

Right-wing populism and climate policies: Explaining opposition to road tolls in Norway

Abstract

In 2019, the road toll uproar in Norway contributed to a governmental crisis and road tolls became the most debated issue in the media. Using survey data of around 2,000 respondents, we explore what characterizes opponents of road tolls. Key findings are that attitudes relating to climate change, the environment, and right-wing populism are strongly related to opposition to road tolls. We propose that these attitudes and opposition to toll roads are components of an anti-elitist identity struggle linked to recent literature suggesting that right-wing populists display particular resistance to climate-related policies. Lack of alternative transport modes is not a strong predictor, while owning a car does predict increased opposition. A policy-relevant question for future research is how to facilitate more inclusive climate policies debates, bringing in those who feel left out, for the instruments to be both efficient and legitimate.

Keywords: road tolls; right-wing populism, climate change; survey; xenophobia; climate policy attitudes

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Introduction

Recent studies show that we are far from reaching the goals set out in the Paris Agreement (Friedlingstein et al., 2020). Policies and policy instruments designed to reduce emissions have been slow to come forth, due partly to lack of broad public support for such policies (Levi et al., 2020; Wiseman et al., 2013). Resistance to environmental policies comprises a wide variety of voices, concerns and forms and may also embody resistance to broader societal changes and perceived advocates of these (Norris and Inglehart, 2019). Sociopsychological factors are found to be important for attitudes to climate policy instruments (e.g., Drews and van den Bergh, 2016). For instance, resistance to wind power plants may be about communities' loss of other values and perceived distance between decision-makers and cost-bearers (Jenkins et al., 2017). An emergent literature identifies right-wing populism (RWP) to be important for beliefs about climate change and for positions on general climate policies (Kulin et al., 2021; Lockwood, 2018; Huber, 2020). The link between RWP and opposition to concrete climate policy instruments is, however, underexplored. The purpose of this study is to contribute to increased understanding of opposition to climate policy through a case study of road toll opposition among the Norwegian public.

As in most other high-income countries (Fuglestad et al., 2008), transport amounts to a substantial share – more than one-third – of Norway's total GHG emissions, road traffic being the largest contributor with 17% of Norway's total emissions (Statistics Norway, 2019). Norway's ambition is to reduce its climate emissions by 50–55% by 2030 and by 90–95% by 2050 compared with 1990 emission levels (Ministry of Finance, 2021, p. 7). Strong transport policies are thus required to meet the targets set by the Storting (Norwegian parliament). Across Europe, however, and increasingly in Norway, green transport policies and restrictive measures on fossil fuel cars have been met with massive protests

from citizens (e.g., Grossman, 2019). A recent example is the road toll uproar in Norway in 2019, leading to the establishment of local political parties such as People's Action – No to More Road Tolls. Road tolls were the most debated issue in Norwegian media in 2019 (Henriksen, 2019).

In this study we ask what characterizes opponents of road tolls. Using survey data of 2,029 respondents in the Norwegian population collected in 2020, we explore two sets of potential explanatory variables for road toll opposition. The first set contains attitudinal variables relating to climate and environment and to RWP. Due to the theoretical tension between RWP and the climate change agenda, we expect to find that both RWP and climate skepticism are associated with opposition to road tolls, while pro-environmental attitudes are associated with support. Second, we investigate the explanatory power of self-interest in the form of access to cars and to alternative transport modes. Finally, we control for political left–right ideology and sociodemographic variables such as income, education and rural versus urban residence. Our analysis includes an exploration of the relationships between the different explanatory variables. We limit our focus to attributes of the individuals, as opposed to attributes of the policies as well as individuals' perceptions of the policies' attributes.

