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Unequal Representation of Women and Youth on Climate Policy Issues

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ABSTRACT

Women and youth support climate policies to a larger extent than their counterparts, and they are underrepresented in formal politics. This paper explores whether descriptively underrepresented groups also are substantively underrepresented on climate issues. I study issue congruence between the public and elected representatives on climate policies in Norway and find high levels of overall congruence. However, representatives are less congruent with women and youth than they are with men and older age groups, linking descriptive and substantive representation.

KEYWORDS

Issue congruence; climate policy; representation; inequality; youth


Introduction

Policymakers should reflect the policy preferences of citizens in a representative democracy (Pitkin, 1967). A gap between the preferences of the people who vote and the representatives they vote for can threaten the function of representative democracy. Focusing on congruence builds on the idea that unequal responsiveness originates before decisions are made, based on the composition and preferences of elected representatives (Weber, 2020).

Research in the field of political congruence has focused on ideological congruence, typically measuring mass-elite distance through self-placement on the left-right scale (Golder & Stramski, 2010; Powell, 2009). More recently, *issue congruence* has become an increasingly common approach (Arnold & Franklin, 2012; Dalton, 2017; Rosset & Stecker, 2019), capturing the distance between representatives and citizens on specific policy issues. Moreover, scholars (Boas & Smith, 2019; Lupu & Warner, 2017) have connected issue congruence with inequality, showing that some groups' preferences are better represented than others.

I follow that line of work by studying unequal issue congruence on climate policy, an understudied topic, though being one of the greatest global challenges of our time. Differential representation requires differences in public preferences, at minimum (Soroka & Wlezien, 2008). Women and youth are more concerned with climate change and support climate policies more than men and older age groups do (Poortinga et al.,

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2019). These pro-climate groups are also underrepresented in formal politics. A potential substantive underrepresentation of climate issues might suggest that better descriptive representation of women and youth can lead to more climate action.

I study climate issue congruence in Norway, a wealthy and well-functioning representative democracy with a highly educated public concerned with climate change. Salience and an informed public are important conditions for congruence (Kyselá, 2018). Generally, these conditions are met on the climate issue in Norway, which makes it a *most* likely case, and I expect to find high levels of congruence. In addition, as an egalitarian democracy, Norway is a *least* likely case for inequality. I do not expect to find large differences in congruence between sociodemographic groups. However, women and youth are descriptively underrepresented in politics, which might lead to substantive underrepresentation.

I use survey data from the Norwegian Citizen Panel (NCP) and the Panel of Elected Representatives (PER), with representatives at the local, regional, and national levels in Norway. I first establish differences in climate policy preferences between sociodemographic groups. Thereafter, I compare preferences of citizens and representatives and examine whether some groups' preferences are better represented. I focus on women and young, who's climate preferences stand out.

I find that representatives are less congruent with younger citizens than they are with older age groups. The young are underrepresented at all political levels, and I argue for a connection between descriptive and substantive representation. Representatives are also less congruent with women, another descriptively underrepresented group. Men and older representatives tend to represent the preferences of their matched groups better than women and younger representatives do. However, the preferences of women and young citizens are (slightly) better represented by their own sub-groups, than by all representatives.

Representation and Equality

Democracy is uniquely characterised by forging a 'necessary connection' between public preferences and public policy (May, 1978; Saward, 1998). Issue congruence, here understood as a match between the preferences of the public and policymakers, can be viewed as a cross-sectional picture of a larger process of responsiveness, where preferences are translated into actual policies.

Peters and Ensink (2015) argue that, in addition to responsiveness, political equality is an important condition for democracy. There should not, from a democratic point of view, be a systematic inequality in whose preferences are responded to. While descriptive representation deals with the characteristics of the representatives, substantive representation can be defined as having one's policy views expressed by an elected representative (Hayes & Hibbing, 2017). If someone who shares characteristics with you is more likely to also share policy views with you, descriptive and substantive representation can go hand in hand, and the former lead to the latter (Costa & Schaffner, 2018; Mansbridge, 1999). If simultaneously policy views differ between sociodemographic groups, descriptive representation can be crucial for policy preferences to be expressed by representatives.

Traditionally, men, older, higher educated, and affluent, have been overrepresented in politics (Bartels, 2009; Peters, 2018; Soroka & Wlezien, 2008; Stockemer & Sundström,

2018). As policy preferences vary by characteristics such as gender and age, descriptive underrepresentation may have consequences of inequality beyond symbolically (Joshi & Och, 2019). Biases in the makeup of parliaments matter for substantive representation (Elsässer et al., 2020; Mansbridge, 2015).

A common explanation for why women might best represent women is that of a shared experience (Mansbridge, 1999). Especially that of disadvantage, discrimination, and exclusion. Further, that those lacking this experience might not understand the concerns, interests, and perspectives of these groups (Phillips, 2020). However, it is recognised that also men have fought for women's rights, that women differ in their experiences and preferences, and that not all elected women want to speak for women specifically (Celis et al., 2008; Phillips, 2020). Any form of inequality can be seen as problematic from a democratic stand point, not only in cases of marginalised groups. Mansbridge (2015) argues that a crucial factor in terms of the importance of a group's descriptive representation is how well the interests of a group are represented through other mechanisms in the larger representative system.

