feel when comparing themselves to immigrants or women in work (Burgoon et al. 2019). I also control for the attitude "immigrants take jobs away", which is measured using a 10-point Likert scale, to include the most prominent explanation for far-right orientation (see also Arzheimer 2009). I also include education levels and age as controls, since Norris and Inglehart (2019) find (cultural) grievances due to the post-materialist revolution to be especially prevalent among the elderly and the low-educated.

The survey year is included in the model to capture time effects. Finally, I control for the size of the far-right parties in the respective countries to find out whether political parties' extremist images and their discriminatory tendencies influence the relationship between X and Y. Since larger far-right parties need to appeal to a greater electorate, their positions should be more moderate in contrast to smaller far-right parties with specific grievances (empirical evidence is found in Donovan 2022). Thus, the argument here is that the smaller the party, the larger the gender gap. To consider the limited degrees of freedom, I insert no further variables at the country level, even though further explanations are theoretically plausible. Nevertheless, I report the results for a region dummy (Eastern vs. Western Europe) in Appendix A Table A5, as the history and programs of far-right parties differ between both regions. A possible result, therefore, is that the different spheres of gender equality have no effect on the gender gap in far-right orientation when controlling for regional differences. The description, data sources, measurements, and distribution of the variables can be found in Tables A1 to A3.

I estimate mixed-effects logit regressions to predict multilevel models for the binary outcome variable on political orientation. By combining fixed and random effects, I recognize correlations between respondents from countries included on two occasions (2008 and 2017). Since I am interested in why more men than women have a far-right orientation, logit regressions are the most appropriate. For predictions based on the regression, I report the fixed portion of the model only to facilitate interpretation.

4.5 Results

I structure the empirical analysis chronologically according to my hypotheses. To test Hypotheses 1a to 2b, that is, whether the political and socio-economic promotion of women influences the gender gap in far-right orientation, I estimate multilevel regressions for the four independent variables. With this first analysis, I aim to find out whether a silent revolution towards gender equality in politics and professional life has led men in particular to develop a far-right political orientation. Table 4.2 illustrates the findings of six models in a regression table. The results are based on 25 to 32 European countries depending on data availability.[21] The number of observations ranges from 4194 to 5825, subsuming all respondents with a far-right political orientation. Model 1 is the baseline model with only individual-level variables. In Model 2, the size of the far-right party is included as a control. Model 3 reports the results for women in parliament (item for political representation), Model 4 the results for childcare expenditures (item for political resources), Model 5 the results for women on boards (item for socio-economic representation), and Model 6 the gender wage gap (item for socio-economic resources). Relying on Hypotheses 1a to 2b, which are based on the theory of relative male deprivation, I expect a higher degree of representation and more equality in resources to translate to a higher gender gap in far-right orientation.

[1] I also run the analyses on the same 25 countries, finding comparable effects to the models with different sample sizes (not reported here). Since I would have lost several degrees of freedom by aligning the number of clusters across the models, I decided against using only the 25 countries as the main output table.

Table 4.2. Mixed effects logit regression to explain the gender gap in far-right orientation.

Gender Gap in Far-Right Orientation	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Age (in years)	−0.00588 ***	−0.00688 ***	−0.00591 ***	−0.00717 ***	−0.00744 ***	−0.00637 ***
	(0.00107)	(0.00113)	(0.00107)	(0.00120)	(0.00119)	(0.00122)
Education level (three categories)	0.0510 *	0.0623 **	0.0502 *	0.0543 *	0.0587 **	0.0809 ***
	(0.0265)	(0.0276)	(0.0265)	(0.0291)	(0.0289)	(0.0297)
Unemployment experience (yes = 1, no = 0)	−0.153 ***	−0.141 **	−0.146 ***	−0.118 *	−0.118 *	−0.128 **
	(0.0521)	(0.0565)	(0.0518)	(0.0613)	(0.0610)	(0.0627)
“Immigrants take jobs away” (0–10)	0.00505	0.00225	0.00593	−0.00171	$3.6x10^{-5}$	0.00348
	(0.00640)	(0.00685)	(0.00640)	(0.00742)	(0.00735)	(0.00755)
Size of the far-right party (in %)		−0.00240				
		(0.00253)				
Survey year (dichotomous)		0.00117	−0.00518	−0.00759	−0.0132 **	−0.00235
		(0.00527)	(0.00451)	(0.00560)	(0.00671)	(0.00586)
Women in parliament (in %)			0.0159 ***			
			(0.00377)			
Childcare expenditures (in % of GDP)				0.303 **		
				(0.143)		
Women on boards (in %)					0.0107 ***	
					(0.00379)	

Gender wage gap (in %)						−0.00703
						(0.00926)
Constant	0.160	−2.114	10.18	15.37	26.68**	5.017
	(0.107)	(10.59)	(9.045)	(11.22)	(13.44)	(11.85)
Random intercept for country	−1.198 ***	−1.183 ***	−1.500 ***	−1.266 ***	−1.276 ***	−1.206 ***
	(0.142)	(0.151)	(0.165)	(0.165)	(0.166)	(0.160)
Observations	12,430	11,331	12,430	10,002	10,131	9810
Number of countries	32	29	32	25	26	27

Notes: own calculations based on the European Values Study 2008 and 2017, the OECD Social Expenditure Aggregated Dataset, the Comparative Welfare States Data Set, and World Bank Gender Statistics. Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

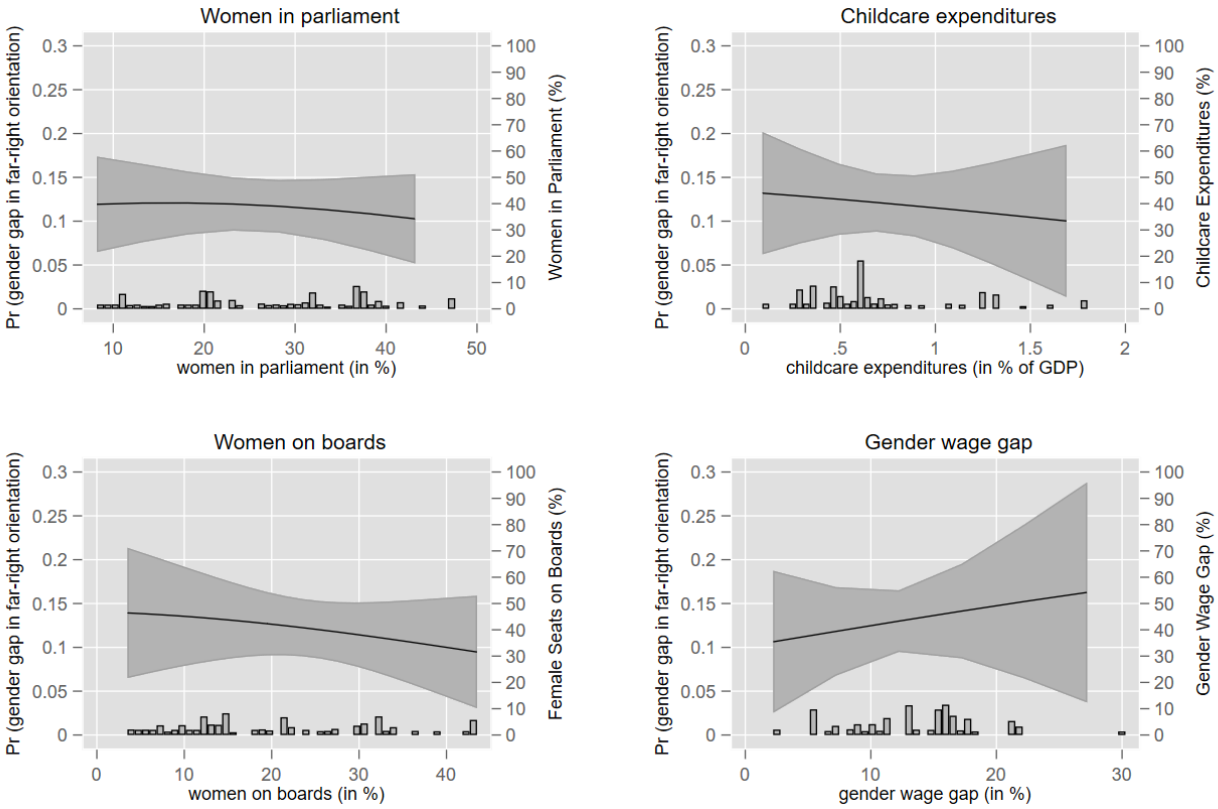
Starting with the individual-level controls, I find a negative statistically significant effect for age, which is robust in all six models. Thus, the younger the male respondent, the higher his likelihood of having a far-right orientation. This supports former findings in the literature that young men are more attracted to extreme views and political parties. Much far-right activism "is constructed as a masculine military-like activity" (Scrinzi 2014 in Blee 2020), which is why young men especially are attracted (Mierina and Koroleva 2015). *Young* women, in contrast, are among the most unlikely socio-demographic group voting for the far-right/having a far-right political orientation. Education is significant in all six models, meaning that a higher education level among men is associated with a far-right orientation, which is surprising considering that former studies have found men with a lower level of education to be likelier to favor the far-right (e.g., Givens 2004). I find negative significant results for unemployment experience. Here, experiences of unemployment in the last 12 months increases the likelihood among women of having a far-right political orientation. The last control variable at the individual level is the attitude "immigrants take jobs away", for which I find no support. Thus, men and women who have a far-right political orientation do not differ in their xenophobic attitudes. This supports former research, finding that men and women do not have different attitudes on immigration issues (e.g., Harteveld et al. 2015). With regard to the size of the far-right party in the countries in question, I find no significant effect.

Model 3 tests Hypothesis 1a on the effect of women in parliament on the gender gap in far-right orientation. We find a positive significant effect for the share of women in parliament at the 0.1 percent level. Thus, a higher female political representation in a country is associated with men being more likely to have a far-right orientation. This supports my expectations, indicating that female politicians might symbolize a taking-over of a male sphere of influence. Model 4 shows the test results for Hypothesis 1b on whether childcare expenditure increases the gender gap in political orientation. The coefficient is significant and positive at the 1 percent level, meaning higher childcare expenditures are associated with a higher gender gap in far-right orientation ceteris paribus. Looking at the representation of women in the socio-economic sphere (Model 5), I find support for Hypothesis 2a. The coefficient for women on boards is positive and statistically significant, indicating that a higher female representation in leadership positions in professional life might lead to a cultural backlash by men who feel threatened by the fact that women are also able and entitled to hold such positions. Finally, Model 6 reports the test for Hypothesis 2b on the effect of the gender wage gap on the gender gap in far-right orientation, recalling that a low gender wage gap should be associated with more men having a far-right orientation. As expected, the coefficient is negative, but not significant. Thus, I must reject

Hypothesis 2b. All in all, I find support for the representation-hypotheses and partly for the resources-hypotheses, based on the present data. This might indicate that a cultural backlash is primarily directed against "visible" actions in public life. The gender wage gap might require a certain political knowledge and might be too obscure to influence attitudes. The share of women in parliament and on boards, in contrast, is visible to everyone and threatening for some. I will discuss these mixed results in the discussion chapter.

Next, I test the second research question on whether attitudes toward gender equality moderate the effect of the political and socio-economic promotion of women on the gender gap in far-right political orientation. For the associated Hypothesis 3, I present in Figure 4.2 average marginal effect plots for the effect of the different independent variables moderated by the attitude: "A man's job is to earn money, a woman's job is to look after the home and family". Graphical analyses are more suited to interpreting the interaction term in nonlinear models than is looking at the coefficients of the interaction term in tables (Greene 2010). The distribution of the independent variables is displayed with bar charts.

Figure 4.2. Average marginal effects of the gendered division of work on the gender gap in far-right orientation.



Notes: Own illustration based on the European Values Study 2008 and 2017, the OECD Social Expenditure Aggregated Dataset, the Comparative Welfare States Data Set, and World Bank Gender Statistics. 95% confidence intervals, fixed portion only.

Figure 4.2 is divided into four panels that estimate the moderating effect of socially conservative attitudes on the relationship between the political and socio-economic promotion of women on the gender gap in far-right orientation. While the upper two panels show the political promotion of women (women in parliament and childcare expenditure), the lower two present the socio-economic promotion of women (women on boards and gender wage gap). I find a positive moderating effect for all four spheres of gender equality. Thus, the effect of women in parliament, women on boards, childcare expenditure, and the gender wage gap on the far-right gender gap is moderated by the attitude toward a gendered division of work. Nevertheless, the effect size is very low, which is partly due to the small sample size and multilevel modeling. The moderating effect of socially conservative attitudes becomes even smaller as the values for the promotion of women increase. An exception is the gender wage gap: the higher the gender wage gap, the more greatly socially conservative attitudes impact the gender gap in far-right orientation. This is contrary to my expectations. Even though socially conservative attitudes seem to be associated with the gender gap in far-right orientation, I find low support for the moderation hypothesis. To sum up, the cross-level interactions suggest that socially conservative attitudes are positively correlated with the relationship under investigation; but, due to the large confidence intervals, a very flat to negative slope, and small effect sizes, I am not able to confirm Hypothesis 3. In the next section, I discuss the results of this hypothesis and conduct robustness checks for alternative attitudes to gender.

4.6 Discussion

As this paper is an alternative, or at least complementary, explanation of previous studies, it is important to test them rigorously. In the following, I present additional results that are in the Appendix and which complement the results presented so far.

The first possible point of criticism of the present study is its conceptualization of the outcome variable, as I decided to use political orientation instead of voting behavior. To test the models with the gender gap in far-right voting, I report in Appendix A Table A5 the same estimation of a gender gap in far-right voting as a dependent variable. In addition, I present scatterplots to clarify the relationship between the four spheres of gender equality and far-right voting behavior, since the number of observations is small for Figure A6. Figures A1 to A4 are based on the EVS 2017 and report surveyed gender gaps in the respective countries on far-right voting. Values above 0.5 imply that more men vote for far-right parties than women. The figure essentially supports the empirical results presented above on far-right orientation. I find a slightly positive, significant relationship for X, meaning that the gender gap in far-right voting

increases with a higher share of women in parliament and on boards, and with higher childcare expenditure. I find no support for the gender wage gap. Regarding the multilevel model in Figure A6, I find support for women in parliament and women on boards, but not for the resources—Hypotheses 1b and 2b. This might indicate that especially the representation of women in parliament and on boards has a policy-feedback effect, for it increases the relative deprivation of men regarding gender equality and provokes a cultural backlash expressed as a shift in political orientation. Sanbonmatsu (2008) expects this backlash to manifest itself in descriptive representation in the U.S.A., where officeholding is also often male-dominated and women leaders are seen to violate traditional female stereotypes. Even if the elected women do not pursue women's policies or advocate for women in the company, their presence might symbolize that non-male interests and traits are gaining significance. Others (e.g., Haider-Markel 2007) assume that backlash also results from other social and political victories of women, not only descriptive representation. In this paper, I find more robust evidence for the former theory, which indicates that backlash mainly operates via abstract, subjective, and socially constructed mechanisms. The actual, "resources"-based (here: wage equality and childcare) promotion of women is only partly associated with a cultural backlash. Childcare expenditure is significant for the gender gap in far-right orientation, but not in voting, while the gender wage gap is insignificant for both dependent variables.

An alternative explanation for the relationship between gender equality measures and the gender gap in far-right orientation would be that there is a certain turning point in gender equality policies that is associated with an "enough is enough" mentality among some men. If such a turning point were to exist, the results would show an exponential function where the effect on the gender gap is low until a certain degree of gender equality is reached, at which point the relationship increases tremendously. Thus, the model would only be valid for countries at the upper end of the distribution. Such a relationship is rejected in light of the present data, which, in addition, can be seen in Figure A1–A4.

Another possible point of criticism is my choice of attitude toward gender equality, which might appear random. For this reason, I also calculated average marginal effects for another item on gender equality, more precisely, the item: "If jobs are scarce, men should be preferred." The results in Figure A5 show a distribution comparable to the one for the gendered division of work (item: "A man's job is to earn money, a woman's job is to look after home and children"). I find a positive effect for all moderation effects, except for childcare expenditure. However, the slope is also very flat and/or negative for women in parliament, the gender wage gap, and women on boards. This socially conservative attitude also seems to be associated with the

gender gap in far-right orientation, even though the moderation effect is not as large as expected. To summarize, the presented causal mechanism for the gendered division of work needs to be tested with additional data and methods (e.g., process-tracing or quasi-experimental), even though I find some evidence for how the cultural backlash operates.

4.7 Conclusions

"The Interwar generation of noncollege educated white men—until recently the politically and socially dominant group in Western cultures—has passed a tipping point at which their hegemonic status, power, and privilege are fading. Their value profile makes them potential supporters for parties promising to restore national sovereignty" (Norris and Inglehart 2019, p. 16).

This thesis on cultural backlash offers many points for conceptual and empirical investigations. While the so-called angry white men are a well-known concept in the U.S.—where a survey found that 53 percent of Republicans think men are punished just for being men and that 65 percent of Republicans think that society as a whole has become too soft and feminine (PRRI 2019)—this paper analyzes the phenomena in European countries. For this purpose, I combined cultural backlash theory with policy feedback to explain the tendency of men to be more attracted than women to a far-right political orientation. More precisely, I asked whether different spheres of gender equality are associated with the gender gap in far-right political orientation and whether attitudes toward gender equality moderate this relationship. To this end, I presented a new theoretical approach by bringing together self-undermining policy feedback effects with the relative deprivation of formerly privileged groups, reasoning that this combination results in cultural backlash. I argued that the strong policy focus on integrating mothers into the labor market, increasing the share of women in leadership positions, and aligning wages have led to an increase in the cultural relative deprivation of those men who long for the old benefits and privileges. I examined this relationship using mixed logistic multilevel regressions based on the European Values Study from 2008 and 2017 (EVS 2010; EVS 2019) and various macro-level datasets for (at least) 25 European countries. I find a very robust effect for the representation of women, meaning that a higher share of women in parliament and on boards is associated with a higher gender gap in far-right orientation. Childcare expenditure is also related to this gender gap, but not to the gap in far-right voting. I had to reject my expectations regarding the gender wage gap, which is not significantly related to a varying support among men and women for the far-right. All in all, this demonstrates that the gender gap not necessarily results from a different socialization of men, as previous studies

argued (e.g., Spierings and Zaslove 2017), but that a silent revolution toward gender equality also play a role here. Nevertheless, the causal mechanism grounded on socially conservative attitudes (see moderation effect in Hypothesis 3) is not supported empirically, so I invite further investigations into this relationship, including through the use of different methods as process tracing or structural equation modeling. The paper also gives some potential explanations for why the gender gap in far-right orientation is high in egalitarian Northern societies. The strong promotion of women here, especially via descriptive representation, might threaten (some) men who were formerly entitled to these positions. This is also supported by the additional regressions with regional dummies, as I found positive significant effects for Western Europe in all models. Future studies could explore this more deeply by not only distinguishing between Western and Eastern Europe, but also by looking at country-specific family policy patterns, and thus identifying context-specific influences. To sum up, the paper demonstrates the importance of gender equality policies on support for far-right parties, and more specifically on the gender gap in far-right orientation. It achieved this by analyzing "gender roles and family politics [that] are issues through which populist radical-right parties can 'showcase the core elements of their ideology'" (Fangen and Lichtenberg 2021, p. 91).