1. The opposition to road tolls in Norway in 2019

Road tolls¹ have a long history in Norway. Publicly adopted tolls existed as early as in 1930 (Anchin, 2018). Until recently, tolls were mainly a revenue-raising tool to finance specific road and bridge projects and were spent in the same place as they were collected. This beneficiary pays principle has been applicable to toll projects in Norway and means that those who pay tolls should benefit directly from what the money is spent on. This principle still applies for freestanding tolls (stations) that finance

¹ In this term, we include time-differentiated schemes sometimes labeled as congestion charging.

new road projects, but not for the toll rings in the Norwegian urban growth agreements (UGAs) (Westskog et al., 2020). The Norwegian urban growth agreements (UGAs) are governance platforms combining transport infrastructure development with land-use and transport policy. It is a policy package of measures involving network cooperation between national, regional, and local government levels established to coordinate transport and land-use development (Westskog et al., 2020). The overarching goal for the UGAs is the zero-growth goal, under which “the growth in passenger traffic in urban areas shall be covered by public transport, walking and cycling” (Ministry of Transport, 2017, p. 23). With this goal, the different levels of government seek to reduce negative externalities of urban car usage, such as noise, congestion, greenhouse gas emissions, and accidents. The rationales for road tolls as part of the UGAs are thus manifold, including fiscal (public transport projects), and they have increasingly been presented as a climate and environmental political tool (Westskog, 2020).

The road toll schemes as presented and introduced as part of the urban growth agreements in 2019 were at the center of popular resistance that emerged across Norway in 2019. During winter and spring that year, new toll rings were established, and toll rates were raised in cities and surrounding urban areas. In relation to these changes, a popular reaction arose, and the issue gained substantial media attention in traditional media channels (Henriksen, 2019) as well as in social media (Wanvik and Haarstad, 2021). Political resistance to road tolls was not, however, a new phenomenon. In 2014, a political party dedicated to opposing road tolls was formed in the Stavanger city district (in Norwegian: *Folkeaksjonen nei til bompenger*). During 2019, protests grew in strength and expanded geographically, with several versions of political parties dedicated to protesting against road tolls established across the country. In the autumn of the same year, they gained 5.8% (Oslo), 16.7% (Bergen), and 9.2% (Stavanger) of votes in local elections in the three largest cities in Norway and 2.4% nationally.

Norway's experience with right-wing populism has primarily been related to the Progress Party, which has combined populism with a right-wing ideology of neoliberalism and anti-immigration rhetoric (Jupskas et al., 2016). The Progress Party formed part of a right-wing center coalition government between 2013 and 2020. The road toll uproar contributed to a government crisis among the coalition parties in government in 2019. According to several media opinion polls (e.g., e24, 2019), the Progress Party lost votes to parties protesting against road tolls in the local elections. The Progress Party obtained its lowest share of votes in any election (local or national) since 1993 and left the government coalition in January 2020.²

2. Previous research on opponents of road tolls

As with most restrictive policy instruments in the transport sector (Drews and van den Bergh, 2016), road tolls are not popular among the public (Börjesson and Kristoffersson, 2015; Eliasson and Jonsson, 2011; Rye et al., 2008). Lack of public support has therefore been suggested as one of the main reasons why such instruments are not adopted and introduced (e.g., Baranzini et al., 2021).

The majority of studies conclude that sociodemographic factors have a much smaller impact on opposition to road tolls than do attitudinal factors (Börjesson et al., 2016; Jaensirisak et al., 2005; Nilsson et al., 2016; Schade and Schlag, 2003; Douenne and Fabre, 1999). Research findings on relationships between sociodemographic factors and opposition to road tolls are less consistent in the literature. One exception is education, mostly found to be positively associated with support for road tolls (Börjesson et al., 2016; Hårsman and Quiggin, 2010; Tvinnereim et al., 2020), while no effect was found by Kallbekken et al. (2013). For age and income, Tvinnereim et al. (2020) find a positive effect on

² Due to a complex set of reasons, the road toll uproar being one of many factors.

acceptance, while Börjesson et al. (2016) find a negative effect. Hårsman and Quiggin (2010) find women to be more supportive than men of road tolls while Börjesson et al. (2016) find the opposite. Eliasson and Jonsson (2011) find that residential areas had only a small effect; with those living in the inner city somewhat more negative than those in the outer suburbs, although this number had a low significance level.