The underrepresentation of women has been thoroughly studied the last decades (Costa & Schaffner, 2018; Mansbridge, 1999; Phillips, 1995; Wängnerud, 2009). The youth in politics is a far smaller and recent research field. The young are, however, strikingly underrepresented in the political sphere (Fisher, 2012). Among the world's voting population, the age group of 20–39 make up over 40%, but account for only 17% of members of parliament (Belschner & Garcia de Paredes, 2020). Compared to gender, which is stable and consistent over time for most people, age is inherently different, as it changes continuously by nature. Being young is temporary, and individuals' underrepresentation in terms of age is therefore also temporary. However, from a group perspective, the presence of youth in legislatures is crucial (Sundström & Stockemer, 2020; Young, 1990), and they can provide unique perspectives.

Education is often used to explain voting behaviour and political attitudes and is an important factor in political, social and economic divides recently seen in Western Europe (Schakel & van der Pas, 2020). Elsässer et al. (2020) argue that descriptive misrepresentation in European parliaments mainly stems from differences in education and occupational background. A growing number of studies on representation have focused on affluence, demonstrating that political decisions are biased in favour of affluent citizens (Elsässer et al., 2020; Lupu & Warner, 2022; Mathisen et al., 2021).

In political science, the centre-periphery framework is well known. Peripheral regional location, the distance from the political centre, is a distinct factor when explaining political systems and outcomes (Stein et al., 2021). This includes spatial identity and representation of specific regional interests, as well as a potential sense of exclusion from the political system and decisions made in the political centre.

Lupu and Warner (2022) find that, around the world, legislators' preferences are consistently more congruent with those of affluent citizens. However, this inequality varies substantially by issue. While the affluent are better represented on economic issues, the poor seem best represented on cultural issues. Lupu and Warner (2017) demonstrate that preferences of Argentine elites resemble citizens residing in the capital area and the wealthy, on most issues. In a study of 16 European states, Rosset and Stecker (2019) find that the poor are particularly underrepresented on redistribution, while the lower educated are underrepresented on European integration. Boas and Smith (2019)

measure congruence in Brazil in groups by gender, religion, and ethnicity. They argue that voting for someone who looks like them might be a good way for citizens from historically underrepresented social groups to elect representatives who think similarly on major policy issues.

However, not all studies on issue congruence demonstrate inequalities. Kissau et al. (2012) show that different age groups are relatively equally represented in terms of policy preferences in the lower house of the Swiss parliament. Comparing 21 European countries, Dingler et al. (2018) surprisingly find that women's preferences tend to be more accurately represented in parliaments than those of men. Their finding is driven by levels of women's turnout, arguing that who votes is more important than who represents. However, they show that the policy fields of environment and multiculturalism are important exceptions, for which parliaments reflect men's preferences better than women's preferences.

Climate Policy Preferences

Higher levels of congruence are expected when issues are more salient and information is readily available (Kyselá, 2018). As one of the greatest challenges of representative democracies today, climate change is a highly salient issue with extensive information and accumulated knowledge. However, the short-term nature of representative democracy makes politicians unwilling to take necessary action for a long-term sustainable society (Hysing, 2013).

Research has shown systematic variations in climate change perceptions and policy preferences between men and women, age groups, and educational attainment in Western democracies, including Norway (Ballew et al., 2020; Hornsey et al., 2016; Poor-tinga et al., 2019). Women, young, and higher educated are generally more concerned about climate change, and more pro-climate action, than men, older, and lower educated, respectively. However, attitudes among elected representatives on these issues have not been thoroughly mapped. We could expect similar patterns among these sociodemographic groups, based on the descriptive representational argument that women tend to represent the preferences of women, and so forth. However, studies suggest that the preferences of representatives are generally more structured than those of citizens, and that representatives' opinions often appear more extreme, due to a stronger partisan link (Powell, 2004). Representatives also have more at stake than voters do, and need to consider the long-term effects of action versus short-term costs and re-election.

Climate change divides other groups than, for examples, issues of economy and redistribution. The preferences and actions of youth specifically stand out. Through demonstrations and the use of social media, youth have taken issue ownership over climate change, as witnessed through the movement led by climate activist Greta Thunberg. They are, however, not as visible in formal politics. The young not only vote less than older age groups, but they are also less likely to run for election, and thus becoming elected representatives (Belschner & Garcia de Paredes, 2020). The preferences of the young should be well known though, through their higher levels of participation in unconventional forms.

Those who demand action on climate change, specifically youth, but also women, are underrepresented in formal politics, which might explain why the implementation of

climate policies is moving at such a slow pace. Based on previous research, I expect the young and women to be underrepresented on climate policy issues. If other sociodemographic groups diverge in opinion *and* are descriptively underrepresented, I expect inequality in these groups as well.