Despite these theoretical and empirical innovations, there are some points for improvement and further research. First, as in similar studies, it was difficult to control for a social desirability bias that is especially strong for women, and it was not possible to control for prejudice. However, the EVS is a mixed-mode survey that combines web and face-to-face interviews and has a comparably low prevalence of social desirability (Holbrook et al. 2003; Kreuter et al. 2008). Future research should nevertheless find strategies to test the social desirability effect (Dalton and Ortegren 2011), which is, however, not plausible considering most of the prominent cross-national survey datasets. Besides, the empirical identification strategy here is based on cross-sectional data. Longitudinal data would be needed to test the policy feedback effect more robustly. Since quotas, childcare expenditure, and similar policies in the corporate realm have evolved over different timespans in the European countries, which often have a different redistributive profile, a longitudinal design could help to uncover the causal mechanism. Further studies should also examine policies on migration to compare the effect sizes of the promotion of different outgroups on the gender gap. It could be that the outgroup is secondary: as long as the pivotal interests of former privileged groups are not represented in politics, policies, and corporate goals, the promotion of disadvantaged groups—be they migrants or women—might evoke a cultural backlash among formerly advantaged groups. Another avenue for future research would be to use case studies that provide more precise evidence on the self-

undermining feedback effect for formerly privileged groups that are not targeted with the policy. Furthermore, studies looking at the supply-side—thus, how far-right parties engage in legislative debates (see, for instance, Tosun and Debus 2021) on gender equality and how they vote on core issues concerning the promotion of women—could further improve the empirical evidence. The present study just suggests that this type of policy feedback might exist, but the data basis is not sufficient to prove it.

With the present article, I have shown that multilevel theorizing and modeling can be an effective approach to gaining a deeper understanding of the gender gap in far-right orientation. I have also expanded the theoretical uses of the policy feedback approach and cultural backlash theory by combining them to explain the gender gap in political orientation. I am aware that pessimistic policy conclusions can be drawn on the basis of this study. However, I would like to point out that the majority of men (in this sample 72 percent) supports gender equality.

4.8 References

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5 Welfare experiments as tools for evidence-based policy making? The political debate on twitter about the basic income trial in Finland

Abstract. Considered scientific and objective tools, welfare experiments have become increasingly attractive for testing innovative policy reforms. The basic income especially has been a popular policy experiment, trialled in several communities. However, do policymakers use welfare experiments as a policy instrument to gain empirical evidence for contested policy ideas? What can the political debate on Twitter reveal about the strategic functions of welfare experiments? Using a unique dataset of Finnish MPs' Twitter tweets on the basic income trial in Finland from 2017 to 2018, this article finds that Members of Parliament (MPs) neither waited for new empirical findings nor argued in a constantly coherent way. In contrast, while waiting for the evaluation, the tweets of the MPs became increasingly negative, even though no further empirical knowledge was available. The quantitative empirical analysis concludes that the reference to core welfare paradigms was essential to the legitimisation of basic income, although framing between political parties differed. In summary, the article contributes to a better understanding of the strategic function of welfare experiments and demonstrates the usefulness of Twitter data for social policy analysis that goes beyond hashtag-based, big data-driven research.

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5.1 Introduction

In most Western welfare states, the social security system was built to protect citizens against 'old' social risks, in other words, lack of income due to unemployment, accidents at work, sickness and old age. However, in the past decades welfare states have had to adapt to 'new' social risks, such as female labour market participation, globalisation, demographic changes and changes in the overall labour market structure (see e.g. Morel et al., 2012), and discussions on whether a new social security system should be tested have occurred. A prominent example of this is basic income which, if implemented, would be classified as radical reform of the social security system, since it would replace existing social services by giving all members of a political community an unconditional and regular income without means tests or work requirements (Clark and Kavanagh 1996; Van Parijs 2004). Standing in contrast to the conditionality of most existing welfare services and monetary benefits, basic income has not yet been implemented at any national level (De Wispelaere, Halmetoja, and Pulkka 2018). However, globally some municipalities, such as Wageningen in the Netherlands or Ontario in Canada, have run basic income trials in the end-2010s in an attempt to test a new social security system. One of the most recent basic income experiments was pursued in 2017-2018, when Finland implemented basic income for the first time on a nationwide two-year experimental basis (Kangas et al. 2017). Within this context, 2,000 randomly chosen unemployed job-seeking people received an unconditional monthly basic income of 560 € for a two-year period.

This basic income trial is considered as belonging to the superordinate category of welfare experiments[1] that are defined as small-scale and time-limited social policy reforms that randomly assign treatment, as well as control groups to find out whether specific policies have desired effects on certain outputs. They can be understood as an instrument[2] of *ex ante* policy evaluation because of their capability for policy forecasts (Knill and Tosun 2012) and they are often discussed as an instrument of evidence-based policymaking (De Marchi, Lucertini, and Tsoukiàs 2016). In general, policy trials are expected to help answer "questions about when, why, how, and who finds what type of knowledge sound, timely, and relevant at different states of the policy cycle" (Oliver, Lorenc, and Innvaer 2014, 8).

Despite the early establishment of welfare experiments in the late 1960s, governments rarely use the results of these to justify or to introduce new policies (Rogers-Dillon 2005). Initially, welfare trials were scarcely investigated as policy instruments, considered as having too little direct impact on policymaking (ibid. 9, 46; Weiss 1980). Instead, political studies concentrated on the policymaking process underlying the implementation of policy trials and pilots (Sanderson 2003). In doing so, political scientists found that a "rationalistic bias" (Rich and Oh

2000) has led to the false assumption that the evidence gathered from policy experiments can be directly translated into policies. De Marchi and colleagues (2016) argued that such an assumption would underestimate the complexity of decision-making processes. Instead welfare experiments can regulate discourses, shape ideological party disputes and influence agenda-setting opportunities. This is demonstrated by literature that aims to conceptually integrate evidence-based policymaking into policymaking theories (Almquist et al. 2013; Marston and Watts 2003; Sanderson 2003). However, empirical and systematic studies on the *specific functions* of welfare experiments are still missing. It is unknown whether and why the specific roles of welfare experiments differ and which strategic functions are empirically more relevant than others. Do political actors introduce experiments to postpone political debates or to underpin their opinions? To what extent can ideological party disputes explain the reasoning behind policy experiments?

In this article, we seek to uncover the functions of welfare trials empirically, using the basic income experiment in Finland 2017—2018 as our case study. We focus on the political debate by MPs on Twitter by analysing the polarity and framing strategies during this experiment. The empirical analysis is different to most current social policy publications since it does not rely on parliamentary speeches, government documents or newspaper articles. Instead, it takes advantage of text material in social media by carrying out a quantitative content analysis of Twitter tweets. Since Twitter is regularly used for political deliberation (Tumasjan et al. 2010) and for positioning towards other parties and politicians, it very well captures possible changes of MPs' argumentation. Moreover, since they are widely read and recited, Twitter tweets have a wide reach and are therefore a suitable strategic tool for political communication towards the public.

As a first step, the article gives an overview of the existing theoretical and empirical knowledge about welfare experiments in terms of basic income. In doing so, three possible strategies of welfare experiments emerge, which we transfer into hypotheses. Subsequently, we present our reasoning for the case selection and introduce the Finnish welfare system as well as the basic income trial from 2017-2018 as a prototype case for policy experiments. After outlining the case selection, we discuss the data and methods. The empirical results are then presented and discussed before a conclusion on the functions of welfare experiments is drawn.

5.2 Welfare experiments

Despite the massive reform pressure produced by increased social and economic challenges, many welfare states have maintained and defended the majority of their existing social services

and have largely been reluctant to undertake radical reforms (Palier 2000; Pierson 1996; Vis 2010). To overcome this mismatch between policy resilience and empirical reform pressures, policy trials can be a safe option for taking a step towards radical reforms, without risking too much voter backlash. By allowing policy innovations to leave the area of social debate and to be tested empirically, experiments are at the forefront of recent public policymaking (Oliver, Lorenc, and Innvaer 2014). They are rarely controversial and do not carry significant electoral risks because they are usually framed as scientific and objective tools, independent from ideological meaning (Rogers-Dillon 2005). Since welfare experiments replace or complement existing policies for a certain time, they serve as an appropriate research object for gaining an understanding of how, for example social security systems, can be reformed. Put differently, welfare experiments can help to explore the options of welfare restructuring.

In this article, we understand welfare experiments as policy instruments that governments use as tools for pursuing desired outcomes (see, e.g., Cairney 2016), which in this case was e.g. higher employment rates. Policy instruments have specific functions aimed at realising certain policy results. Brodkin and Kaufman (2000) identify three functions of welfare experiments: (1) diverting or incubating policy ideas, for instance, by postponing the political conflict, (2) legitimating policy ideas by broadening its social acceptance, by showing convincing results and by embedding a new policy tool into the established welfare architecture, and (3) articulating and interpreting social concerns by linking social challenges to specific reforms.

These three functions of welfare experiments have typically been illustrated through qualitative case studies. For instance, Greenberg and colleagues (2003) focused on the legitimising role of experiments by diffusing policy ideas in US states. They found that states learned from others' experiences with welfare experiments and that they began to deliberate about piloting these programs as well. For instance, the New Jersey Negative Income Tax legitimised the idea of a guaranteed minimum income by finding effects on poverty-reduction (ibid.). In contrast, others, such as the Seattle/Denver Income Maintenance Experiments, were regarded as cases of *reframing* social problems. By incorporating preventative social policies, such as education, training and counselling to the guaranteed income, they broadened the debate on the causes for poverty. The implementation of this welfare experiment therefore enabled politicians to advocate for specific interpretations and reasons of poverty (Brodkin and Kaufman 2000).

Although these historical examples are anecdotally plausible, systematic empirical analyses of the functions of welfare experiments are missing. Previous studies do not include *alternative interpretations* because they do not rely on potentially falsifiable hypotheses. It is uncertain whether these functions are indeed used by MPs or whether they differ by actors and time.

Because previous studies do not elaborate on the operationalisation, the accusation of arbitrariness is valid.

Although basic income experiments have been undertaken several times, they have not been used as an empirical example to study policy experiments systematically. Many publications on basic income are normative or hypothetical by nature (Bidadanure 2019; Van Parijs 2004), and a few empirical studies relying largely on data from the European Social Survey (ESS) and analysing the support for basic income among the public or in specific welfare states appeared in recent years (Lee 2018; Parolin and Siöland 2019; Vlandas 2019). There are also studies that go deeper into the reasons for supporting basic income by analysing intergenerational transmissions (Tosun et al. 2019) or the evolution of the basic income idea in political debate (Perkiö 2020). Thus, while basic income has indeed been studied on many levels, little is known about strategic functions underlying concrete basic income experiments. This is even more true for political parties' approval for basic income experiments because empirics show that political parties of different ideological persuasions have supported basic income (Van Parijs and Vanderborght 2017, 189-206). Since the idea of a basic income is valid for different political ideologies, it is important to differentiate framings in order to understand their strategic function.

To overcome these shortcomings, this study elaborates on measurable hypotheses and uses statistical analyses of double-coded Twitter tweets with different controls to produce reliable and critically tested results. In the next section, we introduce our theoretical framework, which relies on the three functions of welfare experiments as identified by Brodkin and Kaufman (2000).

5.3 Hypotheses about the functions of welfare experiments

To determine which of the three strategic functions were crucial in the basic income trial in Finland, we formulate four empirical hypotheses. The hypotheses are highly intertwined with our four research questions about the functions of welfare experiments: (1) Do the tweets of Finnish MPs on the basic income represent a postponement of the political debate? (2) Do these tweets serve to legitimise basic income? (3a) Do these tweets serve to bring the basic income in line with the predominant welfare paradigm? (3b) Do the tweets on the basic income trial represent an attempt to interpret social concerns regarding basic income along ideological positions?

5.3.1 Diverting basic income

The first function of the tweets could be the *diversion of policy ideas*. MPs can postpone a political conflict by implementing a low-risk and financially manageable experiment to calm down public debates. In this case, the final evaluation of the welfare experiment would be secondary, since implementing basic income would first and foremost be seen as a strategy for diversion. In the meantime, MPs could bring forth other policy ideas and instruments. This would mean that welfare experiments are not an instrument of evidence-based policymaking since its goal is not to gain rigorous empirical evidence. To test the validity of diversion, we expect MPs not to continue taking part or at least to reduce the number of statements in the political debate on Twitter. Therefore, the sum of tweets should decline over time if postponing is present.

H1: If MPs use the basic income experiment to postpone political conflicts, the quantity of tweets declines over time.

5.3.2 Legitimising basic income

If MPs are interested in legitimising the idea of a basic income, relating to research question 2, we expect them to continuously report positively about the experiment. Here, the trial has a scientific purpose: by collecting empirical data, MPs can substantiate their theoretical reasoning and legitimise the policy idea. Here, the function of the welfare experiment is substantive: its goal is to gain further knowledge for legitimisation. This function is in the tradition of evidence-based policymaking. Compared to the function of diversion, we expect MPs to tweet continuously and positively about the experiment since they are not interested in postponing the debate. If MPs are interested in delegitimising basic income, however, we expect them to report negatively on the experiment.

H2a: If MPs use the trial to legitimise basic income, they continue to express their support.

Additionally, we are going to analyse the use of welfare paradigms for legitimising basic income. If MPs are in favour of basic income, we expect them to clarify that the policy experiment matches the course of the social policy system and does not conflict with existing welfare paradigms. Welfare paradigms are defined as normative principles which shape and guide policy content, goals and assessment (Kuhn 1970). The welfare paradigm of activation, which is currently predominate in Europe (including Finland), is characterised by an individualised approach, a strong emphasis on employment and an economisation of citizenship as core principles (Pascual and Magnusson 2007). If citizens believe that the trial suits the established welfare paradigm of activation, we expect high support. Therefore, we assume that

a debate about embedding the new policy instrument into the paradigm of activation is important to legitimise its possible ensuing adoption. Since paradigms can be contested and are subjectively *framed*, they represent as a lens through which features of policy issues and ideas can be highlighted (Entman 1993, 52-4). MPs can use the same framing to argue for and against the same policy experiment. As an example, the following tweet was coded as "0*"* in activation, meaning it delegitimised basic income as an activation tool: "Unemployed people are brought to their knees, bureaucracy is enlarged, and job barriers increase by raising the necessity of income support. It is not surprising that the scientist who does the experiment is frustrated." After the activation turn in the late 1990s, almost all welfare regimes and political parties have relied on active labour market policies. There is a rich discussion on whether leftist parties advocate more for activation that other parties (see e.g. Vlandas 2013), but since active labour market policies are a fundamental aspect of social security in Finland, partisanship effects are not expected.

H2b: If MPs use the experiment to legitimise basic income, they connect the basic income trial to the predominant paradigm of activation.

5.3.3 Interpreting and framing basic income

The last function of welfare experiments is to deliberate policy ideas. Politicians can use welfare experiments to argue for specific welfare values and strategies represented by the experiment. This means they *can elaborate on their reasoning and distinguish themselves from other parties by using specific frames.* During the experiment, the topic is on the policy agenda and an intensified exchange of arguments can take place. This function contrasts with the dispersion hypothesis while it can go together with the legitimisation hypothesis: bringing basic income in line with different political framings or diversifying the lines of ideological argumentations can help to (de)legitimise basic income. We rely on a framing analysis to determine whether supporters try to reconcile basic income with the predominant paradigm or whether other arguments are used to interpret basic income.

To better analyse the arguments, we condense them into framings that either deal with basic income recipients, with basic income as a policy instrument as such or with political proponents that introduced basic income. On the one hand frames can address *individuals' legitimacy to receive social security*, that is whether they deserve the basic income, and more specifically whether they are regarded as having equal rights and as such, giving basic income is regarded as fair. For instance, politicians could argue that the social contribution of unemployed is lower than those of working people and as a result, they do not deserve receiving basic income (Bay

and Pedersen 2006). On the other hand, frames can also address *the legitimacy* of those parties that introduced the basic income (which is not equal to government in this case): Political parties can claim credit or avoid blame (Pierson, 1996). Finally, activation as a core welfare paradigm can also be used as a frame and can help to legitimise policy instruments by connecting them to the overall welfare state architecture. To sum up, we have three addressees to whom the arguments can be directed and along which we structure the frames (see Table 5.1). These types of "strategic framing" (Elmelund-Præstekær and Emmenegger 2013) are crucial for understanding the opportunities and limits of welfare state reforms. All frames can be used to legitimise or delegitimise basic income.

Table 5.1. Overview of framing strategies

towards…	Framing strategies	Explanation	Examples
Recipients of basic income	Deservingness	Do recipients deserve the benefit?	"It is interesting that those people that support a basic income of 500-600€ per month for citizens that do nothing think that 300€ per month is too much to raise a little child at home" (MP of the Centre Party, February 2018)
	Equality/fairness	Do recipients deserve the benefit due to their equal rights as citizens? Is it fair that unemployed people receive it?	"For me, basic income means to free people from the slave market and giving back their citizenship" (MP of the National Coalition Party, January 2017)
Political parties as supporters and opponents of basic income	Credit claiming	Do political parties claim credit for (not) having introduced basic income?	"The Centre Party implements a historical basic income experiment […]." (MP of the Centre Party, October 2016)
	Blame avoidance	Do political parties avoid blame for having introduced it wrongly or for not voted in favor of it?	"The basic security must be enabling not to be crippling. The current model is confusing. Therefore, simpler basic security is needed. […]. The Centre Party wants a basic income that allows you to work and encourages studying." (MP of the Centre Party, September 2019)
Basic income as a policy instrument as such	Fitting the welfare paradigm of activation	Is basic income connected to activation as the overall welfare paradigm?	"Unemployed people are brought to their knees squatted, bureaucracy is enlarged, and job barriers increase by raising the necessity of income support. It is not surprising that the scientist who does the experiment is frustrated." (MP of the Green League, June 2018)

Individuals' legitimacy to receive basic income is divided in a fairness/ equality and *deservingness* framing. Fairness can be seen as present when MPs argue that basic income helps to establish unity with the unemployed, for instance by improving the well-being and by reducing poverty of unemployed people. If recipients of basic income are framed as unequal, the opposite is said. Policies have a higher likelihood to be accepted if public consider the social

security as a fair share. Agreeing with the literature (Helbing 2014), we assume that, in general, leftist parties most often use frames of fairness/equality.

If MPs argue that recipients do not *deserve* an unconditional welfare service, the frame of deservingness is used (Van Oorschot 2006). Deservingness is considered as an alternative to blame avoidance: rather than obscure responsibility, political parties can change the public perception of specific groups and make them appear lazy and unsocial, which allows labelling them as *underserving* (Esmark and Schoop 2018).

The following two framings are strongly connected to vote-seeking incentives that (de)legitimise the own or other political parties. If MPs use the framing of *blame avoidance* (Hering 2008; Pierson 1996), they obfuscate or wish to compensate their voters for pursuing an unpopular reform, which empirically reduces the likelihood of electoral punishment.

The frame of *credit claiming* may be used to highlight a party' s support for a popular trial or for aspects of an experiment that political parties and voters opposed (Nelson, 2016). Supporters in the governing party are expected to claim credit for their initiative while supporting opposition parties could avoid blame by arguing that the experiment would have been better if they had implemented it.

We argue that the differences in framing strategies do not arise from government and opposition constellations but are produced by party positions, or, supporter vs. opponent positions. Since the welfare experiment was implemented by government as well as opposition parties, it is more evident that supporters and opponents differ.