A few studies include environmental and climate concerns. Nilsson et al. (2016) find that biospheric values are associated with a positive attitude to road tolls, as do Kallbekken et al. (2013).³ However, in studies of other restrictive policy instruments in the transport sector, such as fuel taxes, climate concerns are found to correlate positively with support (Douenne and Fabre 2020; Drews and van den Bergh 2016; Rhodes et al., 2015; 2017), also in the Norwegian context (Kallbekken and Sælen, 2011).

Research on attitudes toward climate policies has identified right-leaning political orientation to correlate with opposition to restrictive climate policy instruments (e.g., Smith and Mayer, 2018; Harring et al., 2017; McCright et al., 2016; Drews and van den Bergh, 2015; Harring and Jagers, 2013; McCright et al., 2013). A few studies include this factor and find the same relationship for attitudes toward road tolls (Eliasson, 2014; Hårsman and Quigley, 2010). Börjesson et al. (2016) find that other political attitudes, such as support for equity, positive attitude to taxation in general, and trust in the government, are positively associated with support for road tolls. Christiansen (2018) finds association between opposition to local road tolls and general dissatisfaction with the performance of local

³ Beliefs about environmental effects from road tolls are, however, included in several studies of changes in attitudes toward road tolls, identifying increased support due to changes in beliefs about or experiences of the environmental outcomes of road tolls (Jagers et al., 2017; Eliasson and Jonsson, 2011; Börjesson et al., 2016).

democracy. The link between political orientations and toll roads is underexplored, and we found no studies of the role of populist attitudes in this literature.

Self-interest is operationalized in various ways in the literature on attitudes toward road tolls. Nilsson et al. (2016) find that egoistic values have relatively little impact, whilst strong-value expressive beliefs (e.g., “The congestion tax violates my sense of freedom” and “The congestion tax goes against my values”) and subjective negative individual outcomes render a negative association with congestion charges. Similarly, Fujii et al. (2004) and Jakobsson et al. (2000) find that perceptions of infringement on freedom from tolls impacts negatively on attitudes toward road pricing. Tvinnereim et al. (2020) report that people who commute by private car are less supportive of a time-differentiated toll scheme than others. Winslott-Hiselius et al. (2009) and Eliasson (2014) find that self-interest (car ownership and frequency of paying toll) influences support levels, whereas Kallbekken et al. (2013) find no association between access to transport alternatives to car and attitudes toward road pricing. Börjesson et al. (2016) report that support for the toll charges is influenced by self-interest, measured by variables such as frequency of toll payments (passing toll cordons), value of time, and car ownership, but that these correlations are substantially weaker than those with attitudinal variables.

In summary, we find that analyses of the link between populist attitudes and opposition to toll roads is absent in this literature, and that the role of environmental and climate related attitudes is underexplored. The relatively modest influence of self-interest on attitudes toward road tolls seem to be a general finding across studies. Results for individual sociodemographic variables are mixed, except for education, which is positively related to road toll support. A consistent finding across studies is that sociodemographic variables are not strong predictors of road toll opposition.

3. Right-wing populism and opposition to climate science and policy

3.1. Theorizing the link between RWP and climate science and policy

Populism is often defined as a “thin-centered ideology that considers society to be ultimately separated into two homogenous and antagonistic groups ‘the pure people’ versus the ‘corrupt elite’, and which argues that politics should be an expression of the *volonté générale* (general will) of the people” (Mudde, 2004, p. 543). Its opposites are elitism and pluralism. Being “thin-centered”, it rarely stands alone but tends to be combined with elements from other ideologies, including classic left- or right-wing views. The current “populist phenomenon” is predominantly right-wing (Mudde, 2018), at least in Europe. The prime ideological feature of RWP is xenophobic nativism (Mudde, 2007). RWP is generally climate skeptical about and hostile to climate policy, whereas left-wing populism is not (Lockwood, 2018; Huber, 2020).