The Case of Norway

I study climate issue congruence in Norway, a well-functioning representative democracy with a highly educated public. Together with the other Nordic countries, Norway is an egalitarian society, with high levels of social mobility. Though some groups, including those discussed above, are underrepresented in formal politics, representation is more equal than in most countries. Norway is one of the world's most gender-equal countries (WEForum, 2020). The proportion of women in Parliament in Norway is comparatively high, with 45% of the seats (Stortinget, 2021). Women hold around 40% of the seats in local legislatures (SSB, 2020). In terms of age, Norway has the highest share, comparatively, of MPs under 30, with 13.6% of the seats. The share of MPs under 40 is 34.3% (IPU, 2021). In Norwegian local and regional legislatures, the age group 18–39 makes up around 28% of elected representatives. Lower educated are descriptively underrepresented, but not especially so, compared to other European countries (Gaxie & Godmer, 2007). Geographical representation is important in Norway and included in the electoral system. The distribution of parliamentary seats in the counties (constituencies) is based on a weighted sum of the number of inhabitants and the county's area, where area is weighted more than population (Føllesdal, 2010). This leads to the most Northern peripheral regions actually being descriptively overrepresented in Parliament.

On the one hand, with Norway being egalitarian and a least likely case of inequality, I do not expect to find large differences in congruence between sociodemographic groups. However, because there is still some underrepresentation of certain groups, I might find substantive underrepresentation.

When it comes to climate policies, Norway is an interesting case. The country is ahead on renewable energy sources, with essentially zero emissions from power production (Steentjes et al., 2017), which is largely derived from hydroelectric power. Norway has been seen as a pioneer country for international agreements to reduce greenhouse gas emissions. The country is committed to cut emissions by 50–55% by 2030 through the 2015 Paris Agreement. Norway is, however, a paradoxical case. The wealth of the country is largely due to its large oil resources, and the Norwegian economy is heavily dependent on the oil industry. Oil and gas extraction is the largest emission source in Norway (SSB, 2017), and Norway faces a significant societal transition if the goals are to be achieved. Thus, the implementation of climate policies is pressing.

In a comparative study of Norway, Germany, France and UK, Steentjes et al. (2017) found that the level of climate acceptance is high in all countries but highest in Norway. A majority of respondents agreed that being environmentally friendly is an important part of being Norwegian, and that as a nation their country can make a difference when it comes to climate change. Climate change and the environment (ranked 2nd and 4th, respectively) had higher priority as national issues compared to other countries (Steentjes et al., 2017). However, research has found a relatively weak relationship between environmental concern and pro-environmental behaviour (Kulin & Johansson

Sevä, 2020). Still, considering the salience of climate issues, I expect a fairly high level of overall congruence, placing Norway as a most likely case in this context. In sum, Norway is a relevant case for studying (unequal) climate policy congruence. Due to Norway being a comparatively equal country, if there is inequality in issue congruence, we could expect the same in other countries as well, to an even larger extent.

Data

I use survey data from the Norwegian Citizen Panel (NCP) and the Panel of Elected Representatives (PER) collected between 2018 and 2020. NCP is a representative sample of the Norwegian population, while PER invites all elected representatives at all political levels (local, regional, and national) in Norway. A vast majority, 4019 out of 4321, of the respondents in the first wave of PER are local representatives in municipal councils. Norwegian local councils provide the majority of social services and public goods provision. The municipalities have some responsibilities in terms of climate policies. More generally, being a local representative is an important stepping stone into national politics (Cirone et al., 2021).

All questions used in this study (Table 1) have been asked to respondents in both NCP and PER. The elected representatives were specifically asked about their personal opinions on these issues. All statements suggest actions that can be considered pro-climate and concern emission reduction.

The policy issues cover major aspects of the climate and transition debate – energy, transportation, agriculture, and food. While the car issue has been debated the past years, and some related policy is in place, the meat and dairy production issue is relatively new in the public debate. It may be perceived as more controversial and polarising than the other questions. It is plausible that representatives do not know where their voters stand on this issue. Oil and gas extraction has been the subject of debate for many years but has recently more or less been put at rest. Wind power has become an increasingly salient issue, and the debate of onshore wind has created a divide.

The oil and gas and meat and dairy issues have been repeated over time in both panels and are therefore included twice in the analyses, increasing the number of policy issues to seven. This provides an opportunity to examine how stable issue congruence is, and whether representatives and citizens move closer to each other in their preferences over time. It is also beneficial for robustness, because representatives in PER were recruited twice, with a local and regional election between the two recruitments.¹ The second time the issues were fielded was after the second recruitment. Thus, repeated issues are asked to different samples of representatives. The policy issues were fielded

Table 1. Policy issues.

Policy issue	Statement
Electric cars	All new passenger cars from 2025 should be electric, hydrogen-powered or similar
Oil and gas extraction	We should not allow oil and gas extraction in Lofoten, Vesterålen and Senja
Meat and dairy production	Norway should halve today's meat and dairy production by 2050
Onshore windmills	More land-based windmills should be built in Norway
Offshore windmills	More sea-based windmills should be built in Norway

in the two panels at approximately the same time, with a maximum distance of three months.