> *H3: Political parties use frames consistent to their party ideology and to their attitudes towards basic income.*

Alternative explanations are also part of the empirical analysis. For instance, problem pressure could have a substantial effect on the frequency and polarity of tweets. Since the basic income trial in Finland is an attempt to reduce unemployment, the problem pressure regarding unemployment rates is important here. If unemployment is high, MPs are expected to be eager to find solutions and continuously portray the pilot as a possible strategy for reducing unemployment. Therefore, we include the unemployment rate in MPs' constituencies in 2017 and 2018 into the empirical analysis. We also control for gender and age, because young people are assumed to use Twitter more frequently and are, as well as females, considered being more in favour of basic income (Parolin and Siöland 2019).

5.4 Case selection: The Finnish basic income trial

In 2015, PM Sipilä (Centre Party) declared that the basic income experiment was to be launched in 2017 and to end in 2018 (PM Sipilä 's government program 2015). The reason for implementing this experiment was twofold: first, the current complex social security system, which may entitle the recipient to several means-tested benefits at the same time, is seen as an incentive trap (HE 215/2016 vp). Some argue that this trap can discourage unemployed people from accepting part-time or temporary work as the economic gain is at times low or non-existent. Second, the complicated social security system has created a very complex bureaucratic system, which has been strongly criticised by the citizens. Although several versions of the basic income system were discussed (see HE 215/2016 vp), the policy experiment, which included a monthly payment of 560 € for two years, with a representative random sample of 2,000 unemployed people was put into practice in 2017. The basic income was, unlike most benefits in Finland, tax-free and unconditional, allowing the recipient to undertake any kind of employment and while receiving the monthly payment. According to the Finnish Ministry of Social Affairs and Health (2016), the aim of the basic income experiment "is to explore whether basic income could be used to reform the social security system so as to reduce incentive traps relating to working." To sum up, the Finnish government sought to gain empirical evidence on whether a basic income could reduce bureaucracy and simplify the tax-benefit system (Kallio and Saarinen, 2014; Kangas, Simanainen and Honkanen 2017).

Compared to other states in which basic income entered public discourse, such as Brazil and the US, Finland benefited from diverse political party support for the idea (De Wispeleare 2016; Koistinen and Perkiö 2015). Basic income was seen as an instrument for decreasing bureaucracy and therefore integrated into the centre-right ideological discourse as not conflicting with existing policies of labour-market-activation (Perkiö 2018). Supporters of the basic income trial were the Centre Party, the Green League and the Left Alliance, while the Finns Party, Swedish People's Party of Finland, the National Coalition Party, the Social Democratic Party of Finland, and the Christian Democrats were opponents of the basic income experiment (De Wispelaere, Halmetoja, and Pulkka 2018). Thus, only one party in government, the Centre Party, and two opposition parties, the Green League and the Left Alliance, formed an alliance to support the basic income trial (Koistinen and Perkiö 2014).

We chose the basic income trial in Finland from 2017 to 2018 as our case study because it is the first basic income trial conducted on a national scale, because Finnish political parties have been central spokespersons on this issue since the beginning (Koistinen and Perkiö 2015) and because the availability and representation of Finnish MPs on Twitter is high. Basic income is

a popular but also controversial policy experiment, so we expect to find a very intense and frequent debate, large enough for quantification. Of the 200 members of the Finnish parliament, 85.5 percent have active Twitter accounts. The median of tweets by Finnish political representatives is 1,500 and the mean number of followers is 23,794. We therefore expect to collect many widespread data entries compared to policy experiments in municipalities.

As a microblog, Twitter enables politicians to influence public opinion and to engage in quick and direct dialogue with a large electorate (Conway and Kenski 2013). In social sciences, Twitter data has mainly been used for topics as campaigning (Railo and Vainikka 2017), contentious politics and political polarisation. Many studies use Twitter exclusively for predictions and as a big data source which carries the risk of misunderstanding the context (Bozdag and Smets 2017), to include bots and to miss the actual contents of communication (Stier et al. 2018). Only a few studies analyse non-US tweets or focus on tweets about specific policies (Bozarth and Pal 2019; Stier et al. 2018). In our study, Twitter tweets serve as data source for political debate about a narrow policy experiment. We argue that Twitter tweets can be easily and intersubjectively interpreted due to the maximum of 280 characters. Because of the word limit, Twitter users must make their argument or statement straightforward. In comparison to manifesto data and parliamentary speeches, tweets allow to map short-term developments due to the availability of daily, even hourly observation points (Van Kessel and Castelein 2016) which is especially useful for this study. Besides, tweets are often used as a medium to criticise other politicians and parties, which increases the likelihood to capture framing strategies as blame avoidance (ibid.).

To test our hypotheses, we focus on a single welfare experiment, having reasoned that this narrow scope would enable us to gain a better understanding of the nuanced mechanisms of framing strategies (). Nevertheless, by applying the three function of welfare experiments on this basic income trial, we hope to develop an analytical template that can easily transferred to other policy experiments. The period of analysis is from 2016 – the governmental decision to introduce the basic income trial – to the end of the experiment in 2018. However, we made the experimentation period from 2017 to 2018 our focus, since we are interested in the course of the experiment and not so much in the evolution of the political decision to implement the trial.

5.5 Data and method

To answer our four research questions, the empirical analysis relies on a quantitative text analysis of Twitter data generated by Finnish MPs which is combined with inference statistics. Quantitative content analysis is defined as “the systematic assignment of communication

content to categories according to rules and the analysis of relationships involving those categories using statistical methods" (Riffe, Lacy, and Fico 2014, 18). Since we are interested in reasons for specific communication content, quantitative text analysis can help us to systematically code and analyse tweets without losing objectivity. We used descriptive and inference statistics to analyse the results. The data was drawn from the Twitter Application Programming Interface (API). In a first step, the authors extracted the latest 3,200 tweets by each MP with the program *rtweet*. In a second step, we excluded all messages by Finnish MPs that did not mention *perustulo* or *basic income, which* left 849 tweets. We focused on keywords instead of hashtags since the latter has various prerequisites regarding user abilities and intentions (Bozdag and Smets 2017). In a third step, we translated the Finnish tweets into English to facilitate the coding. The unit of observation is the single tweet at a certain time by a specific MP. We hand-coded all Twitter tweets by Finnish members of parliament from 2016 to 2018; retweets were treated as separate tweets. Two persons coded the tweets according to a *a priori* codebook: the value of Cohen`s Kappa was 0.88, which represents a high intercoder-reliability.

5.6 Results

5.6.1 Descriptive statistics

Between 2016 and 2018, 46 percent of all 200 Finnish MPs tweeted at least once about basic income. The average number of tweets by Finnish MPs on basic income is 11.15 tweets, with a maximum of 70 tweets and a minimum of one tweet. While the average age of all candidates in the Finnish parliament election was 45.8 years, the mean age of those MPs that used Twitter for deliberating about basic income is slightly younger (see Online Appendix). However, 76 MPs (25 percent of the sample) are older than 52 years. Our sample consists more females than males, though this is not representative of the candidate gender ratio in 2015, for females made up 39.4 percent of the candidates. The problem pressure in the constituencies of MPs varies: While some MPs had an unemployment rate of 9.3 percent in their electoral district, others had an unemployment rate of 17.2 percent. The unemployment rate declined in 2018 by an average of 12.18 to 10.22 percent.

All political parties in parliament are represented in our sample; however, the sizes between the share of seats and the share of tweets differ. While the Green League (VIHR) and the Left Alliance (VAS) tweet more frequently about basic income, the other parties – Centre Party (KESK), National Coalition Party (KOK), Social Democratic Party (SDP), Finns Party (PS), Swedish People`s Party (RKP) and Christian Democrats (KD) – are relatively underrepresented

on Twitter, considering their size in parliament. To control for this imbalance, we weight every tweet by the relative party size in parliament when running the regression.

In Table 5.2, the summary statistics of our independent and explanatory variables are displayed. In total, MPs tweeted 849 times (n) about basic income. If MPs tweeted in a supportive way about basic income, it was coded as positive (1) while basic income rejecting tweets were coded as negative (0). The number of positive tweets about basic income is higher than the number of negative tweets. Of the 504 tweets between 2016 and 2018, we were able to assign merely 359 tweets to positive or negative. The welfare paradigm of activation is significantly more frequently used than other framing strategies. Basic income is positively but also negatively associated with different framing strategies.

Table 5.2. Summary statistics of the dependent and independent variables

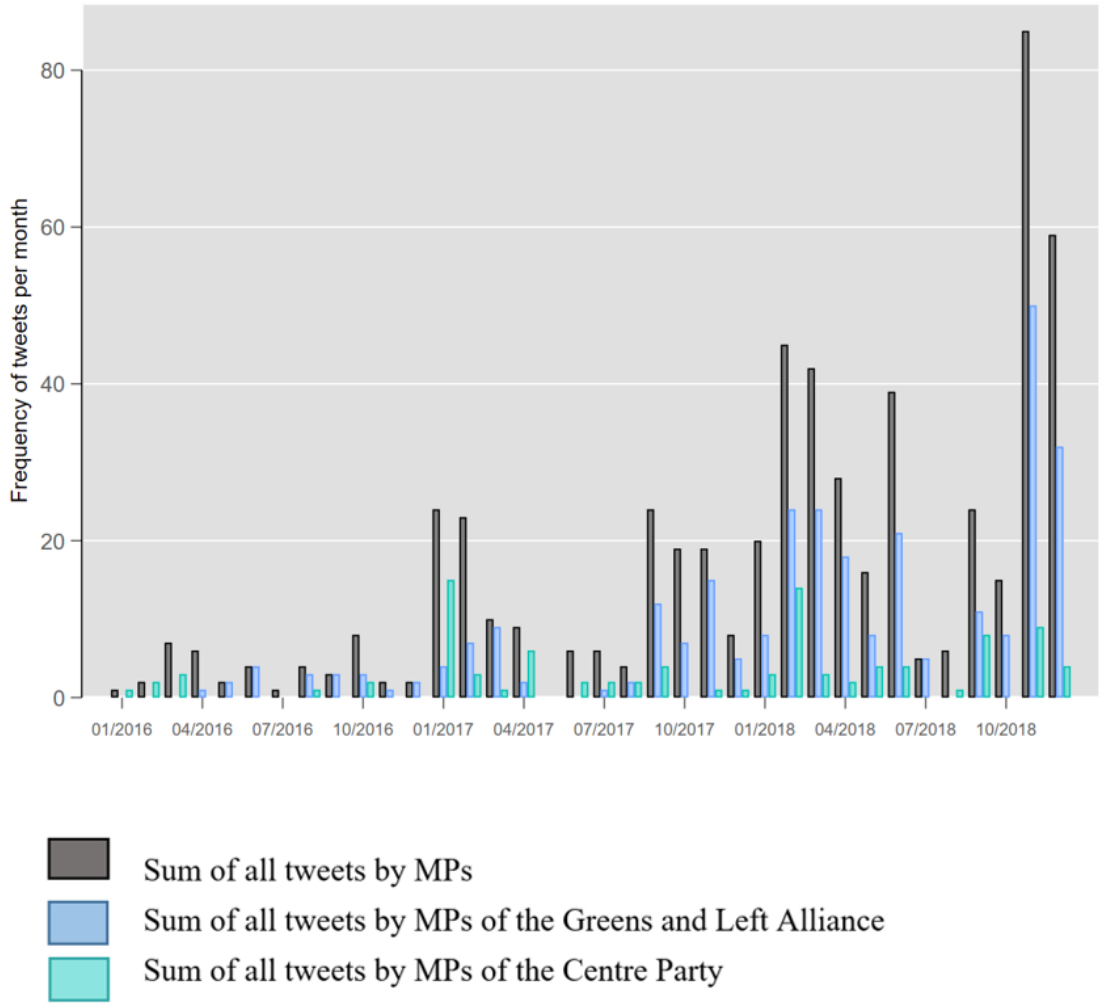
	n	%(yes)	%(no)
Polarity (yes=positive, no=negative)	359	59.06	38.44
Frames:			
Activation	150	66.00	34.00
Solidarity	87	78.16	21.84
Deservingness	20	80.00	20.00
Blame avoidance	26	100.00	0.00
Credit claiming	73	94.45	5.55

5.6.2 Test of hypothesis 1: Postponing political debates

If politicians were interested in using policy experiments for postponing a policy reform, they would significantly reduce their share of tweets in the debate. For this reason, we analysed the frequency of Twitter tweets by MP groups about the basic income experiment from 2016 to 2018. As seen in Figure 5.1, contrary to expectation, the number of tweets by Finnish MPs on the basic income trial increased over time (the left bars in dark grey). While MPs tweeted 24 times in the month of the trial's introduction (January 2017), the number increased to 85 tweets in the penultimate month of the experiment (November 2018). Interestingly, 26 of the 59 tweets in December 2018 were made by MPs of the government parties, who would be responsible for the implementation. The middle bars in light blue illustrate the frequency of tweets by opposition MPs that support the basic income experiment (Greens and Left Alliance). In total, they make up a large part of the total tweets. Centre Party, as the only governing party that supported the trial, has an ambiguous tweet history (right bars in turquoise): while the number of tweets increased when the experiment started and when half the time was up, their general share over time is rather low compared to the BI supporting parties from the opposition. This

could indicate a certain postponement. Relying on the data, the Greens in particular were the driving force behind the basic income debate on Twitter, while the governing Centre Party kept rather reserved. To sum up, Figure 5.1 indicates that only one supporting party could have used the basic income experiment as a postponement strategy while other supporting - and rejecting - parties did not reduce their share of tweets over time. Therefore, Hypothesis 1 is partly confirmed for the Centre Party but rejected for the others, which is theoretically also plausible.

Figure 5.1. Frequency of Twitter tweets by MPs on basic income over time (2016-2018)



5.6.3 Test of hypothesis 2a: Legitimising basic income

To test hypothesis 2a, we used a logistic weighted regression with *polarity* as the explanatory and *year* as the core independent variable. If MPs use the trial to legitimise basic income, we expect them to primarily wait for the results of the evaluation and continue to express their support. The logistic weighted regression helps to give answers with a remaining small uncertainty and enables us to control for other factors. We anticipate a positive coefficient for

the variable *year*. However, all four models (column 1-4) report a statistically significant decrease in positive tweets in 2018. The probability of negative tweeting was higher towards the end of the experiment than at the beginning. The average predicted probability of positive tweeting in 2017 is 84.8 percent and 62 percent in 2018. While political parties that supported basic income also tweeted positively about the trial, we cannot see a statistically significant effect for government (column 2). This finding highlights the remarkable composition of supporters. While the predicted probability of positive tweeting is 97 percent for the Green League and Left Alliance in 2017, it declines to 93 percent in 2018. The Centre Party` s predicted probability to tweet positively declined by 10 percentage points to 84 percent. Female MPs are more likely to tweet positively about basic income, though we found no significant effects for age, all things being equal. Females have a mean predicted probability of 84.9 percent to tweet positively while males have a mean predicted probability of 36.3 percent. In column 3, we can see that parties who support basic income (VIHR, KESK and VAS) have a higher likelihood to tweet positively about the trial than the National Coalition Party. However, their support declined slightly over time. Since the Social Democratic Party and the Finns Party only tweeted negatively about basic income, the statistics software did not calculate probabilities for these two parties because failure was predicted perfectly. We are going to analyse the party findings in greater detail later. Column 4 includes the coefficients for problem pressure. We hypothesized that the higher the unemployment in MP`s districts, the higher the support for basic income. This argument is only supported in 2018 with a 10 percent significance level. However, in 2017, MPs that had a lower unemployment rate in their constituency tweeted more positively about the basic income trial, all things being equal. An explanation could be that constituencies with high unemployment rates prefer immediate measures compared to a process of structural welfare changes. Support for the basic income experiment thus cannot be explained by problem pressure here but is rather an ideological issue, as demonstrated by the varying coefficients for political parties. For hypothesis 2a, we expected positive coefficients for the variable *year*. However, the results demonstrate that a legitimizing function of trials is feasible for subsamples of supportive parties but is not confirmed for the whole sample and time.

Table 5.3. Weighted logit regression: polarity of tweets (positive=1, negative=0), 2017-2018

	(1)	(2)	(3)	(4)
Year (2017-2018)	-0.753**	-1.166**	-1.233***	-1.103**
	(0.331)	(-2.66)	(0.467)	(0.484)
Government		-0.741*		
		(-2.25)		
Party in favor of basic income		3.101***		
		(7.57)		
Green League (VIHR)			6.085***	6.173***
			(1.205)	(1.259)
Centre Party (KESK)			3.917***	4.115***
			(1.121)	(1.162)
Left Alliance (VAS)			4.565***	5.029**
			(1.182)	(1.299)
National Coalition Party (KOK)			2.088*	1.813
			(1.125)	(1.245)
Social Democratic Party (SDP)			*omitted*	*omitted*
Finns Party (PS)			*omitted*	*omitted*
Gender (female=1)		1.562***	2.288***	2.470***
		(4.55)	(0.456)	(0.481)
Age		-0.00286	0.016	0.023
		(-0.17)	(0.022)	(0.022)
District unemployment in 2017				-0.989*
				(0.505)
District unemployment in 2018				1.060*
				(0.587)
Constant	1520.84**	2349.9**	2484.32***	2221.48**
N	254	254	243	243
LR chi2 (3)	5.52**	142.65***	154.11***	158.39***
Pseudo R2	0.01	0.36	0.41	0.43
BIC	396.96	281.98	257.83	264.54
AIC	389.88	260.75	229.89	229.61

*Coefficients as log odds, standard errors in parentheses, ***=1%significance level, **=5% significance level, *=10% significance level*

5.6.4 Test of hypothesis 2b: Legitimising basic income by using the welfare paradigm of activation

Referring to Table 5.2, there are nearly twice as many activation frames than others. While MPs used activation 150 times to argue for or against the basic income experiment on Twitter, solidarity is used only 87 times. Of all 359 coded tweets, 41 percent were linked to the welfare

paradigm of activation. Thus, the predominant welfare paradigm of activation is clearly recognizable on Twitter which supports findings of Perkiö (2020) who analysed the political pre-experimental debate on basic income in Finland. Basic income is discussed as a welfare reform that stands in contrast to or in course of activation. In 66 percent of 150 cases, MPs argued that basic income activates people, while 34 percent of those tweets disapproved basic income due to its passive character. This highlights that activation with regard to basic income is a controversial and contested issue. The frequency of activation frames supports the notion that activation is a central argument for the (de)legitimization of basic income, which confirms hypothesis 2b.

5.6.5 Test of hypothesis 3: Framing basic income along ideological lines

We argue that differences in the use of framings correlate with a) political parties` ideological preferences and with b) supporter vs. opponent constellations. To determine which party uses which framing strategy, we calculated correlations using Cramer`s V. With regard to political parties` ideological preferences, centre-right parties use activation as a framing strategy to justify/reject basic income more often than they use fairness frames. While leftist parties did not use deservingness as a framing strategy, it is the argument used most often by centre-right parties. Supporting centre-right parties framed recipients as deserving while opposing centre-right parties framed them as undeserving. Leftist parties use fairness more frequently than activation, with the exception of the Left Alliance. Thus, we can observe a framing use depending on party ideology. In addition, we expected in Hypothesis 3 basic income supporters from opposition parties to avoid blame and supporters from the government to claim credit. However, all supporters claimed credit at a very low scale (0.08-0.11), though nobody used blame avoidance. Since the correlations are very low, it is not possible to make valid statements on this part of the hypothesis. Next, we expected opponents to argue that basic income is not activating and not fair while supporters were expected to use the frames in a positive way. Indeed, we find negative values for KOK and SDP and positive values for the three supporting parties. To sum up, hypothesis 3 can rather be confirmed, though the correlations are low.