The reason why RWP is linked to opposition against climate policy is not well understood, but Lockwood (2018) proposes two different explanations. The first posits that RWP and opposition to climate policy are both caused by structural changes in the global economy. Several authors argue that globalization, automation, and de-unionization have eroded the jobs and incomes of industrial and manufacturing workers, and that RWP has a particular appeal among these “left behind” or “losers of modernisation” (Rodrik, 2018; Ford and Goodwin, 2014; Bornschieer and Kriesi, 2012; Betz, 1994). Many of the sectors affected by these structural changes are also carbon-intensive, so the abovementioned constituency is materially threatened by climate policies. Additionally, the relative hardship already felt by this group generates hostility to taxes in general, including environmental taxes (Lockwood, 2018).

The second explanation draws on the ideological content of RWP and argues that the effect of structural changes on climate policy attitudes is not direct, but rather mediated by RWP ideology. RWP's defining features are largely antithetic to effective climate policy: anti-elitism includes resentment of scientific expertise; xenophobia favors national self-interest over international cooperation; and authoritarianism is the antithesis to social liberalism, which has been linked to support for environmental protection (Inglehart and Norris, 2016). According to the ideological explanation, supporters of RWP see the climate agenda as being espoused by a liberal, cosmopolitan elite, contrary to national interests, and their opposition is an expression of hostility to this group rather than an engagement with the climate issue itself (Lockwood, 2018). They blame mainstream parties and elites for subordinating national authority and interest in international climate cooperation (Fraune and Knodt, 2018). This explanation also encompasses the general idea that elites are corrupted by special interests, represented here by climate scientists and environmentalists. They frequently also construct elites as captured by immigrants. Based on a review of RWP literature, Lockwood (2018) tentatively finds the second explanation most compelling.

3.2. Empirical studies of the link between RWP and climate science and policy

Most extant studies of RWP and climate policy have focused on the supply side, that is, politicians and parties, finding evidence that most RWP parties are strongly hostile to climate policy (Cetkovic and Hagemann, 2020; Forchtner, 2019; Hamilton and Saito, 2015; Gemenis et al., 2012), with stronger hostility in anglophone countries than in continental Europe (Jeffries 2017). However, Selk and Kemmerzell (2021) show that RWP parties can support climate policies given favorable contextual conditions. A case in point is the Austrian Freedom Party, which supports domestic decarbonization

policies, primarily with reference to national energy sovereignty, while still opposing international climate cooperation.

Recent studies have explored the demand side of RWP, demonstrating that populism can also be measured as an attitude among voters (Inglehart and Norris, 2016; Akkerman et al., 2014; Hawkins et al., 2012). A small number of studies have found that RWP attitudes among voters are associated with climate skepticism in continental European countries, the UK, the United States, and Norway (Kulin et al., 2021; Huber, 2020; Huber et al., 2020; Jylhä and Hellmer, 2020; Yan et al., 2020; Krange et al., 2019).

The link between populism and opposition to climate policy instruments – rather than climate science – is, however, less explored. One recent exception is the study by Kulin et al. (2021). They analyze European Social Survey data from 2016 and find that public attitudes consistent with nationalist ideology are clearly linked to voting for RWP parties and that people who hold these attitudes are more likely both to be skeptical about climate change and to oppose increases in taxes on fossil fuels. Nationalist ideology is measured using five items capturing nationalist sovereignty, cultural and economic protection, and national identification and attachment. They find that nationalist ideology is more influential on climate policy attitudes than are left–right ideology, environmental values, and political trust (Kulin et al., 2021).

Another exception is Wanvik and Haarstad's (2021) qualitative case study of the toll uproar in Bergen (Norwegian city) in 2019. They argue that this protest reflects resistance not only to road tolls but also to the wider discourse on sustainability transformations, which are perceived to favor and endorse urban lifestyles at the expense of suburban, car-dependent lifestyles. They find that the rhetoric runs

deeper than road tolls, portraying a divide between the politicians and the people whom they ignore and leave behind, thus displaying Mudde's (2004) defining feature of populism. Further, the authors conclude that the revolt cannot be explained by increases in economic costs but also reflects a perception of such policies to be created by "a particular social group, the politicians, the elite, who ignore, or perhaps even actively work against, suburban populations", which supports Lockwood's (2018) conclusion of the ideological explanation as most convincing. Their study does not single out the right-wing variant of populism, for which the strongest link to climate positions has been found in the literature (see above). It refers to "right-wing suburban dwellers" but does not touch on the defining feature of right-wing populism (Mudde, 2007), namely xenophobic nativism.