The 7-point response scale runs from strongly disagree (1) to strongly agree (7).² Higher means in Table 2 indicate more agreement. Meat and dairy production has the least support, followed by onshore wind. Offshore wind, on the other hand, has the most support, followed by oil and gas extraction. Support is higher for citizens than representatives on most of the policy issues. Change over time on the repeated oil and gas and meat and dairy issues is limited.

The sociodemographic variables used in the analyses are gender, age, education, region, and income. Though the main focus is on gender and age, I include other factors commonly used in studies of both unequal representation and policy preferences. This provides a basis for comparison of the effects and differences between sociodemographic groups. Age is divided into three generational groups: those born in 1949 or earlier (senior), those between 1950 and 1979 (middle), and 1980 or later (young). All respondents are over 18, the voting age in Norway. For the sake of anonymity, the age variables in NCP and PER are coded in groups. The young are approximately 40 and younger, and the seniors are 70 and older. Up to 40 years is a common definition of youth in political representation (Belschner & Garcia de Paredes, 2020). Education is divided into two groups: those with higher education and those with lower education. Region is also divided into two groups: the central region surrounding the capital, Oslo and Eastern Norway (centre), and the rest of the country (periphery). Citizens are divided into three income groups: up to 300,000 NOK (low income), between 300,001 and 700,000 NOK (middle income), and over 700,000 NOK (high income). Information about income is not available in PER and therefore not included in the analysis of representatives. Both age and income are coded for approximately similar group sizes on the ends of the scale, to control for group size effects. Larger groups would and should, theoretically, be better represented. Increasing the size of the groups controls for skewed results due to sensitivities in analyses with smaller N, and makes the groups within sociodemographic variables more comparable to each other. A potential limitation would be to not capture the actual inequality caused by biases. However, if unequal congruence is still evident, this increases the robustness of the results.³

Table 2. Descriptive statistics of policy issues.

Policy issue	Representatives	Citizens	Fielded
Electric cars	3.93 (2.02)	4.06 (1.96)	PER1, 2018 NCP12, 2018
Oil and gas extraction (1)	4.79 (2.20)	5.00 (1.92)	PER2, 2019 NCP14, 2019
Meat and dairy production (1)	2.51 (1.66)	3.14 (1.78)	PER2, 2019 NCP15, 2019
Onshore wind	3.43 (1.96)	3.92 (2.02)	PER3, 2020 NCP16, 2019
Offshore wind	5.39 (1.63)	5.29 (1.66)	PER3, 2020 NCP16, 2019
Oil and gas extraction (2)	4.92 (2.12)	4.90 (1.99)	PER3, 2020 NCP17, 2020
Meat and dairy production (2)	2.49 (1.73)	3.17 (1.77)	PER3, 2020 NCP18, 2020

Means of policy issues. Standard deviation in parentheses. Scale 1 (strongly disagree)–7 (strongly agree).

The representativity of the samples should be taken into account. In PER, women were slightly underrepresented in the first recruitment, while close to full representation in the second recruitment. In NCP, gender is (close to) perfectly represented. Higher educated are overrepresented in PER, and increasingly so from the first to second recruitments. They are even more overrepresented in NCP. Younger are underrepresented, while older are overrepresented in PER. The age bias is more substantial in the second recruitment than in the first. The youngest age group measured in the panel (born in 1990 or later) is the most underrepresented, while the oldest age group (1959 or earlier) is the most overrepresented. The same pattern is found in NCP (Skjervheim et al., 2018, 2019, 2020).

Earth Mover's Distance

Lupu et al. (2017) introduced a new congruence measure to political science, the Earth Mover's Distance (EMD). It measures the extent to which the responses of two different groups are similar. The statistical distributions of the groups are compared, calculating how much effort it takes for the two to become identical. The EMD is used as a measurement of what Golder and Stramski (2010) coined as many-to-many congruence, comparing many citizens to many representatives. Other congruence measures throw out valuable information in the data by excluding variance or variation. The EMD includes both the amount and location of all the data (Lupu et al., 2017), in contrast to, for example, a *t*-test, which only uses means. The EMD is especially valuable when using Likert scales. It indicates the distance between two samples on the scale of the original response (Lupu et al., 2017), which makes the interpretation straightforward.

In this study, the EMD measures the distance or similarity between the distribution of preferences of citizens and representatives on the 7-point scales of each policy issue. The EMD, in this case, theoretically ranges from 0 to 6, with 0 being a perfect score. An EMD of 0 would occur if the two distributions were identical, while 6 would occur if all respondents in one sample were located at one end of the scale and all respondents in the other sample were located at the other end of the scale. The EMD is calculated using the *emdist* package in R (Urbanek & Rubner, 2012).

Mass-Elite Congruence

I first measure overall mass-elite congruence, comparing the distributions of the entire samples. Figure 1 presents the distribution and mean (dashed line) of the citizen and representative panels on the policy issues. Representatives have stronger opinions than citizens, with higher shares on both ends of the scale. Offshore wind is an exception, with well-matched distributions, as well as onshore wind, where a larger share of citizens strongly agrees than representatives.