Table 5.4. Correlations between framing strategies regarding basic income and political parties depending on being supporting or opposing basic income

	Centre-right parties		**Leftist parties**		
	Supporter	Opponent	Supporter		Opponent
	KESK	KOK	VIHR	VAS	SDP
Activation	0.11	-0.47	0.32	0.19	-0.16
Fairness	-0.05	-0.30	0.36	0.12	-0.26
Deservingness	0.48	-0.37	-	-	-
Credit-claiming	0.10	0.02	0.11	0.08	0.03
Blame avoidance	-	-	-	-	-
The direction of the correlations was determined with Pearson`s r.					

5.7 Conclusions

This article adds to the literature on the functions of welfare experiments, including trying to answer which function was empirically more relevant to explain the course of the basic income experiment in Finland. We analysed three functions of welfare experiments - legitimizing policy ideas, postponing political conflicts and reframing social concerns – to find out which of these were used in this case. Relying on a quantitative content analysis, descriptive and inference statistics, we analysed all Twitter tweets by Finnish MPs between 2017 and 2018 about the basic income trial, as well as examined frequency, polarity and framing of the content of the tweets.

The result demonstrates that a mixture of functions is present. While the Finnish MPs of all political parties fought over the associated social norms regarding activation and solidarity, which can be interpreted as equal right regardless of contribution, postponing of political debate was only present for tweets of the Centre Party as the only supportive governing party. Centre-right parties relied on activation and deservingness frames to justify or to reject basic income, while left parties used solidarity frames most often to argue for or against the trial. The competition over ideological concepts among political parties confirms hypothesis 3 (political parties use frames consistent to their party ideology and to their attitudes towards basic income), while the increasing number of tweets rejects hypothesis 1 about postponement. MPs continued and increased their share of tweets about basic income, thus, it could be argued that the welfare experiment did not serve to disperse the political debate. However, the number of positive Twitter tweets declined over time, including those of the supporting parties. The declining positive number of tweets on the supporter side might indicate that, in this case, evidence-based policy making is not necessarily the goal of policy experiments. Before the results were available, the tweets had become more negative. Hypothesis 2a is only partially supported

because although the number of positive tweets among the supporters was high, it had decreased over time. However, they aligned basic income to the core welfare paradigm of activation which could demonstrate that the fit of basic income to the overall welfare architecture is a main point of discussion (Hypothesis 2b). This highlights the importance to connect new social policies to existing welfare paradigms to legitimise it (Perkiö 2020). To sum up, the empirical analysis based on the basic income trial in Finland demonstrates that welfare experiments may not necessarily serve to find new evidences but instead represent a good opportunity for lively debates on how social security should be shaped and how welfare paradigms are to be understood. This would indicate that the basic income trial in Finland could have been used to align the policy to the welfare paradigm of activation and the differences in the use of frames correlate with political parties` ideological preferences and supporter vs. opponent constellations.

This article is the first that analyses welfare experiment strategies in a systematic and quantitative way, by using the Finnish basic income experiment as a case study. Since policy experiments can help us to understand the options of welfare reforms, the authors urge research to focus on these timely and spatially limited trials in order to gain a profounder understanding of the feasibility of radical reforms. This article demonstrates that policy experiments may have a different purpose than scientific experiments: although they purport to promote ideas of innovation and investigate scientific truth, policy experiments more likely serve strategic and political functions. More precisely, the expression of opinion by MPs on Twitter about the basic income trial in Finland suggests in this case that the policy experiment was neither seen as a policy instrument to legitimise or postpone policy ideas, but rather as a tool to enhance political debate about social norms attached to these policy ideas. In this context, it is interesting to bring the design of the policy experiment to the fore: obliged to generate results quickly and to seek compromises between political parties, experimental designs are often inadequate for finding significant and valid effects, meaning it is better not to give too much weight to the evaluation results (see also Perkiö 2020). To find out whether trials become real reforms, it could be more important for public policy research to analyse the polarity and frames of the debate during the experiment instead of having a look on the results at the end of the experiment.

From a methodical point of view, this paper has demonstrated the usefulness of quantitative content analysis with Twitter tweets that allowed us to analyse high frequency political debates, without losing specific meanings. Twitter data is an adequate source in for public policy research as well because it simplifies the coding, increases reliability and helps to uncover lines of argumentation.

Although it is impossible to pinpoint exactly why policy experiments take place, future research should expand the analysis to other welfare experiments in order to acquire profounder insights into their functions. Other framing strategies and alternative explanations should be tested in prospective studies. In addition, future research could compare social media posts with official documents to find out whether MPs attempt to target specific groups by different media. A measurement of tweets` success by analysing retweets more specifically can also increase our knowledge on strategic framing.

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Supplementary Materials

Appendix A *to The welfare state and support for environmental action in Europe*

A.1 Data

A.1.1 Variables

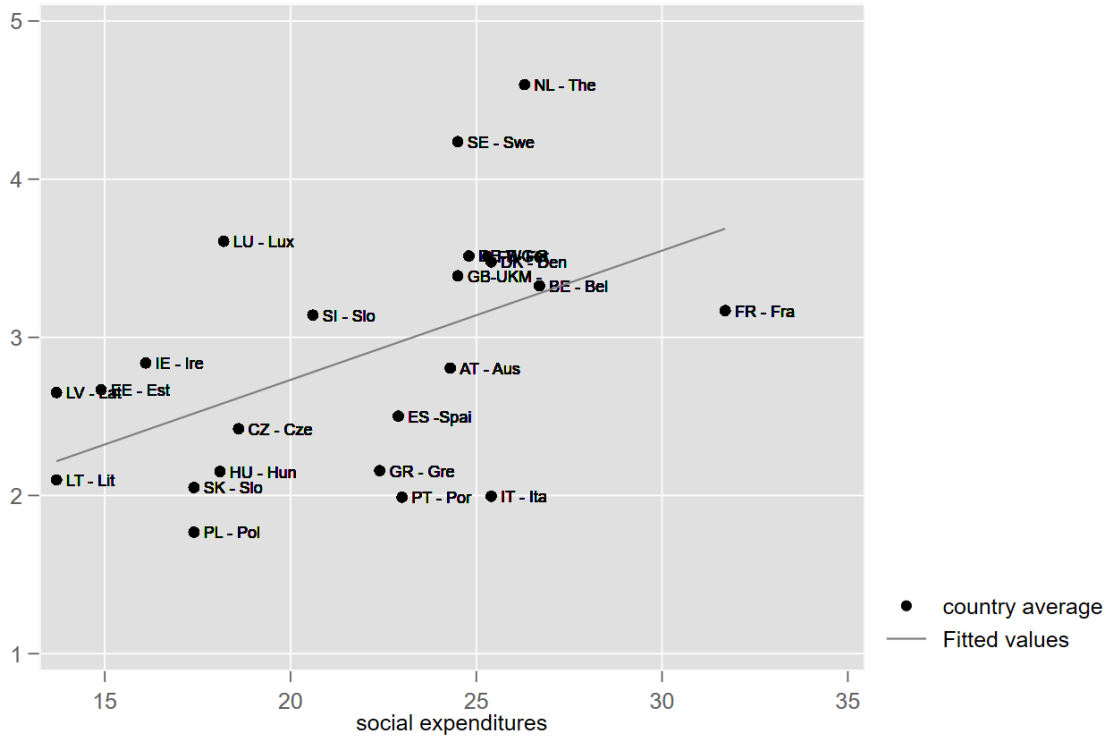
Variable	***Description***	***Source***
Individual environmental action	Index for individual environmentally-friendly behaviour (8 items, e.g. “consider carbon footprint for food purchases” or “reducing waste”)	Eurobarometer 91.3 (2019)
Support for national environmental action	Index for two environmental policy-related survey items: “How important do you think it is that the (NATIONALITY) government sets ambitious targets to increase the amount of renewable energy used, such as wind or solar power, by 2030?” and “How important do you think it is that the (NATIONALITY) government provides support for improving energy efficiency by 2030 (e.g. by encouraging people to insulate their home or buy electric cars)?”	Eurobarometer 91.3 (2019)
Working class	Subjective social class belonging, five class categories from working class to higher class, here: dichotomous coding	Eurobarometer 91.3 (2019)
Elderly	Above 65 years old (age)	Eurobarometer 91.3 (2019)
Education	Age when stopping fill-time education (four categories: no full education, up to 15 years, 16-19 years, 20 years and still studying)	Eurobarometer 91.3 (2019)
Gender	Sex (Male=1, Female=0)	Eurobarometer 91.3 (2019)
Residence (large town)	Place of residence, three categories: rural area or village, small or middle-sized town, large town, here: dichotomous coding	Eurobarometer 91.3 (2019)
Left-right orientation	In political matters people talk of "the left" and "the right". How would you place your views on this scale; 1 (left) to 10 (right)	Eurobarometer 91.3 (2019)
Routine workers and working class	Current occupation, eight occupation categories, here: dichotomous coding	Eurobarometer 91.3 (2019)
Ability to pay bills	Difficulties to pay bills at the end of the month during the last twelve months, three categories (most of the time, from time to time, almost never/never)	Eurobarometer 91.3 (2019)
Social expenditures	Net total social expenditures in percentage of GDP (2015)	Social Expenditure Database (SOCX)-OECD

GDP per capita	Real GDP per capita (2018)	Eurostat
Pension replacement ratio	gross median individual pension income of the population aged 65–74 relative to gross median individual earnings from work of the population aged 50–59, excluding other social benefits (2018)	Eurostat
Unemployment replacement rates	Net replacement rates in unemployment measure the proportion of previous in-work income that in maintained after 1,2 …T months of unemployment (2012)	OECD Data

A.1.2 Descriptive statistics

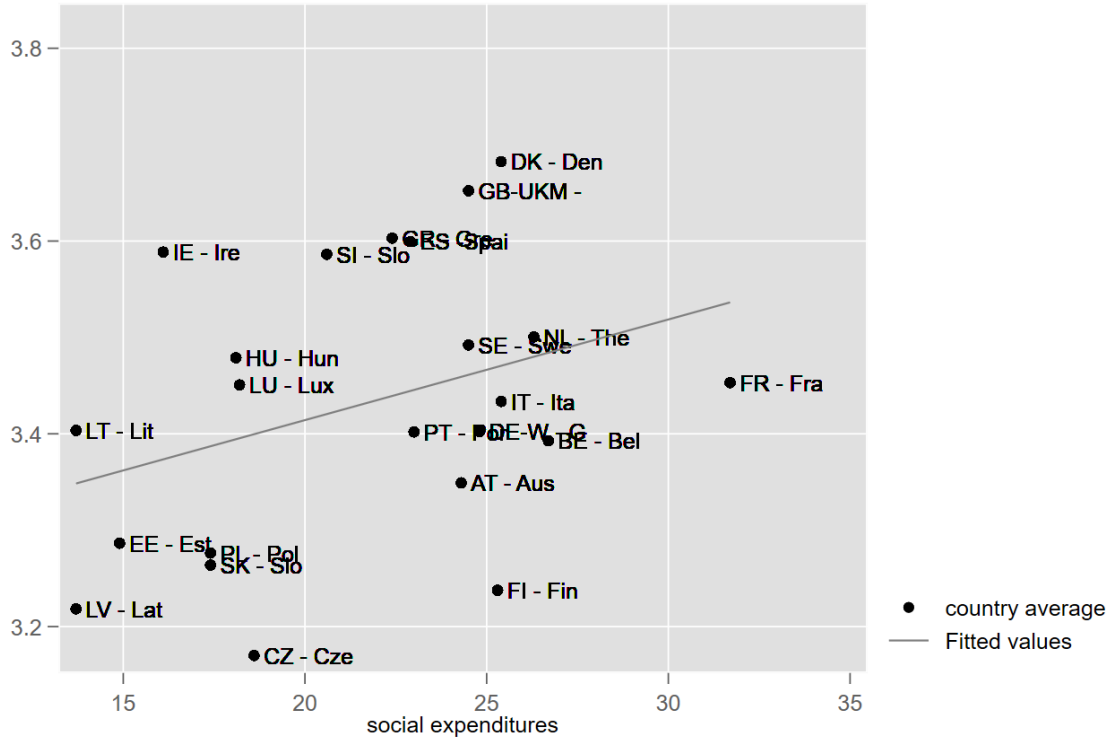
Variables	***Value range***	***Mean (SD)***
Individual level		
Individual environmental action	0-8	2.71 (1.78)
Individual environmental action (binary)	0-1	0.30 (0.46)
Support for national environmental action (binary)	0-1	0.60 (0.48)
Working class (subjective)	0-1	0.27 (0.44)
Elderly	0-1	0.30 (0.45)
Education	0-3	2.28 (0.71)
Gender (male=1)	0-1	0.45 (0.49)
Residence (large town=1)	0-1	0.28 (0.44)
Working class (occupational)	0-1	0.21 (0.41)
Ability to pay bills	1-3	1.38 (0.62)
National level		
Social expenditures (% of GDP)	13.7-31.7	21.79 (4.67)
Pension replacement rates	28.4-91.8	62.06 (18.84)
GDP per capita	12,180-57,960	28,003 (12,976)
Unemployment rate	2.9-21.5	7.62 (4.20)
Pension replacement ratio	0.35-0.87	0.53 (0.11)
Unemployment replacement rates	10-75	53.41 (15.34)

A.1.3 Scatterplot of individual environmental action (country average) and social expenditures as % of GDP



Notes: Own calculations, based on the Eurobarometer 91.3 (2019) and OECD data.

A.1.4 Scatterplot of support for national environmental action (country average) and social expenditures as % of GDP



Notes: Own calculations, based on the Eurobarometer 91.3 (2019) and OECD data.

A.2 Model specification and robustness checks

A.2.1 Multilevel mixed logit regression for both outcome variables with continuous independent variables

Model	***(1)***	***(2)***	***(3)***	***(4)***
Dependent variable	***Individual behaviour***		***National action support***	
Age	0.00229**	0.00231**	-0.00187*	-0.00188*
	(0.00101)	(0.00101)	(0.000961)	(0.000961)
Social class	0.220***	0.219***	0.134***	0.133***
	(0.0197)	(0.0197)	(0.0184)	(0.0184)
Large town	0.0586	0.0592	0.0759**	0.0769**
	(0.0382)	(0.0382)	(0.0363)	(0.0363)
Education	0.421***	0.422***	0.210***	0.210***
	(0.0285)	(0.0285)	(0.0262)	(0.0262)
Gender (Male=1)	-0.332***	-0.333***	-0.0981***	-0.0987***
	(0.0342)	(0.0342)	(0.0317)	(0.0317)
Left-right orientation	-0.0668***	-0.0665***	-0.0756***	-0.0754***
	(0.00828)	(0.00828)	(0.00756)	(0.00756)
Social expenditures		0.0884***		0.0325
		(0.0305)		(0.0199)
Random intercept for country	-0.238	-0.403***	-0.780***	-0.839***
	(0.153)	(0.154)	(0.155)	(0.156)
Constant	-1.870***	-3.793***	0.135	-0.571
	(0.196)	(0.685)	(0.134)	(0.451)
Observations	18,456	18,456	18,101	18,101
Number of countries	22	22	22	22

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.2 Multilevel mixed logit regression for both outcome variables with occupational classes

Model	***(1)***	***(2)***	***(3)***	***(4)***
Dependent variable	***Individual behaviour***		***National action support***	
Elderly	-0.268**	-0.266**	-0.260***	-0.260***
	(0.109)	(0.109)	(0.0974)	(0.0974)
Occupational class: routine workers and working class	-0.352***	-0.351***	-0.263***	-0.262***
	(0.0731)	(0.0731)	(0.0685)	(0.0685)
Occupational class: middle class	-0.0315	-0.0303	-0.0124	-0.0122
	(0.0693)	(0.0693)	(0.0668)	(0.0668)
Occupational class: employers	*reference*	*reference*	*reference*	*reference*
Large town	0.0572	0.0583	0.0954*	0.0971**
	(0.0512)	(0.0512)	(0.0491)	(0.0492)
Education	0.393***	0.393***	0.144***	0.144***
	(0.0430)	(0.0429)	(0.0396)	(0.0396)
Gender (1=male)	-0.374***	-0.375***	-0.156***	-0.157***
	(0.0464)	(0.0464)	(0.0439)	(0.0439)
Left-right orientation	-0.0650***	-0.0646***	-0.0608***	-0.0605***
	(0.0113)	(0.0113)	(0.0105)	(0.0105)
Social expenditures		0.0834***		0.0356*
		(0.0312)		(0.0210)
Random intercept for country	-0.241	-0.385**	-0.734***	-0.798***
	(0.154)	(0.156)	(0.159)	(0.160)
Constant	-0.888***	-2.704***	0.655***	-0.119
	(0.221)	(0.709)	(0.167)	(0.484)
Observations	9,818	9,818	9,686	9,686
Number of countries	22	22	22	22

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.3 Multilevel mixed logit regression for both outcome variables with new measurement for social expenditures with enlarged sample

Model	***(1)***	***(2)***
Dependent variable	***Individual behaviour***	***National action support***
Elderly	-0.0888**	-0.0549
	(0.0372)	(0.0339)
Working class	-0.381***	-0.126***
	(0.0421)	(0.0365)
Large town	0.0446	0.101***
	(0.0359)	(0.0331)
Education	0.408***	0.264***
	(0.0258)	(0.0234)
Gender (male=1)	-0.322***	-0.0915***
	(0.0322)	(0.0292)
Left-right orientation	-0.0533***	-0.0527***
	(0.00768)	(0.00679)
Social expenditures	0.0806**	-0.00539
	(0.0387)	(0.0261)
Random intercept for country	-0.205	-0.607***
	(0.136)	(0.141)
Constant	-2.568***	0.344
	(0.647)	(0.438)
Observations	21,771	21,307
Number of countries	28	28

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.4 Logit regression for individual behaviour by welfare regime subsamples

Model	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***
Sample	***Nordic welfare regimes***	***Continental welfare regimes***	***Anglo-saxon welfare regimes***	***Southern welfare regimes***	***Eastern welfare regimes***
Elderly	-0.0391	0.350***	-0.206	-0.0529	-0.0897
	(0.0814)	(0.0642)	(0.126)	(0.113)	(0.0675)
Working class	-0.204*	-0.526***	-0.587***	-0.428***	-0.255***
	(0.114)	(0.0873)	(0.106)	(0.104)	(0.0702)
Large town	0.552***	-0.193***	-0.182*	-0.0146	-0.0313
	(0.0929)	(0.0667)	(0.106)	(0.0912)	(0.0609)
Education	0.396***	0.454***	0.390***	0.389***	0.536***
	(0.0604)	(0.0442)	(0.0828)	(0.0628)	(0.0508)
Gender	-0.482***	-0.340***	-0.121	-0.157*	-0.350***
	(0.0800)	(0.0568)	(0.101)	(0.0851)	(0.0576)
Left-right orientation	-0.121***	-0.0949***	-0.00248	-0.0997***	-0.0139
	(0.0190)	(0.0150)	(0.0273)	(0.0203)	(0.0120)
Constant	0.0803	-0.397***	-0.841***	-1.482***	-2.350***
	(0.214)	(0.143)	(0.276)	(0.192)	(0.149)
Observations	2,788	5,293	1,734	3,575	8,381

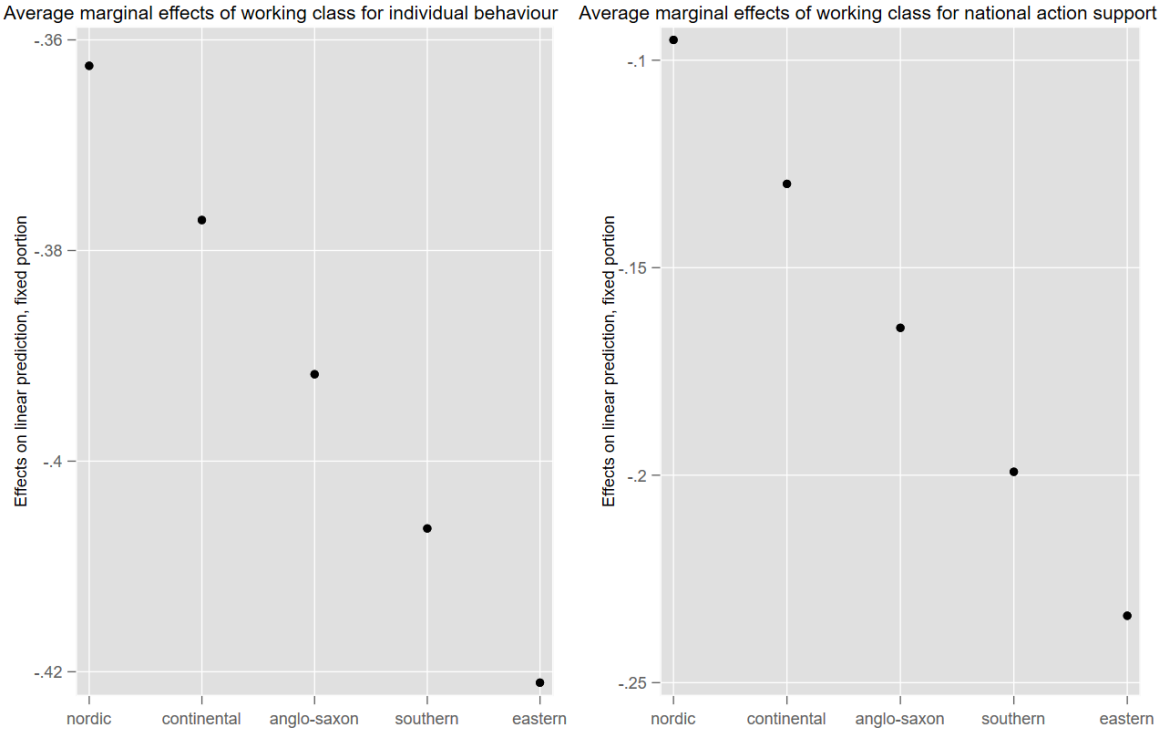
Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1. The ordering of the coefficients in terms of magnitude is similar when computing odds ratios.