Representatives and citizens are strikingly congruent on the policy issues, with EMDs well below 1 (Table 3). The highest EMD, and thus least congruence, is on the meat and dairy issue (0.63 and 0.68). Offshore wind is the most congruent issue (0.04). The least congruent issues have more recently entered the public debate. The repeated policy issues show relative stability over time, with meat and dairy being the least congruent

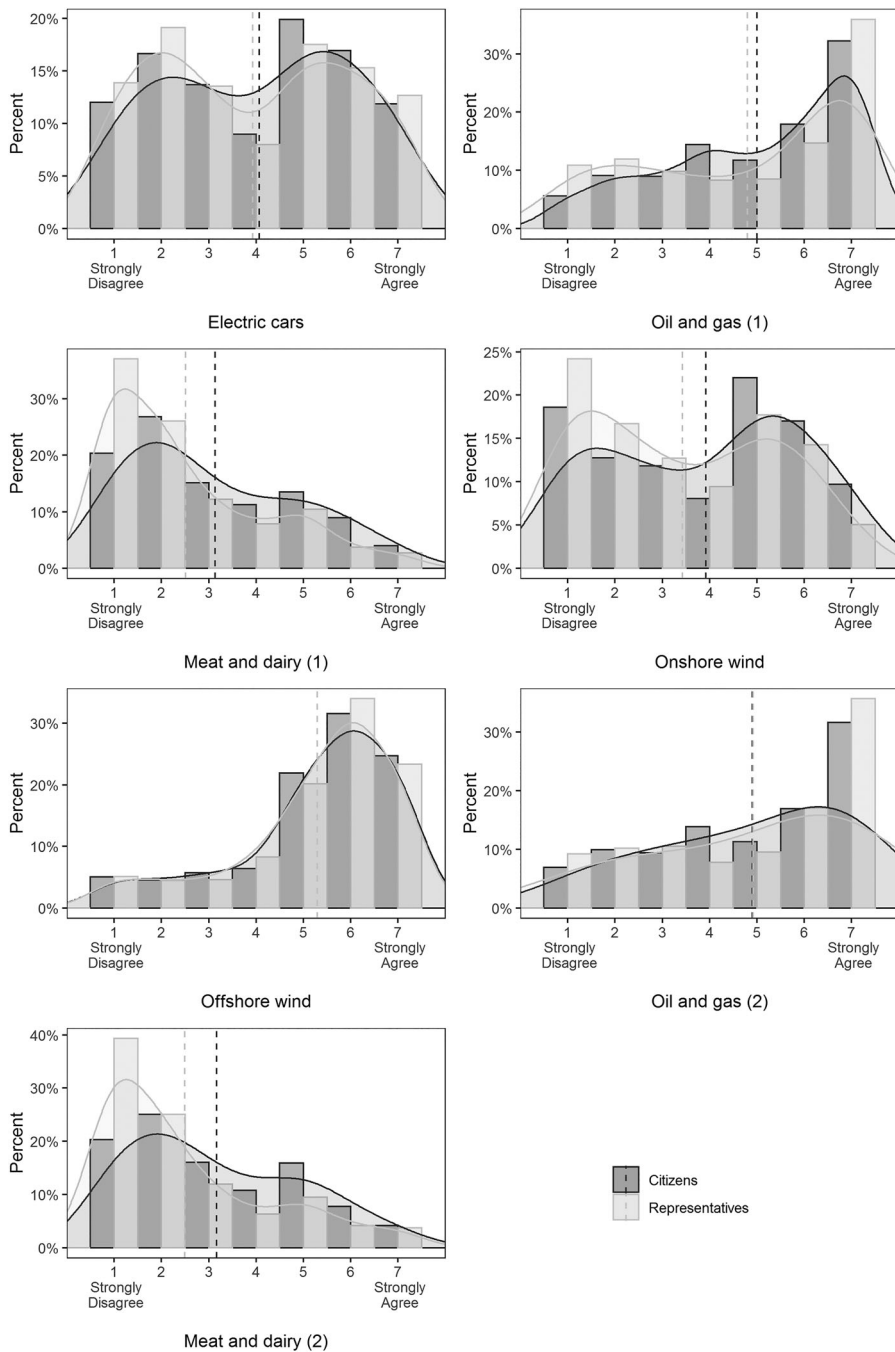


Figure 1. Overall distribution of policy issues.

issue and oil and gas in the middle. While representatives and citizens have become more aligned on the oil and gas issue over time, they have moved somewhat further away from each other on the meat and dairy issue.

Table 3. Overall congruence.

Electric cars	Oil and gas (1)	Meat and dairy (1)	Onshore wind	Offshore wind	Oil and gas (2)	Meat and dairy (2)
0.15	0.29	0.63	0.49	0.04	0.19	0.68

Note: Distance between citizens and representatives from 0 (perfect congruence) to 6 (incongruence).