A.2.5 Logit regression for national action support by welfare regime subsamples

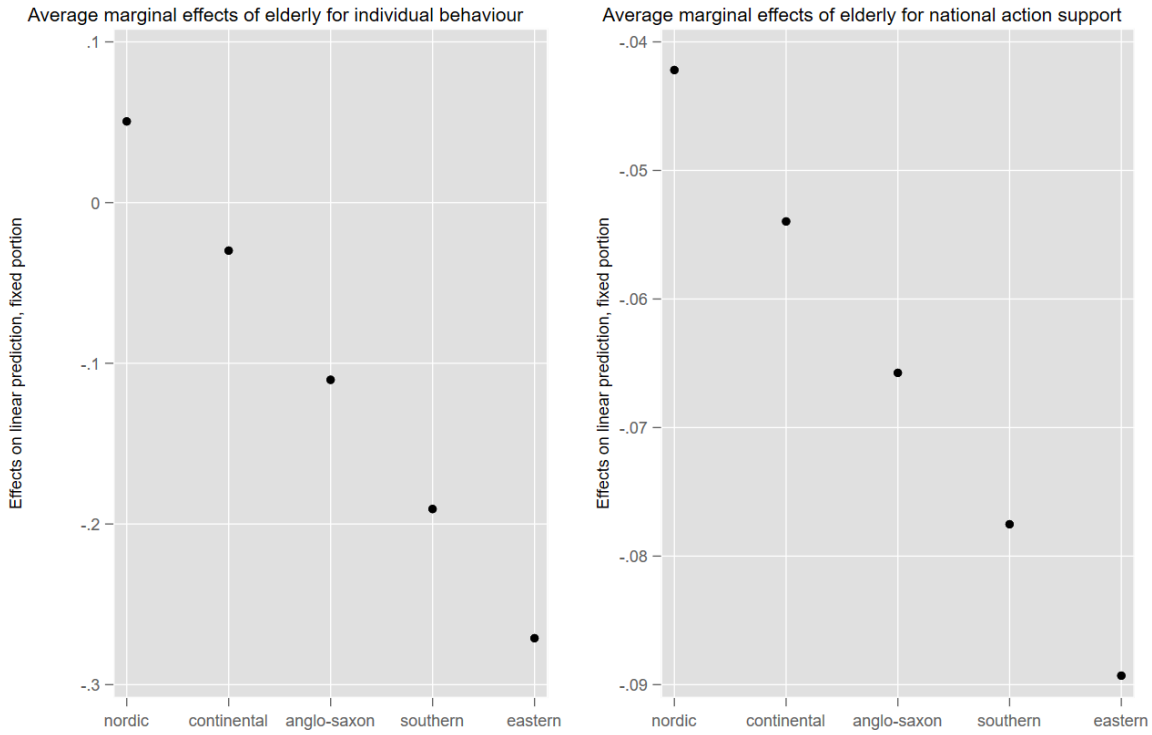
Model	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***
Sample	***Nordic welfare regimes***	***Continental welfare regimes***	***Anglo-saxon welfare regimes***	***Southern welfare regimes***	***Eastern welfare regimes***
Elderly	-0.123	0.118*	-0.0367	0.0498	-0.0657
	(0.0863)	(0.0655)	(0.135)	(0.0906)	(0.0528)
Working class	-0.565***	-0.153*	-0.0708	-0.242***	-0.0452
	(0.120)	(0.0861)	(0.118)	(0.0804)	(0.0526)
Large town	0.314***	0.155**	-0.316***	0.540***	-0.0128
	(0.0994)	(0.0695)	(0.116)	(0.0814)	(0.0495)
Education	0.0702	0.282***	0.456***	0.243***	0.267***
	(0.0617)	(0.0444)	(0.0902)	(0.0526)	(0.0396)
Gender	-0.228***	-0.240***	0.00719	-0.0233	0.0173
	(0.0853)	(0.0583)	(0.112)	(0.0722)	(0.0453)
Left-right orientation	-0.231***	-0.134***	-0.0590*	-0.00175	0.000247
	(0.0208)	(0.0155)	(0.0301)	(0.0168)	(0.00946)
Constant	2.024***	0.566***	0.507*	0.0526	-0.451***
	(0.228)	(0.145)	(0.300)	(0.160)	(0.115)
Observations	2,748	5,217	1,712	3,513	8,117

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

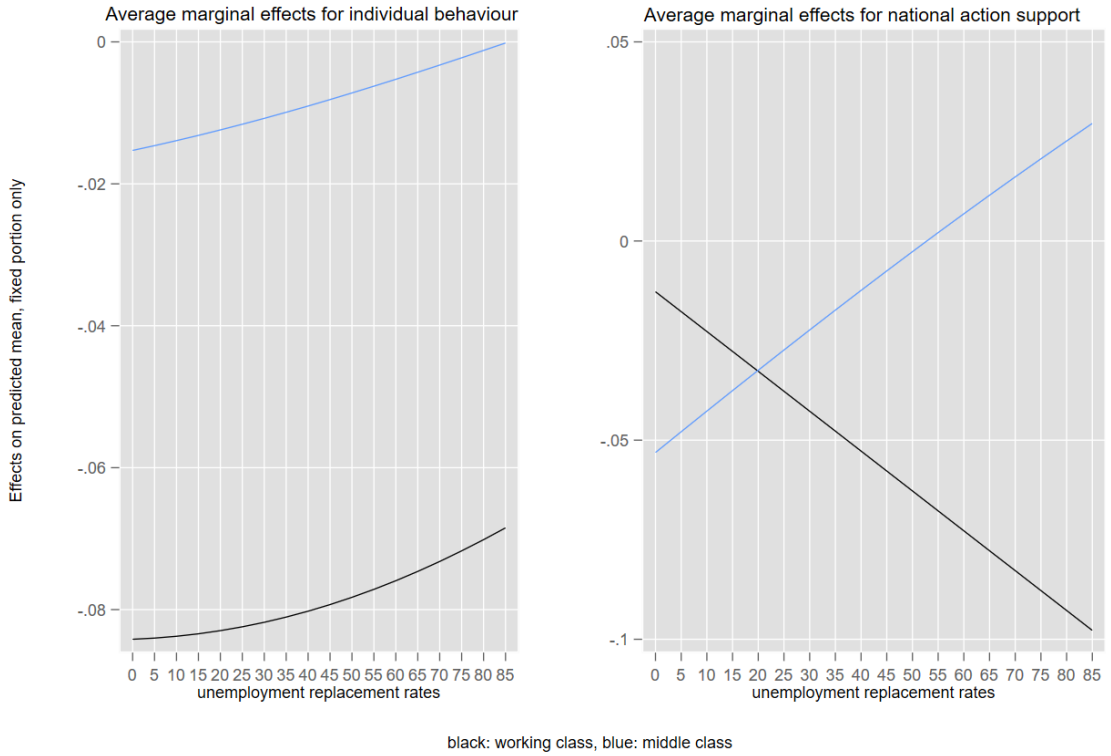
A.2.6 Marginal effect for working class in different welfare state regimes for individual environmental behaviour and national action support



A.2.7 Marginal effects for the elderly in different welfare state regimes for individual environmental behaviour and national action support



A.2.8 Average marginal effects for occupational classes by unemployment replacement rates



A.2.9 Multilevel mixed logit regression with different country-level indicators for individual environmental action

Model	***(1)***	***(2)***	***(3)***	***(4)***
Elderly	-0.0982**	-0.0976**	-0.0978**	-0.0982**
	(0.0390)	(0.0390)	(0.0390)	(0.0390)
Working class	-0.395***	-0.395***	-0.395***	-0.394***
	(0.0444)	(0.0444)	(0.0444)	(0.0444)
Large town	0.0707*	0.0705*	0.0705*	0.0713*
	(0.0381)	(0.0381)	(0.0381)	(0.0381)
Education	0.417***	0.416***	0.416***	0.417***
	(0.0275)	(0.0275)	(0.0275)	(0.0275)
Gender (male=1)	-0.325***	-0.325***	-0.325***	-0.324***
	(0.0341)	(0.0341)	(0.0341)	(0.0341)
Left-right orientation	-0.0620***	-0.0619***	-0.0619***	-0.0621***
	(0.00825)	(0.00825)	(0.00825)	(0.00825)
Social expenditures	0.0912***	0.0123	0.0362	0.0995***
	(0.0317)	(0.0334)	(0.0300)	(0.0288)
Log. GDP per capita		1.165***		
		(0.324)		
GDP per capita			3.77e-05***	
			(1.09e-05)	
Unemployment rate				-0.0719**
				(0.0322)
Random intercept for country	-0.364**	-0.600***	-0.587***	-0.469***
	(0.153)	(0.155)	(0.155)	(0.154)
Constant	-3.125***	-13.20***	-2.973***	-2.750***
	(0.710)	(2.859)	(0.575)	(0.664)
Observations	18,456	18,456	18,456	18,456
Number of countries	22	22	22	22

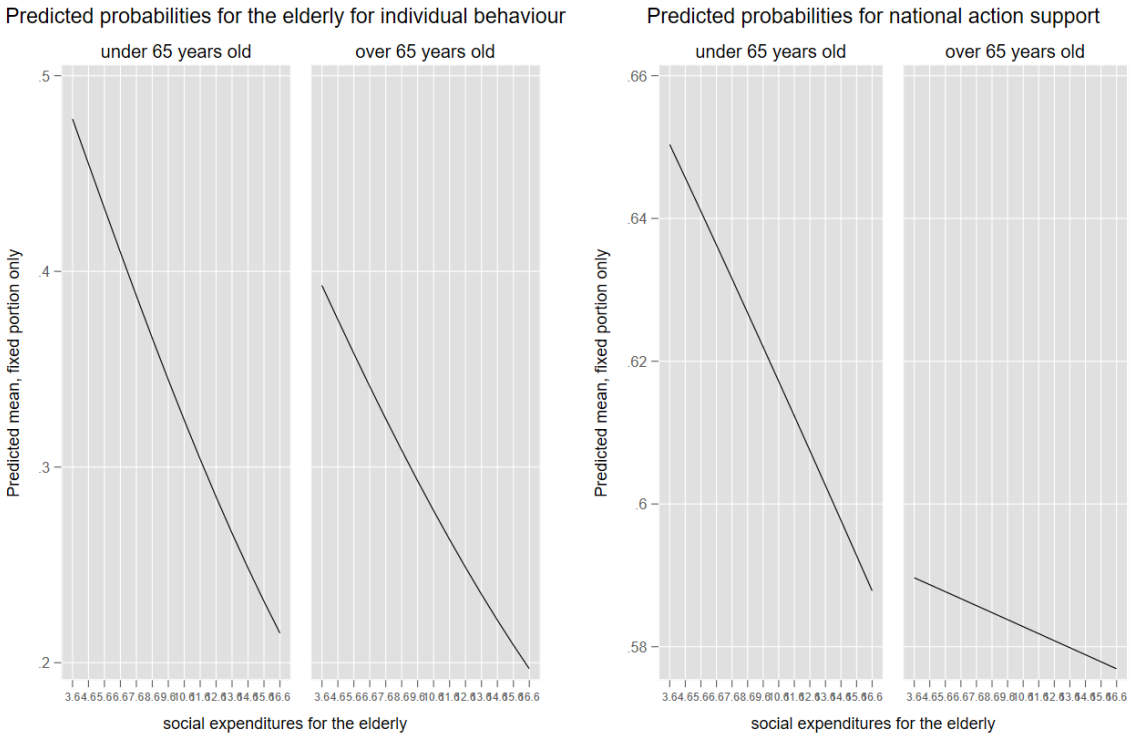
Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.10 Multilevel mixed logit regression with different country-level indicators for support for national action

Model	***(1)***	***(2)***	***(3)***	***(4)***
Elderly	-0.0669*	-0.0680*	-0.0681*	-0.0665*
	(0.0361)	(0.0361)	(0.0361)	(0.0361)
Working class	-0.184***	-0.183***	-0.183***	-0.184***
	(0.0396)	(0.0396)	(0.0396)	(0.0396)
Large town	0.0889**	0.0896**	0.0897**	0.0886**
	(0.0362)	(0.0362)	(0.0362)	(0.0362)
Education	0.242***	0.241***	0.241***	0.243***
	(0.0252)	(0.0252)	(0.0252)	(0.0252)
Gender (male=1)	-0.0965***	-0.0969***	-0.0969***	-0.0966***
	(0.0317)	(0.0317)	(0.0317)	(0.0317)
Left-right orientation	-0.0725***	-0.0723***	-0.0723***	-0.0725***
	(0.00754)	(0.00754)	(0.00754)	(0.00754)
Social expenditures	0.0346*	-0.00121	0.00754	0.0324*
	(0.0199)	(0.0237)	(0.0207)	(0.0197)
Log. GDP per capita		0.529**		
		(0.230)		
GDP per capita			1.85e-05**	
			(7.50e-06)	
Unemployment rate				0.0193
				(0.0219)
Random intercept for country	-0.840***	-0.951***	-0.966***	-0.858***
	(0.156)	(0.157)	(0.157)	(0.156)
Constant	-0.395	-4.963**	-0.317	-0.496
	(0.449)	(2.028)	(0.401)	(0.456)
Observations	18,101	18,101	18,101	18,101
Number of countries	22	22	22	22

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.11 Predicted probabilities for the elderly by social expenditures for the elderly for both outcome variables



A.2.12 Generalized structural equation model for problem to pay bills and both environmental outcome variables with country-clustered standard errors

Model	***(1)***	***(2)***	***(3)***	***(4)***
Dependent variable	***Individual behaviour***		***National action support***	
	IV: Problem to pay bills	DV: individual behaviour	IV Problem to pay bills	DV: national action support
Working class	0.929***		0.929***	
	(0.134)		(0.134)	
Elderly	-0.730***		-0.730***	
	(0.115)		(0.115)	
Problem to pay bills		-0.769***		-0.259**
		(0.135)		(0.118)
Large town		0.0130		0.147**
		(0.0947)		(0.0711)
Education		0.591***		0.262***
		(0.0590)		(0.0468)
Left-right orientation		-0.0877***		-0.0815***
		(0.0187)		(0.0242)
Gender		-0.239***		-0.0677
		(0.0473)		(0.0513)
Constant	-0.913***	-1.195***	-0.913***	0.333
	(0.192)	(0.298)	(0.192)	(0.206)
Observations	22,369	22,369	22,332	22,332

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.13 Generalized structural equation model for ideology and both environmental outcome variables with country-clustered standard errors

Model	***(1)***	***(2)***	***(3)***	***(4)***
Dependent variable	***Individual behaviour***		***National action support***	
	IV: left-right orientation	DV: Individual behaviour	IV: left-right orientation	DV: national action support
Working class	-0.00189		-0.00189	
	(0.110)		(0.110)	
Elderly	-0.0164		-0.0164	
	(0.0744)		(0.0744)	
Left-right orientation		-0.427***		-0.261***
		(0.0848)		(0.0894)
Constant	-0.109	-0.487***	-0.109	0.546***
	(0.102)	(0.181)	(0.102)	(0.117)
Observations	23,032	23,032	22,906	22,906

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

A.2.14 Check for multicollinearity of CEEC and social expenditures

	Social expenditures and CEEC
Correlation (Pearson)	-0.76***
VIF	2.41
Tolerance	0.41
Condition Number	17.14

A.2.15 Average values for welfare state regimes

Welfare regime	***Mean value of individual behaviour (sensitive) and standard deviation***	***Mean value of support for national action and standard deviation***
Nordic (Denmark, Sweden, Finland)	0.606 (0.48)	0.698 (0.45)
Continental (Austria, Belgium, Germany, France, Netherlands, Luxembourg)	0.469 (0.49)	0.609 (0.48)
Continental without Luxembourg	0.469 (0.49)	0.609 (0.48)
Anglo-Saxon (UK, Ireland)	0.461 (0.49)	0.777 (0.41)
Southern (Portugal, Spain, Italy, Cyprus, Greece, Malta)	0.175 (0.38)	0.637 (0.48)
Southern without Cyprus and Malta	0.174 (0.37)	0.635 (0.48)
Eastern (Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovenia, Bulgaria, Croatia, Latvia, Romania, Slovak Republic)	0.129 (0.33)	0.521 (0.49)
Eastern without Bulgaria, Croatia and Romania	0.146 (0.35)	0.496 (0.50)

Notes: Sample weights (adjustments of each national sample in proportion to its share in the total population of the European Union (European Community), aged 15 and over).

A.2.16 Ordinal logit multilevel models for both outcome variables

Model	***(1)***	***(2)***	***(3)***	***(4)***
Dependent variable	***Individual behaviour***		***National action support***	
Elderly	-0.104***	-0.104***	-0.0457	-0.0458
	(0.0301)	(0.0301)	(0.0319)	(0.0319)
Working class	-0.361***	-0.360***	-0.151***	-0.150***
	(0.0332)	(0.0332)	(0.0352)	(0.0352)
Large town	0.0419	0.0423	0.0591*	0.0597*
	(0.0298)	(0.0298)	(0.0318)	(0.0318)
Education	0.411***	0.412***	0.223***	0.223***
	(0.0214)	(0.0214)	(0.0224)	(0.0224)
Gender (male=1)	-0.266***	-0.266***	-0.132***	-0.133***
	(0.0263)	(0.0263)	(0.0279)	(0.0279)
Left-right orientation	-0.0535***	-0.0534***	-0.0829***	-0.0827***
	(0.00626)	(0.00626)	(0.00673)	(0.00673)
Social expenditures		0.0805***		0.0297
		(0.0272)		(0.0201)
Cut point 1	-2.357***	-0.606	-5.038***	-4.392***
	(0.167)	(0.608)	(0.149)	(0.460)
Cut point 2	-0.952***	0.799	-4.366***	-3.720***
	(0.165)	(0.607)	(0.136)	(0.456)
Cut point 3	0.110	1.861***	-3.186***	-2.540***
	(0.165)	(0.608)	(0.126)	(0.453)
Cut point 4	1.117***	2.868***	-2.359***	-1.713***
	(0.166)	(0.608)	(0.123)	(0.452)
Cut point 5	2.097***	3.848***	-0.475***	0.171
	(0.166)	(0.608)	(0.121)	(0.452)
Cut point 6	3.033***	4.784***	0.337***	0.983**
	(0.167)	(0.608)	(0.121)	(0.452)
Cut point 7	4.124***	5.875***		
	(0.170)	(0.609)		
Cut point 8	5.645***	7.396***		
	(0.183)	(0.613)		
Random intercept variance	0.500***	0.356***	0.211***	0.192***
	(0.152)	(0.109)	(0.0651)	(0.0592)
Observations	18,456	18,456	18,101	18,101
Number of countries	22	22	22	22

Notes: Standard errors in parentheses, log odds, *** p<0.01, ** p<0.05, * p<0.1.

A.2.17 Linear multilevel models for both outcome variables

Model	***(1)***	***(2)***	***(3)***	(4)
Dependent variable	***Individual behaviour***		***Support for national action***	
Elderly	-0.0761***	-0.0755***	-0.0115	-0.0115
	(0.0271)	(0.0271)	(0.0100)	(0.0100)
Working class	-0.341***	-0.340***	-0.0520***	-0.0517***
	(0.0299)	(0.0299)	(0.0110)	(0.0110)
Large town	0.0477*	0.0480*	0.00923	0.00940
	(0.0269)	(0.0269)	(0.00991)	(0.00991)
Education	0.359***	0.360***	0.0681***	0.0681***
	(0.0190)	(0.0190)	(0.00700)	(0.00700)
Gender (male=1)	-0.245***	-0.245***	-0.0519***	-0.0521***
	(0.0238)	(0.0238)	(0.00875)	(0.00875)
Left-right orientation	-0.0524***	-0.0523***	-0.0268***	-0.0268***
	(0.00564)	(0.00564)	(0.00208)	(0.00208)
Social expenditures		0.0765***		0.00805
		(0.0253)		(0.00608)
Random intercept variance	-0.410***	-0.585***	-1.981***	-2.020***
	(0.152)	(0.152)	(0.154)	(0.154)
Within-group error variance	0.471***	0.471***	-0.537***	-0.537***
	(0.00521)	(0.00521)	(0.00526)	(0.00526)
Constant	2.567***	0.903	3.453***	3.278***
	(0.154)	(0.567)	(0.0369)	(0.137)
Observations	18,456	18,456	18,101	18,101
Number of countries	22	22	22	22

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Appendix B *to On the moderation effect of work-family policies on pro-environmental behaviour of single mothers*

B.1 Description of variables

	Variable	Description	Source
Individual level	Environmental behaviour index	Summative index from 1-4, containing the five items "avoid buying certain products for environmental reasons", "saving or reusing water", "reducing energy or fuel at home for environmental reasons", "cutting back on driving a car for environmental reasons" and "buying fruit and vegetables without pesticides or chemicals" measured on a 4-point Likert scale (never, sometimes, often, always)	International Social Survey Programme (ISSP) 2010 and 2020
	Single mother	Binary 0-1, living in a steady partnership, female and having children in household represent partnered mothers (=0) while single mothers (=1) are women with children but without a steady partnership	ISSP 2010 and 2020
	Number of children living in household	0-10, "How many children in household?"	ISSP 2010 and 2020
	Personal income	Country specific personal income, transformed into US dollar purchasing power parity	ISSP 2010 and 2020
	Education level (four levels)	1-4, highest obtained education level transformed into four comparable categories	ISSP 2010 and 2020
	Birth year	Year of birth	ISSP 2010 and 2020
	Environmental concern	1-5, "Generally speaking, how concerned are you about environmental issues?", Please tick one box below to indicate what you think, where 1 means you are not at all concerned and 5 means you are very concerned	ISSP 2010 and 2020
National level	Childcare expenditures as % of GDP	Total public expenditure on early childhood education and care, in percent of GDP, 2009 and 2017/19	OECD Social Expenditure Database
	% of children between 0-2 years enrolled in publicly supported childcare services	2010, 2019/20	OECD Family Database
	% of children between 3-5 years enrolled in publicly supported childcare services	2010, 2019/20	OECD Family Database
	Length of paid maternity and parental leave available to mothers	Maternity leave refers to the number of weeks of job-protected leave available for mothers just before and after childbirth. Parental leave with job protection refers to the number of weeks after maternity leave which a woman can take as parental leave with her job protected, disregarding payment conditions, 2010 and 2019/20	OECD Family Database
	Employment rate of single mothers	Employment rates (%) for single mothers (15-64 year olds) with at least one child (aged 0-14), 2010 and 2019	OECD Maternal employment by partnership status

	% of single parents working between 30 to 44 hours weekly	Distribution (%) of usual weekly working hours by working hours bands (30 to 39 and 40 to 44) for employed single parents with at least one child aged 0-14, 2010 and 2019	OECD Family Database
	% of children living with a single-parent	'Living with a single parent' refers to situations where a child lives in a household with only one adult that is considered a parent, 2010 and 2019/2020	OECD Family Database
	Tax difference (133% of average income)	Differences in net household transfers to government between single-earner and equal dual-earner couples, for couples with household earnings equal to 133% of average earnings	OECD Tax-Benefit Models

B.2 Baseline model of the mixed effects linear regression

	(1) PEB index	(2) Organic food
Single mother	-0.0367	-0.0471
	(0.0388)	(0.060)
Education	0.0186	0.0087
	(0.0171)	0.0213
Birth year	-0.00323*	-0.0019
	(0.00145)	(0.0012)
Personal income	5.09e-08*	-1.91e-07*
	(2.31e-08)	(9.99e-08)
Number of children	0.0267	0.0143
	(0.0164)	(0.0157)
Environmental concern	0.158***	0.1527***
	(0.0223)	(0. 0257)
Year	0.0962***	0.1844***
	(0.00716)	(0.0071)
constant	-185.5***	-365.465***
	(14.97)	(14.475)
Sd (country year)	0.179***	0.263**
	(0.0298)	(0.0489)
Sd (constant)	0.572***	0.8575**
	(0.0199)	(0.0428)
N	2087	2575
Countries	28	28
Prob > chi2	0.000	0.000

Notes: mixed effects linear models, robust standard errors in parentheses, *=10% significance level, **=5% significance level, ***=1% significance level

B.3 Mixed effects linear models for pro-environmental behaviour (PEB index)

	(1)	(2)	(3)	(4)	(5)	(6)
Single mother	-0.0369	-0.0255	-0.0235	-0.0334	-0.0353	-0.0490
	(0.0388)	(0.0473)	(0.0436)	(0.0445)	(0.0401)	(0.0505)
Education level	0.0196	0.0240	0.0256	0.0145	0.0220	0.0355
	(0.0170)	(0.0207)	(0.0182)	(0.0192)	(0.0200)	(0.0239)
Birth year	-0.0032**	-0.0034**	-0.0028*	-0.0028*	-0.0044***	-0.0035**
	(0.0015)	(0.0017)	(0.0015)	(0.0016)	(0.0016)	(0.0017)
Personal income (PPP in $)	0.0000**	0.0000	0.0000	0.0000*	-0.0000**	-0.0000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Number of children	0.0264	0.0175	0.0285*	0.0278	0.00594	-0.00755
	(0.0163)	(0.0159)	(0.0167)	(0.0170)	(0.0208)	(0.0216)
Environmental concern	0.157***	0.159***	0.163***	0.157***	0.159***	0.182***
	(0.0224)	(0.0258)	(0.0244)	(0.0247)	(0.0266)	(0.0269)
Year	0.0968***	0.0947***	0.0953***	0.0935***	0.103***	0.0927***
	(0.00724)	(0.00749)	(0.00736)	(0.00722)	(0.00882)	(0.00873)
Childcare expenditures (% of GDP)	-0.101					
	(0.119)					
% of 0-2 year olds in childcare		-0.0953				
		(0.241)				
% of 3-5 year olds in childcare			0.242			
			(0.276)			
Length of paid parental leave (in weeks)				2.84e-05		
				(0.000616)		
Employment rate single mothers					-0.658***	
					(0.253)	
% of full-time working single mums						-0.649*
						(0.353)
Ln sd (country year)	-1.729***	-1.866***	-1.885***	-1.783***	-1.766***	-1.988***
	(0.165)	(0.196)	(0.184)	(0.164)	(0.193)	(0.164)

Ln sd (constant)	-0.559***	-0.565***	-0.550***	-0.560***	-0.570***	-0.578***
	(0.0348)	(0.0365)	(0.0369)	(0.0385)	(0.0368)	(0.0391)
Constant	-186.7***	-182.3***	-184.9***	-180.9***	-196.3***	-177.5***
	(15.07)	(15.83)	(15.90)	(15.20)	(17.96)	(18.15)
Observations	2,087	1,733	1,818	1,876	1,766	1,384
Number of countries	28	23	24	24	24	18

Notes: mixed effects linear models, robuststandard errors in parentheses, *=10% significance level, **=5% significance level, ***=1% significance level

B.4 Mixed effect linear models for PEB with different country-level variables

	(1)	(2)
Education level	0.0166	0.0220
	(0.0144)	(0.0146)
Birth year	-0.00311**	-0.00330**
	(0.00130)	(0.00132)
Personal income	4.70e-08	5.02e-08
	(1.72e-07)	(1.70e-07)
Number of children	0.0233	0.0207
	(0.0171)	(0.0144)
Environmental concern	0.161***	0.166***
	(0.0131)	(0.0131)
Single mother	0.0552	-0.0712
	(0.117)	(0.0474)
Tax difference (133% of average income)		0.00360*
		(0.00217)
Single mother#tax_difference_		-0.00253
		(0.00190)
% of children with single parent	-0.00914	
	(0.00636)	
Single mother#% of children with single parent	-0.00484	
	(0.00616)	
Year	0.0904***	0.0947***
	(0.00933)	(0.00956)
Ln sd (country year)	-1.867***	-1.779***
	(0.169)	(0.166)
Ln sd (constant)	-0.563***	-0.578***
	(0.0161)	(0.0160)
Constant	-173.9***	-182.3***
	(18.67)	(19.10)
Observations	1,954	1,969
Number of countries	26	26

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

B.5 Interactions in the mixed effects linear models for pro-environmental behaviour (PEB index)

	(1)	(2)	(3)	(4)	(5)	(6)
Education	0.0203	0.0255	0.0266	0.0145	0.0234	0.0348
	(0.0168)	(0.0209)	(0.0178)	(0.0192)	(0.0200)	(0.0239)
Birth year	-0.00341**	-0.00353**	-0.00309**	-0.00279*	-0.00438***	-0.00378**
	(0.00140)	(0.00169)	(0.00152)	(0.00152)	(0.00162)	(0.00176)
Personal income	6.52e-08**	6.35e-08*	4.60e-08	4.53e-08*	-6.28e-07***	-9.94e-07***
	(2.77e-08)	(3.36e-08)	(2.85e-08)	(2.33e-08)	(2.41e-07)	(3.17e-07)
Number of children	0.0266	0.0177	0.0292*	0.0278*	0.00605	-0.00686
	(0.0164)	(0.0157)	(0.0167)	(0.0169)	(0.0209)	(0.0213)
Environmental concern	0.157***	0.159***	0.162***	0.157***	0.159***	0.182***
	(0.0225)	(0.0257)	(0.0247)	(0.0246)	(0.0264)	(0.0268)
Single mother	-0.184**	-0.188***	-0.428*	-0.0255	-0.324	0.460**
	(0.0806)	(0.0567)	(0.233)	(0.0606)	(0.203)	(0.198)
Childcare expenditures	-0.136					
	(0.120)					
Single mother#childcare expenditures	0.229*					
	(0.121)					
Year	0.0968***	0.0946***	0.0949***	0.0935***	0.103***	0.0921***
	(0.00731)	(0.00748)	(0.00728)	(0.00722)	(0.00882)	(0.00863)
% of 0-2 years old in childcare		-0.219				
		(0.252)				
Single mother#% of 0-2 years old in childcare		0.577***				
		(0.167)				
5 of 3-5 years old in childcare			0.160			
			(0.262)			
Single mother#% of 3-5 years old in childcare			0.509*			
			(0.272)			

Length of paid parental leave (in weeks)				5.59e-05		
				(0.000543)		
Single mother#paid parental leave				-0.000150		
				(0.000771)		
Employment rate single mothers					-0.737***	
					(0.248)	
Single mother#employment rate					0.445	
					(0.321)	
% of full-time working single mums						-0.520
						(0.352)
Single mother#% of full-time working						-0.706***
						(0.267)
Ln sd (country year)	-1.725***	-1.864***	-1.877***	-1.783***	-1.766***	-1.972***
	(0.165)	(0.195)	(0.186)	(0.165)	(0.193)	(0.169)
Ln sd (constant)	-0.560***	-0.567***	-0.551***	-0.560***	-0.570***	-0.580***
	(0.0348)	(0.0368)	(0.0370)	(0.0385)	(0.0369)	(0.0397)
Constant	-186.4***	-181.7***	-183.5***	-180.9***	-196.5***	-176.0***
	(15.21)	(15.85)	(15.75)	(15.20)	(17.96)	(18.10)
Observations	2,087	1,733	1,818	1,876	1,766	1,384
Number of countries	28	23	24	24	24	18

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

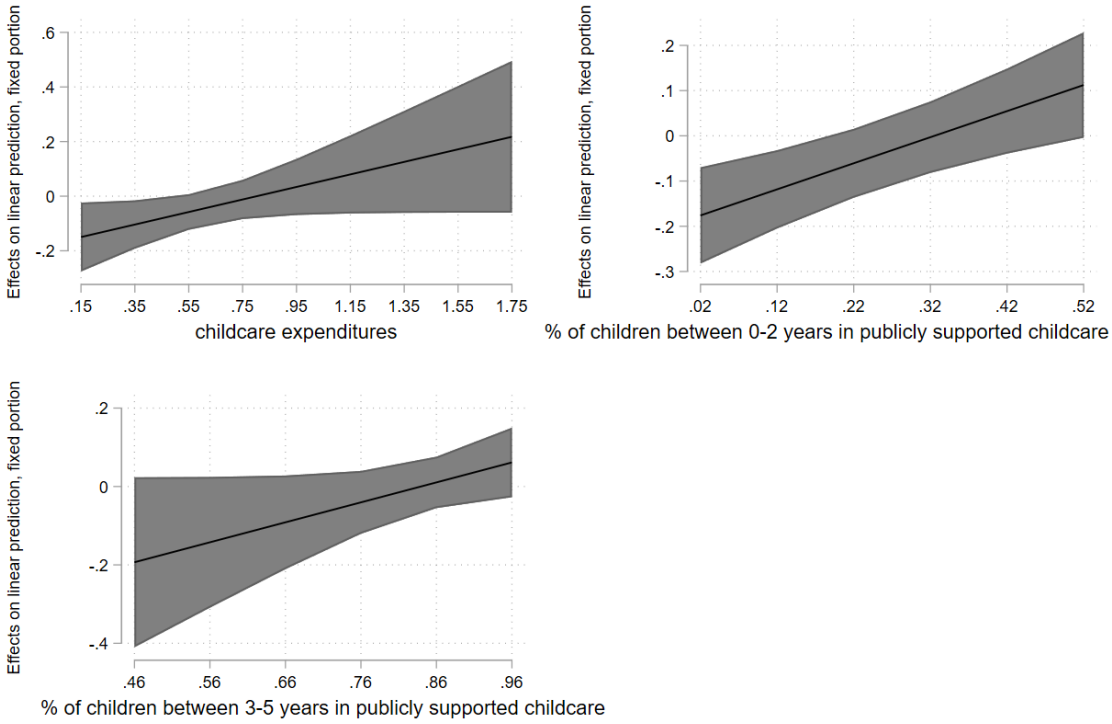
B.6 Interactions in the mixed effects linear models for buying organic food

	(1)	(2)	(3)	(4)	(5)	(6)
Education level	0.0114	0.0256	0.0189	-0.00315	0.00548	0.0180
	(0.0214)	(0.0296)	(0.0240)	(0.0230)	(0.0288)	(0.0364)
Birth year	-0.00212*	-0.00254	-0.00192	-0.00119	-0.00198	-0.00191
	(0.00123)	(0.00154)	(0.00129)	(0.00128)	(0.00166)	(0.00213)
Personal income	-1.75e-07*	-1.66e-07*	-1.94e-07**	-2.09e-07**	3.49e-06***	3.78e-06***
	(9.79e-08)	(9.46e-08)	(9.49e-08)	(1.05e-07)	(9.94e-07)	(5.44e-07)
Number of children	0.0142	0.0301	0.0221	0.0148	0.0236	0.0278
	(0.0156)	(0.0186)	(0.0170)	(0.0142)	(0.0240)	(0.0299)
Environmental concern	0.152***	0.150***	0.165***	0.152***	0.148***	0.179***
	(0.0258)	(0.0314)	(0.0277)	(0.0269)	(0.0313)	(0.0348)
Single mother	-0.162	-0.294***	-0.567	0.0345	0.0427	0.569
	(0.132)	(0.0876)	(0.389)	(0.101)	(0.351)	(0.425)
Childcare expenditures	-0.237**					
	(0.111)					
Single mother#childcare expenditures	0.187					
	(0.150)					
Year	0.186***	0.184***	0.179***	0.188***	0.183***	0.179***
	(0.00725)	(0.00720)	(0.00688)	(0.00587)	(0.0124)	(0.0102)
% of 0-2 years old in childcare		-0.730**				
		(0.310)				
Single mother#% of 0-2 years old in childcare		0.920***				
		(0.227)				
5 of 3-5 years old in childcare			-0.245			
			(0.348)			
Single mother#% of 3-5 years old in childcare			0.665			
			(0.459)			
Length of paid parental leave (in				0.000296		