Congruence in Sociodemographic Groups

Before analysing unequal representation on climate issues, and whether some groups are more congruent than others, I first need to establish that there actually are differences in the preferences of these groups. Inequality in congruence presupposes differences in groups' preferences. If some groups who have diverging opinions from other comparable groups also are descriptively underrepresented in legislatures, we can expect their policy preferences to be underrepresented as well. I, therefore, test the effects of gender, age, education, region, and income, on climate policy preferences.

Table 4 presents results from ordered logistic regressions.⁴ They confirm the significant effects of gender, age, and education on most policy issues for both citizens and representatives. Women, young, and higher educated are more likely to support climate policies. However, women are less likely to support wind power. For citizens, this only applies to offshore wind, while the effect on onshore wind is not significant. Young has no significant effect on the oil and gas issues, nor offshore wind among citizens. The effect of higher education is not significant on either wind issue, nor the first meat and dairy issue in the citizen panel. Among representatives, young and women have significant effects on all issues except for the first meat and dairy. The effects of region and income vary.

Table 4. Ordered logistic regression analyses.

	Electric cars	Oil and gas (1)	Meat and dairy (1)	Onshore wind	Offshore wind	Oil and gas (2)	Meat and dairy (2)
Representatives							
Women	0.25*** (0.06)	0.42*** (0.07)	0.14 (0.07)	-0.30*** (0.08)	-0.38*** (0.08)	0.47*** (0.06)	0.34*** (0.09)
Young	0.67*** (0.09)	0.34** (0.13)	0.20 (0.12)	0.28** (0.10)	0.59*** (0.10)	0.45*** (0.08)	0.65*** (0.12)
Higher education	0.82*** (0.06)	0.50*** (0.08)	0.76*** (0.08)	0.37*** (0.09)	0.57*** (0.09)	0.56*** (0.07)	0.45*** (0.10)
Centre	0.03 (0.06)	0.03 (0.07)	0.32*** (0.07)	0.43*** (0.08)	0.35*** (0.08)	0.11 (0.06)	0.25** (0.09)
Obs.	4053	2684	2688	1946	1939	3532	1593
Citizens							
Women	0.78*** (0.16)	0.42*** (0.06)	0.60** (0.20)	0.05 (0.13)	-0.51*** (0.14)	0.44*** (0.09)	0.42* (0.18)
Young	1.00*** (0.21)	0.14 (0.08)	1.27*** (0.28)	0.58*** (0.14)	0.37 (0.20)	0.19 (0.11)	1.13*** (0.24)
Higher education	0.54*** (0.14)	0.50*** (0.05)	0.34 (0.18)	0.21 (0.11)	0.22 (0.13)	0.63*** (0.09)	0.61*** (0.14)
Centre	-0.05 (0.15)	0.02 (0.06)	0.29 (0.20)	0.71*** (0.13)	0.53*** (0.13)	0.03 (0.09)	0.22 (0.17)
High income	0.30 (0.18)	-0.44*** (0.07)	-0.01 (0.16)	0.25 (0.19)	0.43* (0.17)	-0.36** (0.11)	0.10 (0.16)
Obs.	1170	8445	1155	1381	1380	3710	1213

Note: Standard errors in parentheses. *** p -value < .001; ** p -value < .01; * p -value < .05.

I now measure congruence between sociodemographic groups to analyse whether there is inequality, and some groups are better substantively represented than others. This is done first by dividing the representative *and* citizen panels into groups by gender, age, education, and region. The statistical distributions of preferences on the policy issues of the sub-groups in the two panels are then compared. This captures congruence between citizens and representatives who are descriptively similar.

Table 5 provides EMDs comparing the same sub-groups in both panels. Divided into sociodemographic groups, the highest EMD is found between young citizens and young representatives on meat and dairy production (1.02). The lowest EMD is between citizens and representatives in the middle age group on offshore wind (0.06). In general, women are less congruent than men, young less congruent than older age groups, and lower educated less congruent than higher educated. Those in the central region are less congruent than peripheral regions. The largest difference in congruence between two groups within the same sociodemographic variable is that of young versus old. EMDs in the repeated policy issues of oil and gas and meat and dairy show smaller differences in congruence between sub-groups within the same sociodemographic variable over time. When split into sociodemographic groups, representatives still have stronger opinions than citizens on the policy issues, with the distribution skewed more towards both ends of the scale in PER.⁵

Because the EMD itself does not offer any statistical significance, I use the data in Table 5 to run an OLS regression. This allows me to test whether the EMD varies significantly between sociodemographic sub-groups. The EMD is the dependent variable, ranging from 0.06 to 1.02. All 9 sociodemographic sub-groups (men, women, young, etc.) are independent variables. These are coded to dummies with each observation given the value 1 for the sub-group concerned, and the value 0 for all other sub-groups. For example, the upper left cell in Table 5 has an EMD of 0.14. In the regression, for this observation $EMD = 0.14$, $men = 1$, and all other sociodemographic dummies = 0. The number of observations is 63. None of the sociodemographic variables have significant effects on the EMD, though young has the largest coefficient (0.19). The effects of women and young are positive, indicating less congruence. On the contrary, the effects on men, older, and middle-aged are negative, increasing congruence. The regression table is included in the appendix (Table 20, model 1).

Table 5. Congruence in matched sociodemographic sub-groups.

	Electric cars	Oil and gas (1)	Meat and dairy (1)	Onshore wind	Offshore wind	Oil and gas (2)	Meat and dairy (2)
Men	0.14	0.26	0.35	0.38	0.11	0.12	0.64
Women	0.25	0.24	0.73	0.65	0.10	0.28	0.66
Young	0.18	0.44	1.02	0.77	0.17	0.34	0.87
Middle	0.14	0.26	0.48	0.44	0.06	0.16	0.64
Senior	0.20	0.27	0.25	0.24	0.17	0.18	0.67
Lower education	0.28	0.36	0.66	0.49	0.14	0.26	0.57
Higher education	0.13	0.28	0.56	0.51	0.10	0.14	0.78
Centre	0.16	0.31	0.48	0.57	0.08	0.20	0.66
Periphery	0.16	0.28	0.57	0.28	0.07	0.19	0.63

Note: Distance between citizens and representatives from 0 (congruence) to 6 (incongruence). Representatives and citizens are divided into groups by gender, age, education, and region and compared by matching sub-groups.

Following, I compare the statistical distributions of policy preferences in sociodemographic groups of citizens to the entire representative sample. Citizen's income is also included in this analysis. This examines whether some groups' policy preferences are better represented than others, and representatives are more congruent with certain groups.

Table 6 provides EMDs for sociodemographic groups of citizens compared to the entire representative panel. On most of the policy issues, representatives are more congruent with men than with women. Representatives are also more congruent with older citizens than with young, and the most congruent across all policy issues with the middle-aged. Representatives are more congruent with lower-educated citizens than higher-educated citizens. In other words, men are better represented than women, older people are better represented than younger people, and lower educated are better represented than higher educated. Representatives are more congruent with citizens in the peripheral regions than the central region on four of the seven issues. Representatives are more congruent with citizens with high income than with those with low income on the first three policy issues, but the opposite for the second half of the issues. However, the middle-income group is consistently the most congruent.

Interestingly, on the first oil and gas, as well as both meat and dairy issues, men citizens are better represented by all representatives (Table 6), than they are when only matching them with men representatives (Table 5). In other words, on these issues, men are better represented by men and women combined than by men alone. Women, on the other hand, are better represented by their own, than by all representatives.

The highest EMD, and least congruence, is for young citizens on meat and dairy production (1.36 and 1.40). In contrast, the lowest EMD, and most congruence, is for middle-income citizens on offshore wind (0.07). The largest difference between the two groups within the same sociodemographic variable is that of young versus middle-aged.⁶

Table 6. Congruence between citizens' sociodemographic sub-groups and all representatives.

	Electric cars	Oil and gas (1)	Meat and dairy (1)	Onshore wind	Offshore wind	Oil and gas (2)	Meat and dairy (2)
Men	0.31	0.23	0.30	0.48	0.16	0.36	0.50
Women	0.54	0.55	0.83	0.51	0.16	0.30	0.88
Young	0.65	0.42	1.36	0.96	0.11	0.21	1.40
Middle	0.08	0.26	0.40	0.37	0.09	0.20	0.50
Senior	0.29	0.34	0.50	0.44	0.14	0.23	0.71
Lower education	0.37	0.37	0.20	0.28	0.18	0.45	0.30
Higher education	0.37	0.42	0.76	0.63	0.11	0.23	0.91
Centre	0.14	0.32	0.69	0.87	0.13	0.18	0.82
Periphery	0.15	0.26	0.44	0.09	0.14	0.20	0.53
Low income	0.19	0.47	0.89	0.52	0.18	0.27	0.74
Middle income	0.17	0.32	0.48	0.43	0.07	0.15	0.64
High income	0.10	0.24	0.52	0.66	0.36	0.41	0.75

Note: Distance between citizens and representatives from 0 (congruence) to 6 (incongruence). Citizens are divided into groups by gender, age, education, region, and income and compared to all representatives.

To test whether the EMD varies significantly between sub-groups, I use the data in Table 6 to run an OLS regression ($N = 84$). This is done in the same manner as described above (for Table 5). The EMD is the dependent variable, and the 12 sociodemographic groups are independent variables. The only significant effect on EMD is that of the young (p -value $< .01$). This positive effect holds when excluding repeated policy issues. Elected representatives are significantly less congruent with young citizens, than with all other sociodemographic groups. The regression table is presented in the appendix (Table 20, model 2).

There are small differences between sub-groups over time on repeated policy issues. Women are better represented on the oil and gas issue the second time, and the difference in congruence between men and women is much smaller. This is likely due to the representativity of women being better in PER the second time this issue is included.⁷ When women citizens are matched with women representatives only, women are actually slightly more congruent in the first oil and gas than the second, while men are better matched the second time. Thus, the reason for women being better represented by the entire PER in the second oil and gas is not due to a better match between their own, but the fact that there are more of their own. A similar pattern is also found for the young, even though they match each other better the second time. The representativity in PER of the young is better when oil and gas is included the second time, which can explain why there is virtually no age inequality in congruence on this issue.