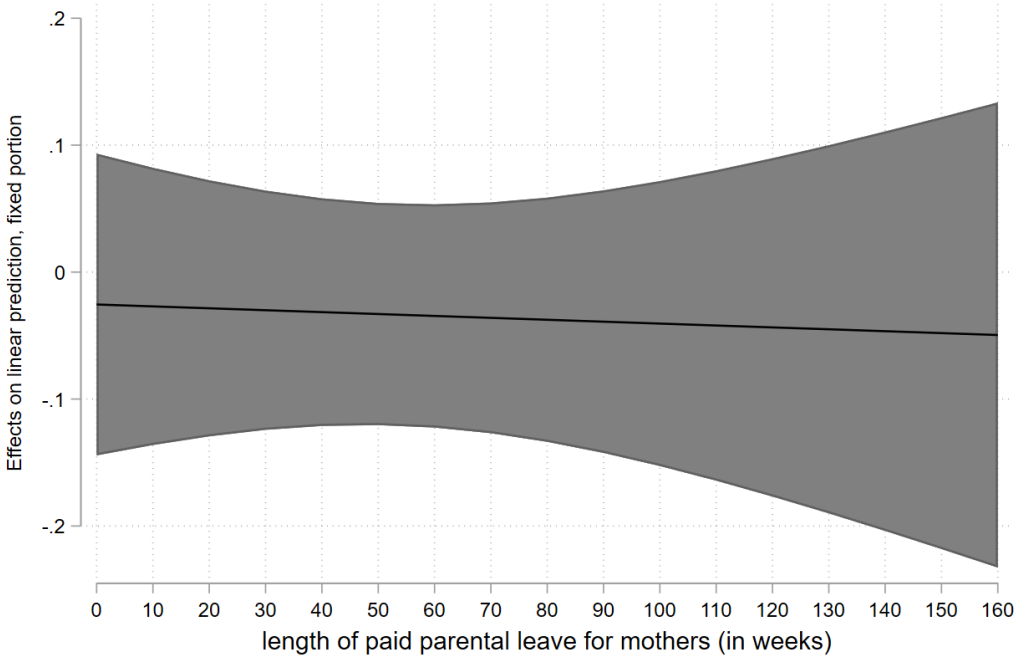
weeks)				(0.000723)		
Single mother#length of paid parental leave				-0.00162* (0.000985)		
Employment rate of single mothers					-0.214 (0.500)	
Single mother#employment rate of single mothers					-0.116 (0.521)	
% of full-time working single mums						0.493 (0.680)
Single mother#% of full-time working						-0.843 (0.585)
Ln sd (country year)	-1.365***	-1.409***	-1.410***	-1.637***	-1.279***	-1.289***
	(0.194)	(0.201)	(0.210)	(0.253)	(0.191)	(0.213)
Ln sd (constant)	-0.154***	-0.163***	-0.136**	-0.164***	-0.161***	-0.132***
	(0.0499)	(0.0579)	(0.0530)	(0.0566)	(0.0536)	(0.0512)
Constant	-367.7***	-363.4***	-355.1***	-373.2***	-362.3***	-354.6***
	(14.71)	(14.69)	(14.09)	(11.78)	(24.80)	(21.50)
Observations	2,575	2,029	2,239	2,281	2,123	1,627
Number of countries	28	23	24	24	24	18

Notes: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

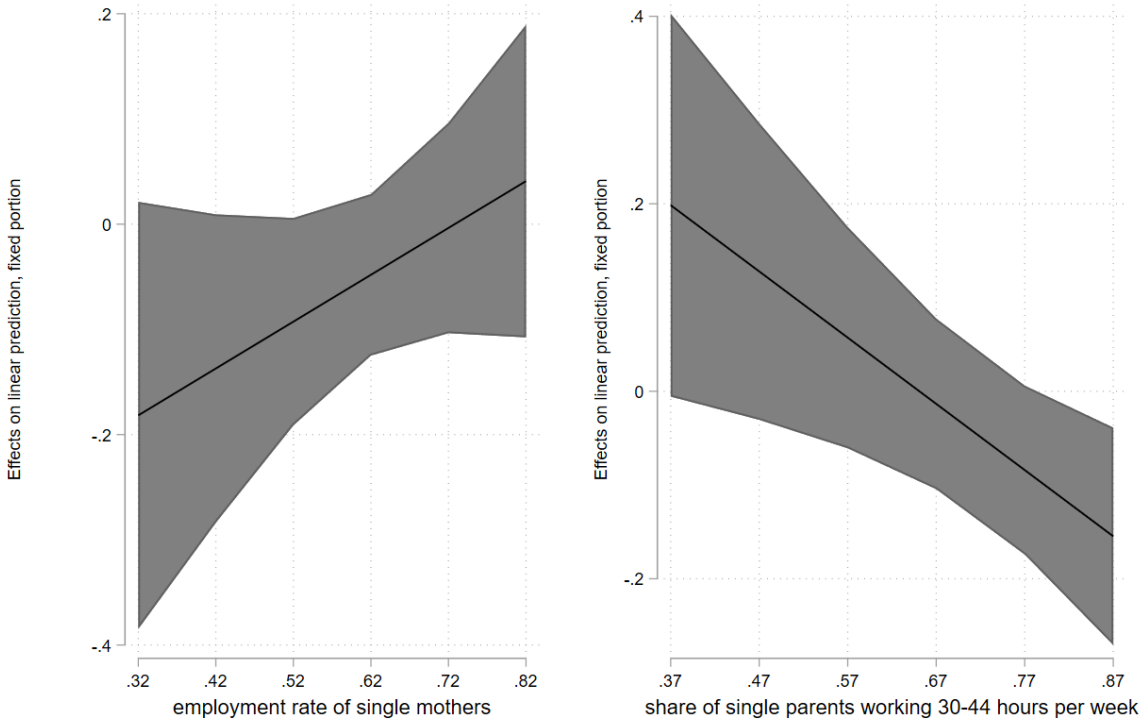
B.7 Average marginal effect plot for pro-environmental behaviour: Early childhood education and care



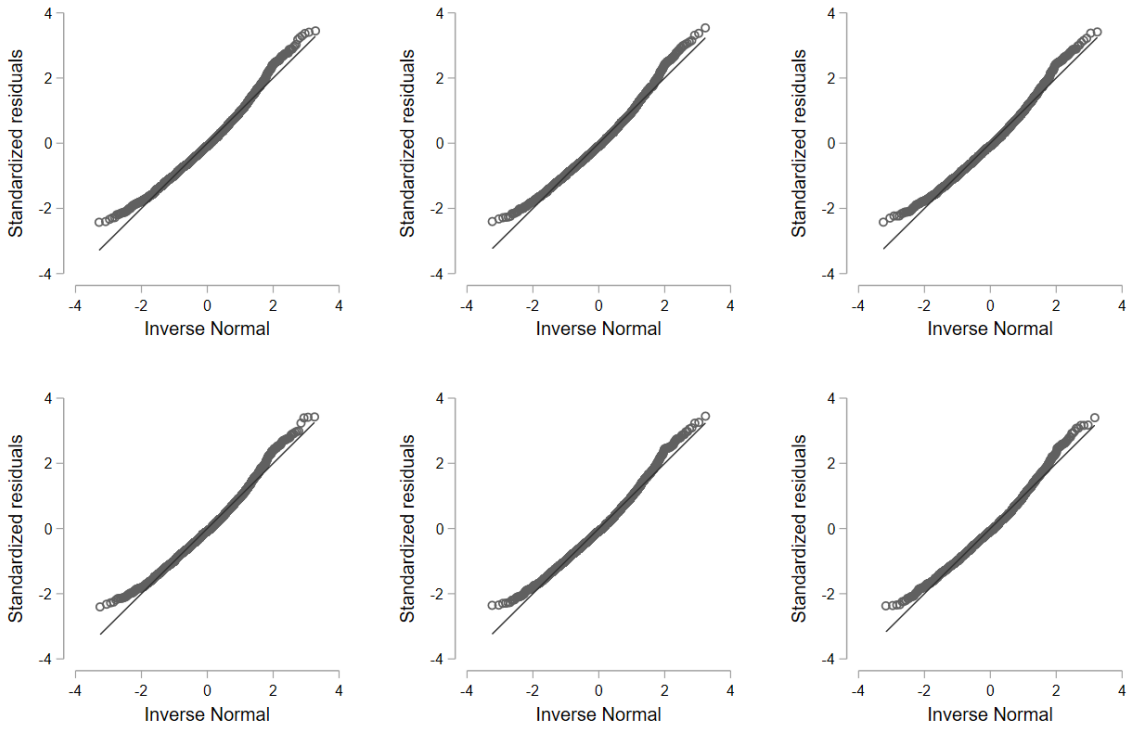
B.8 Average marginal effect plot for pro-environmental behaviour: Birth-related and extended leave policies



B.9 Average marginal effect plot for pro-environmental behaviour: Labour market participation



B.10 Standardized residuals in a normal distribution plot



Appendix C *to Backlash by men against the socio-economic and political promotion of women in Europe*

C.1 Sample

Country	2008	2017
Austria	x	x
Bulgaria	x	x
Croatia	x	x
Czech Republic	x	x
Georgia	x	x
Germany	x	x
Iceland	x	x
Netherlands	x	x
Poland	x	x
Slovak Republic	x	x
Slovenia	x	x
Spain	x	x
Estonia	x	x
France	x	x
Hungary	x	x
Italy	x	x
Lithuania	x	x
Sweden	x	x
Great Britain	x	x
Finland	x	x
Denmark	x	x
Switzerland	x	x
Norway	x	x
Belgium	x	
Cyprus	x	
Greece	x	
Ireland	x	
Latvia	x	
Luxembourg	x	
Montenegro	x	
Portugal	x	
Ukraine	x	

C.2 Variables

Variable	Description	Source
Political orientation	Left-right orientation on a scale from 1–10, binary coding (1–7 = 0; 8–10 = 1)	European Values Study (2017 and 2008)
Far-right voting	Voting behavior on a left-right scale for political parties, binary coding (1–7 = 0; 9–10 = 1)	European Values Study (2017 and 2008)
Age	In years	European Values Study (2017 and 2008)
Education level	Recoding of highest education level attained (basic, middle, high)	European Values Study (2017 and 2008)
Unemployed	"During the last five years, have you experienced a continuous period of unemployment longer than 3 months?", binary coding	European Values Study (2017 and 2008)
"Immigrants take jobs away"	"Immigrants take jobs away from natives in a country", 10-point Likert scale	European Values Study (2017 and 2008)
"If jobs are scarce, men should be preferred"	"When jobs are scarce, men have more right to a job than women", originally 5-point Likert scale, coded binary	European Values Study (2017 and 2008)
Gendered division of work	"A man's job is to earn money; a woman's job is to look after the home and family", originally 4-point Likert scale, coded binary	European Values Study (2017 and 2008)
Size of the far-right party	In %, expert classification	Political Data Yearbook and Populˊist (2015–2018, depending on the year of parliamentary elections)
Women in parliament	Proportion of seats held by women in national parliaments (in %)	World Bank Gender Statistics (2016/17 and 2006)
Childcare expenditure	Public expenditure on day-care/ home-help service provision, as a percentage of GDP (in %)	Comparative Welfare State Dataset/ OECD Family expenditures (2006/7 and 2015/6)
Women on boards	Female share of seats on boards of the largest publicly listed companies (in %)	OECD Statistics on Gender Equality (2010 and 2017)
Gender wage gap	Difference between median earnings (in %)	OECD Statistics on Gender Equality (2006/08 and 2017/2018)
Year	2008 and 2017; binary coding	European Values Study (2017 and 2008)
Region	Western and Eastern Europe; binary coding. Eastern Europe contains CEE countries and Croatia, Georgia, Montenegro, and Ukraine.	

C.3 Descriptive statistics

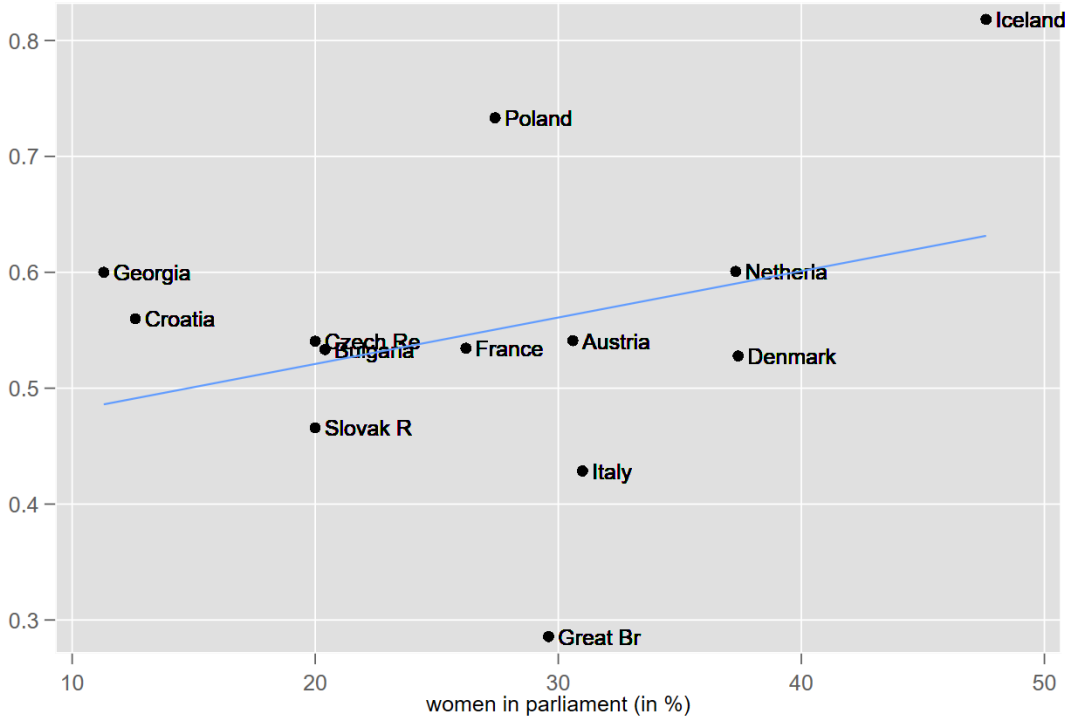
Variable	Observations	Min.	Max.	Mean (Std. Dv.)
Gender gap in far-right orientation (0 = female, 1 = male)	13,363	0	1	0.50 (0.49)
Far right voting by sex (0 = female, 1 = male)	5763	0	1	0.51 (0.49)
Age (in years)	90,917	16	99	39.47 (17.94)
Education level (low, middle, high)	90,405	1	3	2.04 (0.73)
Unemployed	89,059	0	1	0.20 (0.40)
"Immigrants take jobs away"	86,154	1	10	5.40 (2.93)
"If jobs scarce, men should be preferred"	76,974	0	1	0.18 (0.38)
Gendered division of work (women care for home, men earn money)	40,408	0	1	0.25 (0.43)
Size of far-right party	84,624	0	65.7	12.29 (12.24)
Women in parliament	91,341	8.2	47.6	26.91 (10.58)
Childcare expenditure (% of GDP)	76,051	0.09	1.8	0.69 (0.39)
Women on boards	76,279	3.5	43.5	20.63 (11.09)
Gender wage gap	73,298	2.22	30.27	13.43 (5.14)

C.4 Distribution of independent variables by country

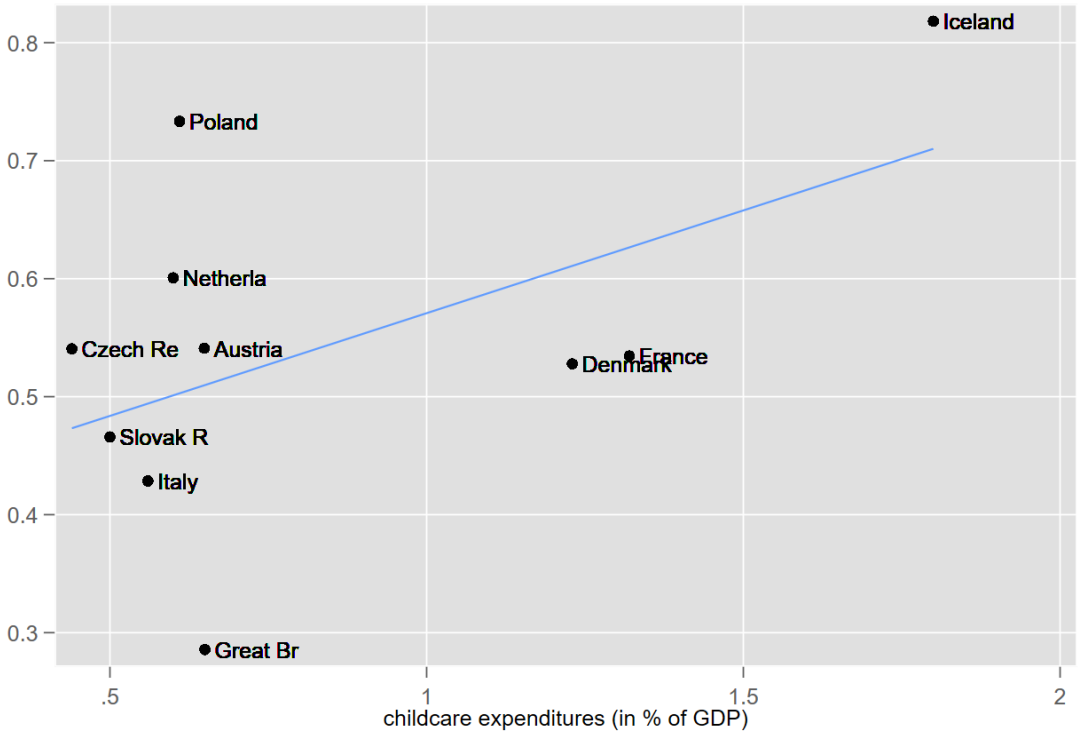
	Women in Parliament	Female Seats in Boards	Childcare Expenditure	Wage Gap
Austria	32.8 (2008) 30.6 (2017)	8.7 (2008) 19.2 (2017)	0.31 (2008) 0.649 (2017)	20.92 (2008) 15.38 (2017)
Bulgaria	21.7 (2008) 20.4 (2017)	- -	- -	- -
Croatia	20.9 (2008) 12.6 (2017)	- -	- -	- -
Czech Republic	15.5 (2008) 20 (2017)	12.2 (2008) 14.5 (2017)	0.3 (2017) 0.44 (2017)	17.87 (2008) 17.6 (2017)
Georgia	9.4 (2008) 11.3 (2017)	- -	- -	- -
Germany	31.6 (2008) 36.5 (2017)	12.6 (2008) 31.9 (2017)	0.37 (2008) 0.6 (2017)	16.74 (2008) 16.19 (2017)
Iceland	33.3 (2008) 47.6 (2017)	15.8 (2008) 43.5 (2017)	1.46 (2008) 1.8 (2017)	21.72 (2008) 12.82 (2017)
Netherlands	39.3 (2008) 37.3 (2017)	14.9 (2008) 29.5 (2017)	0.67 (2008) 0.6 (2017)	16.01 (2008) 13.03 (2017)
Poland	20.4 (2008) 27.4 (2017)	11.6 (2008) 20.1 (2017)	0.28 (2008) 0.61 (2017)	12.99 (2008) 11.5 (2017)
Slovak Republic	19.3 (2008) 20 (2017)	21.6 (2008) 15.1 (2017)	0.37 (2008) 0.5 (2017)	16.44 (2008) 15.04 (2017)
Slovenia	12.2 (2008) 36.7 (2017)	9.8 (2008) 22.6 (2017)	0.47 (2008) 0.49 (2017)	7.13 (2008) -
Spain	36.6 (2008) 39.1 (2017)	9.5 (2008) 22 (2017)	0.45 (2008) 0.5 (2017)	13.53 (2008) -
Estonia	20.8 (2008) 23.8 (2017)	7 (2008) 7.4 (2017)	0.26 (2008) 0.76 (2017)	- 17.32 (2017)
France	18.2 (2008) 26.2 (2017)	12.3 (2008) 43.4 (2017)	1.06 (2008) 1.32 (2017)	9.14 (2008) 11.55 (2017)
Hungary	11.1 (2008) 10.1 (2017)	13.6 (2008) 14.5 (2017)	0.62 (2008) 0.73 (2017)	2.22 (2008) 5.32 (2017)

Italy	17.3 (2008) 31 (2017)	4.5 (2008) 34 (2017)	0.52 (2008) 0.56 (2017)	10.19 (2008) 5.6 (2017)
Lithuania	22.7 (2008) 21.3 (2017)	13.1 (2008) 14.3 (2017)	0.61 (2008) 0.79 (2017)	15.95 (2008) -
Sweden	47 (2008) 43.6 (2017)	26.4 (2008) 36.3 (2017)	1.32 (2008) 1.6 (2017)	10.59 (2008) 7.35 (2017)
Great Britain	19.5 (2008) 29.6 (2017)	13.3 (2008) 27.2 (2017)	0.73 (2008) 0.65 (2017)	21.86 (2008) 16.53 (2017)
Finland	41.5 (2008) 41.5 (2017)	25.9 (2008) 32.8 (2017)	0.87 (2008) 1.13 (2017)	21.23 (2008) 17.72 (2017)
Denmark	38 (2008) 37.4 (2017)	17.7 (2008) 30.3 (2017)	1.24 (2008) 1.23 (2017)	10.18 (2008) 5.3 (2017)
Switzerland	28.5 (2008) 32 (2017)	- 21.3 (2017)	0.287 (2008) 0.454 (2017)	21.3 (2008) 15.1 (2017)
Norway	36.1 (2008) 40 (2017)	38.9 (2008) 42.1 (2017)	0.93 (2008) 1.33 (2017)	9.57 (2008) 6.39 (2017)
Belgium	35.3 (2008)	10.5 (2008)	0.61 (2008)	8.92 (2008)
Cyprus	14.3 (2008)	-	-	30.27 (2008)
Greece	14.7 (2008)	6.2 (2008)	-	17.73 (2008)
Ireland	13.3 (2008)	8.4 (2008)	0.3 (2008)	18.04 (2008)
Latvia	20 (2008)	23.5 (2008)	0.09 (2008)	10.99 (2008)
Luxembourg	23.3 (2008)	3.5 (2008)	0.36 (2008)	8.2 (2008)
Montenegro	11.1 (2008)	-	-	-
Portugal	28.3 (2008)	5.4 (2008)	0.37 (2008)	12.81 (2008)
Ukraine	8.2 (2008)	-	-	-

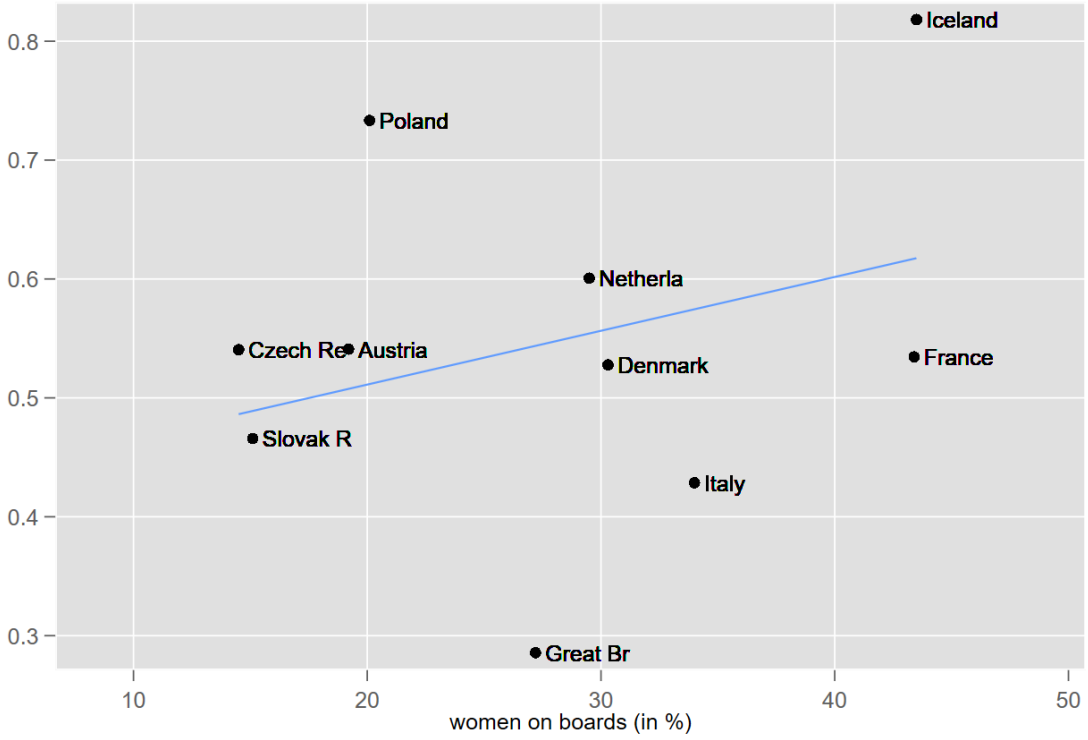
C.5 Scatterplot on the relationship of women in parliament and the gender gap in far-right voting



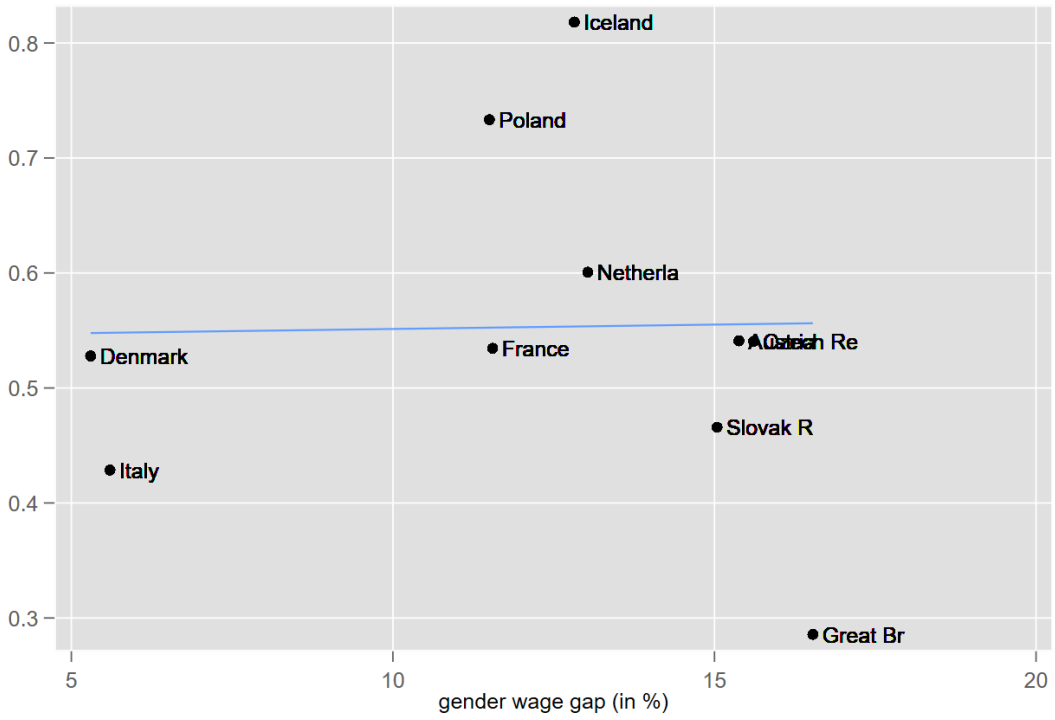
C.6 Scatterplot on the relationship of childcare expenditure and the gender gap in far-right voting



C.7 Scatterplot on the relationship of women on boards and the gender gap in far-right voting



C.8 Scatterplot on the relationship of gender wage gap and the gender gap in far-right voting



C.9 Mixed-effects logit regression to explain the gender gap in far-right orientation with region as control

	(1)	(2)	(3)	(4)	(5)	(6)
Gender Gap in Far-Right Orientation						
Age (in years)	−0.00588 ***	−0.00796 ***	−0.00696 ***	−0.00856 ***	−0.00876 ***	−0.00807 ***
	(0.00107)	(0.00132)	(0.00124)	(0.00144)	(0.00142)	(0.00144)
Education level (three categories)	0.0510 *	0.00606	−0.00665	−0.0192	0.00102	0.0129
	(0.0265)	(0.0323)	(0.0308)	(0.0348)	(0.0343)	(0.0352)
Unemployment experience (yes = 1, no = 0)	−0.153 ***	−0.128 **	−0.145 **	−0.0997	−0.102	−0.103
	(0.0521)	(0.0648)	(0.0589)	(0.0725)	(0.0717)	(0.0735)
"Immigrants take jobs away" (0–10)	0.00505	0.00594	0.0103	0.00203	0.00245	0.00764
	(0.00640)	(0.00788)	(0.00731)	(0.00880)	(0.00862)	(0.00887)
Size of the far-right party		−0.000171				
		(0.00232)				
Region (0 = Eastern Europe, 1 = Western Europe)		0.367 ***	0.224 **	0.328 **	0.345 ***	0.388 ***
		(0.125)	(0.113)	(0.136)	(0.132)	(0.146)
Women in parliament (in %)			0.0117 ***			
			(0.00417)			
Childcare expenditure (in % of GDP)				0.207 *		
				(0.120)		
Women on boards (in %)					0.00527 *	
					(0.00288)	
Gender wage gap (in %)						−0.0128
						(0.00834)
Constant	0.160	0.113	−0.151	0.127	0.106	0.255
	(0.107)	(0.155)	(0.149)	(0.170)	(0.168)	(0.194)
Random intercept for country	−1.198 ***	−1.412 ***	−1.618 ***	−1.553 ***	−1.502 ***	−1.412 ***
	(0.142)	(0.198)	(0.201)	(0.221)	(0.217)	(0.204)
Observations	12,430	8312	9281	6983	7232	7014
Number of countries	32	22	24	18	19	20

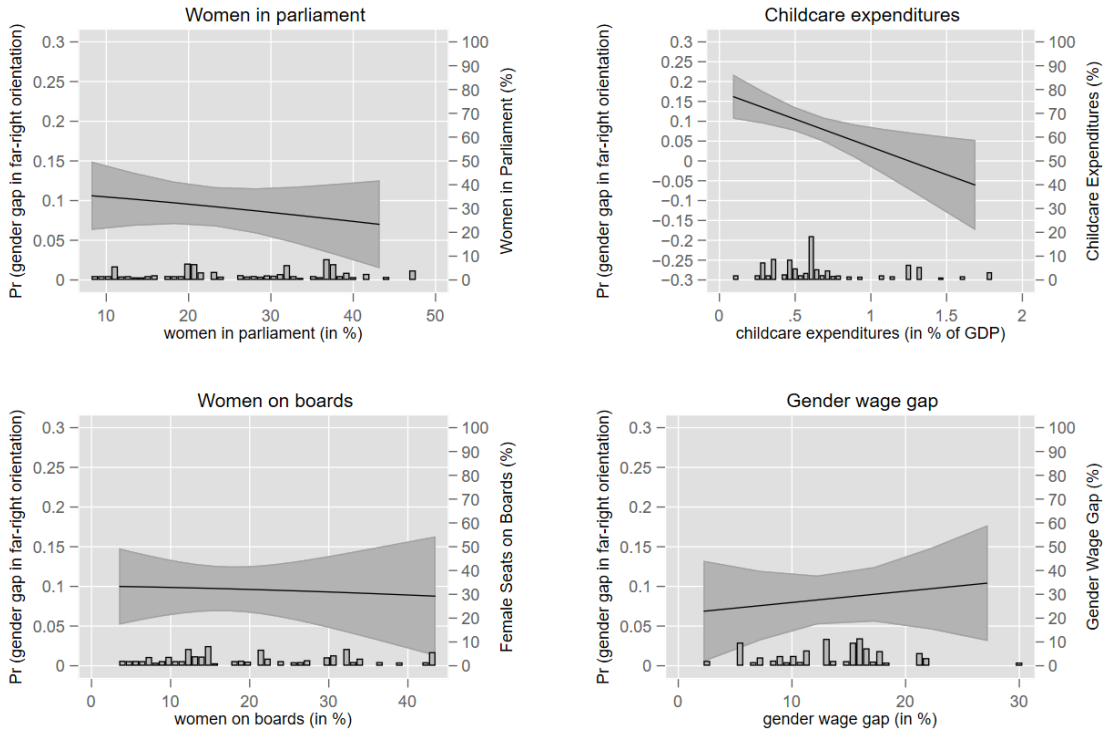
Notes: Source: own calculations based on the European Values Study 2008 and 2017, the OECD Social Expenditure Aggregated Dataset, the Comparative Welfare States Data Set, and World Bank Gender Statistics. Standard errors in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.1.

C.10 Mixed-effects logit regression to explain the gender gap in far-right voting

	(1)	(2)	(3)	(4)	(5)	(6)
Gender Gap in Far-Right Voting						
Age (in years)	−0.00386 **	−0.00406 **	−0.00426 ***	−0.00408 **	−0.00416 **	−0.00395 **
	(0.00163)	(0.00164)	(0.00162)	(0.00166)	(0.00166)	(0.00170)
Education level (three categories)	0.0525	0.0581	0.0442	0.0440	0.0446	0.0543
	(0.0404)	(0.0408)	(0.0399)	(0.0412)	(0.0410)	(0.0420)
Unemployment experience (yes = 1, no = 0)	−0.0866	−0.0668	−0.0627	−0.0556	−0.0519	−0.0693
	(0.0769)	(0.0783)	(0.0767)	(0.0799)	(0.0799)	(0.0809)
“Immigrants take jobs away” (0–10)	0.000335	0.00324	0.00963	0.00341	0.00391	0.000840
	(0.0102)	(0.0103)	(0.0103)	(0.0106)	(0.0104)	(0.0107)
Size of far-right party		−0.00651 *				
		(0.00343)				
Survey year		0.0248 *	0.0117	0.00699	−0.0106	0.0177
		(0.0128)	(0.0110)	(0.0140)	(0.0143)	(0.0139)
Women in parliament (in %)			0.0188 ***			
			(0.00306)			
Childcare expenditure (in % of GDP)				0.209		
				(0.129)		
Women on boards (in %)					0.0154 ***	
					(0.00428)	
Gender wage gap (in %)						−0.00292
						(0.0119)
Constant	0.104	−49.77 *	−24.16	−14.14	21.10	−35.62
	(0.149)	(25.74)	(22.18)	(28.09)	(28.81)	(28.01)
Random intercept for country	−1.639 ***	−1.670 ***	−2.893 ***	−1.693 ***	−1.994 ***	−1.761 ***
	(0.241)	(0.254)	(0.857)	(0.253)	(0.289)	(0.272)
Observations	5421	5366	5421	5243	5224	5052
Number of countries	29	26	29	22	23	23

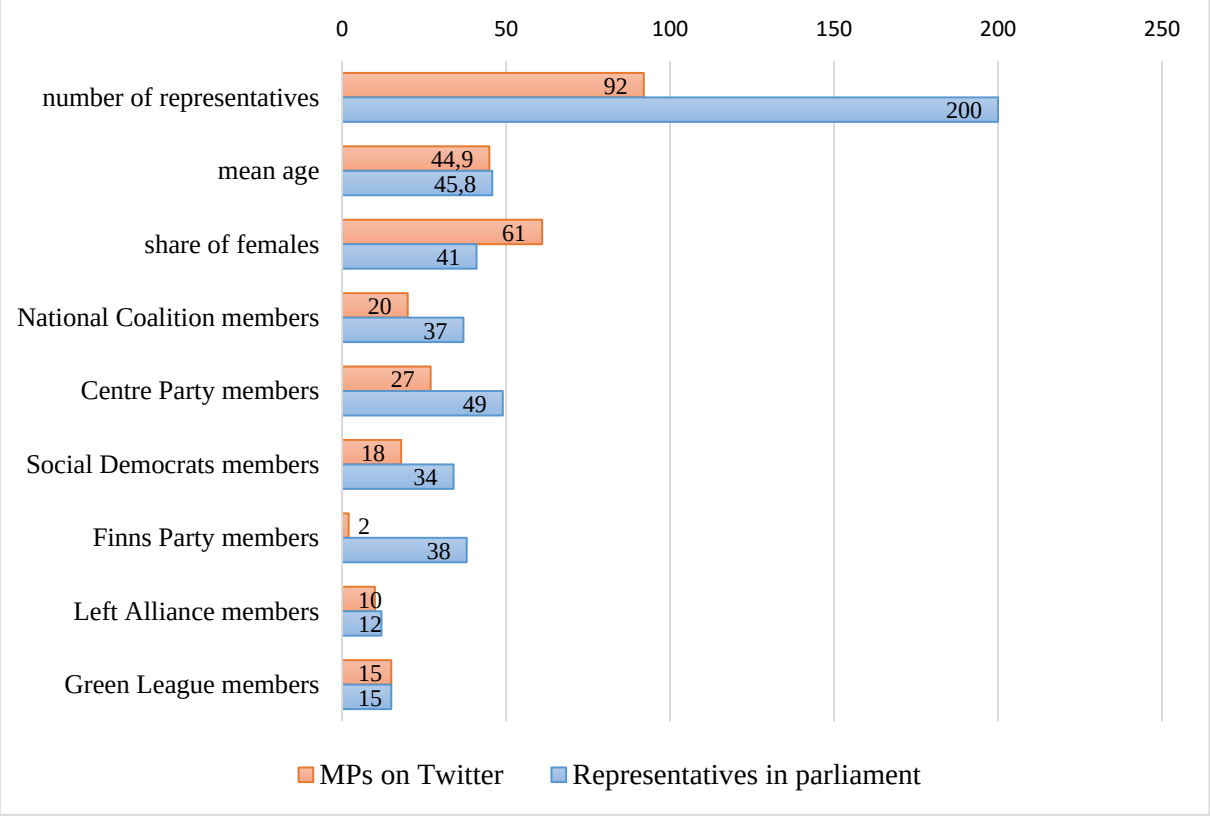
Notes: own calculations based on the European Values Study 2008 and 2017, the OECD Social Ex-penditure Aggregated Dataset, the Comparative Welfare States Data Set, and World Bank Gender Statistics. Standard errors in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.1.

C.11 Average marginal-effect plot of men's preferred job selection on gender gap in far-right orientation



Appendix D *to Welfare experiments as tools for evidence-based policy making? The political debate on twitter about the basic income trial in Finland*

D.1 Comparison of demographics: parliament vs. twitter



D.2 Sample

Party	Number of tweets	Positive (%)	Negative (%)
Centre Party	79	64,6	31,6
National Coalition Party	72	18,1	76,4
Social Democratic Party	19	5,3	94,7
Finns Party	4	0	75,0
Left Alliance	51	84,3	13,7
Green League	115	88,7	11,3
	359		