Somewhat surprisingly, on the meat and dairy issue, most sub-groups are less congruent the second time the issue is included. However, young and women, who had the highest EMDs on the first meat and dairy issue, became more congruent in their respective groups on the second issue. Still, all citizen groups, except for low income, are less congruent with the representatives in the second meat and dairy issue. The difference between overall congruence in the two rounds is minimal, thus other groups seem to be representing them instead. The distance between the two panels increased from the first to the second item, though. Representatives moved towards stronger disagreement, and citizens towards more agreement.

Discussion and Conclusion

The results largely confirm that there is congruence on climate policies in Norway. However, I find inequality between sociodemographic groups, in line with previous studies on unequal issue congruence. Some groups are consistently better represented than others, on the policy issues. Dividing lines depend on the issue. Young and women are particularly substantively underrepresented on climate policy, as well as descriptively underrepresented. This is in contrast to the findings of Kissau et al. (2012) on the substantive representation of age groups, but in line with the exception of environmental policy that Dingler et al. (2018) find for substantive representation of gender. Women and young match their own groups less well compared to men and older. It might seem like women and young representatives either do not know their own group's preferences well enough, or they are more aligned with men and older representatives, who make up the majority of the legislative bodies.

Dingler et al. (2018) argue that 'the causal linkage between descriptive and substantive representation is not as proximal as previously thought, because male and female MPs

are equally willing and able to take up women's heterogeneous policy preferences' (p. 14). However, when I match male and female representatives, separately, with male and female citizens, there is a clear distinction and importance in terms of who represents. Women are best represented by women, and men are best represented by men. A similar pattern is found for age groups.⁸

We could expect the largest groups to be best represented, theoretically, in terms of majority views, and methodologically, with potential group size biases. For gender, the distribution of men and women are equal, both in the real world, and in the citizen panel. Men are, however, overrepresented in politics, which is reflected in the representative panel. For age, the middle group is the largest among citizens and representatives alike, and also the most congruent age group. More importantly, though, the young and old age groups are similar in size in the citizen panel, and thus comparable. The higher educated are overrepresented in both the citizen and representative panel. Despite this, the lower educated are somewhat better represented substantively. Group size alone does, therefore, not explain unequal issue congruence.

The underrepresented groups of women and young are also those who consistently hold higher levels of support for climate policies and call for climate action, especially the young. Therefore, better representation of women and young can be an important step towards climate action, at least for policy support. Due to Norway being a least likely case of inequality, we could expect to find inequality in issue congruence in other countries as well.

My findings add to previous studies linking issue congruence with inequality, demonstrating that some descriptively underrepresented groups are substantively underrepresented as well. However, Dingler et al. (2018) argue that for issue congruence, who votes is more important than who represents. Griffin and Newman (2005) found that voters are better represented than non-voters by elected officials in the US. This is an especially interesting perspective in relation to the underrepresentation of the young, who consistently have low turnout levels, compared to the rest of the public. The young might be suffering a double loss in the way to substantive representation – first from low turnout and second from descriptive underrepresentation. While the absence of young voters might decrease the chances of electing young representatives, the lack of representation might also directly contribute to political apathy and declining levels of participation of the young (Stockemer & Sundström, 2019). In relation to the young, climate is a particularly interesting policy domain, because consequences are unequally distributed across time and generations.

There are some limitations of this study. It is a single case study, which contains only five policy issues. This does, however, allow for a deep dive into unequal issue congruence on climate policies in Norway. The study also connects the fields of representation and issue congruence on the one hand, and climate policy on the other hand. For future research, the findings in this paper can be tested and robustness strengthened, by increasing the number of policy issues studied, within the field of climate and environment, as well as through cross-country analyses. Questions to be raised are if these patterns are found in other representative democracies, and whether preferences of the youth and women are even less represented in countries where these groups are more descriptively underrepresented.

Notes

1. The first recruitment of PER includes electric cars; oil and gas extraction (1); and meat and dairy production (1). The second recruitment includes onshore wind; offshore wind; oil and gas extraction (2); and meat and dairy production (2).
2. The scale originally ran from strongly agree (1) to strongly disagree (7), but was turned for more intuitive interpretations.
3. Included in the appendix are Tables 12–14 with different cut-off points of the sociodemographic variables, showing distributions and group sizes.
4. In the citizen sample, probability weights were applied, based on age, gender, geography, and education. When including party dummies in the regressions, the effects of sociodemographic variables generally still hold (see Table 9 in appendix).
5. See appendix for figures with distributions of policy issues in sociodemographic groups.
6. When subdividing the age groups to only include the youngest category (1990 or earlier), the EMDs are even higher, and differences between age groups larger. See Table 16 in the appendix.
7. See Table 11 in the appendix for distribution on sociodemographic variables by policy issue.
8. See Tables 21 and 22 in the appendix for EMDs of matched and unmatched gender and age groups.

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