4. Data and methods

4.1. The sample

The data analyzed in this study come from the 2020 wave of a web-based annual survey (CICERO's climate survey) containing questions about climate-relevant behaviors, norms, attitudes, and beliefs. In the 2020 survey, we included three additional items to the basic survey for the purpose of this analysis, one on attitudes toward road tolls and two questions on RWP. These items were included in a version of the survey sent to a random half of the respondents. Data were collected in cooperation with Kantar Norway, which samples participants from their ISO-certified standing panel. 10,895 residents of Norway, 18 years old or older, were contacted during February–April 2020. Kantar used an interactive procedure for the sampling, stratifying invitations to participate over time to secure a sample that is representative of the adult Norwegian population. A final sample of 4,031 completed the survey. About half (N=2029) of the final sample answered the survey version with our items of interest, and

our analyses are based on this sample. There is an overrepresentation of older age groups and of respondents with higher education in our sample, whereas gender and geographical distribution follow the population statistics (See Table 1).

Table 1: Demographic profile of our sample (N = 2029).

	Our sample	National statistics 2020*
Gender	F:47.95%, M: 52.05%	F:49.6%, M:50.4%
Age	18–45 years: 58.25%	16–45 years: 53.2%
Higher education (university degree)	43.51%	35.3%

*Data retrieved from Statistics Norway (2021).

Following the requirement of the Norwegian Centre for Research Data, the invitation to participate in the survey mentioned that it was “about climate and the environment”. This could have made “pro-environmental” respondents more inclined to participate. Our sample contains a small overrepresentation (1.1 percentage points) of voters for "green" parties compared with the local election in 2019. However, an overrepresentation of “green” voters of at least this size is common even in surveys *without* an environmental theme. More importantly, such overrepresentation does not seem to bias estimates of relationships between environmental attitudes and other variables significantly, as documented by Hellevik (2016) in a thorough analysis of sampling biases in the biannual Norwegian survey Norsk Monitor.

4.2. Outcome variable

The outcome variable, opposition to road tolls, is operationalized by asking “How positive or negative are you to road tolls?” (response alternatives were: “very negative”, “quite negative”, “neither

negative nor positive”, “quite positive“, and “very positive”). Higher scores imply negative attitudes, or opposition for short.

4.3. Explanatory variables

In most cases, and when nothing else is indicated, respondents are asked to rate how statements match with their opinion on a 5-point scale ranging from 1 (Does not match at all) to 5 (Matches very well).⁴ To measure populist attitudes, we use an item developed by Hawkins et al. (2012), which reads: “The people, and not the politicians, should make our most important policy decisions.” Using principal component analysis, Akkerman et al. (2014) found this item to be the most relevant in defining an underlying populist attitude among a total of eight items that were derived from Mudde’s (2004) abovementioned definition of populism. The statement reflects the idea that there is a division between the politicians (the elite) and the people, and that politicians do not represent the true will of the people (Akkerman et al., 2014).

Because many argue that concerns about immigration are the clearest expression of RWP (e.g., Betz, 1994; Inglehart and Norris, 2016), we included an item from the Norwegian Election Survey (Statistics Norway, 2017) that reads: “It is important to me to be free of prejudices against immigrants.”

Responses are measured on the same scale as above. In the analysis, responses are reverse coded, so that higher values imply more negative attitudes toward immigrants, or Xenophobia for short. Viewing Populism and Xenophobia as the most important dimensions of RWP, we expect both to be positively correlated with road toll opposition.

⁴ This response scale was used instead of the traditional Likert agree–disagree scale due to the problem of yea-saying (Krosnick and Fabrigar, 2001). Survey experiments have shown that the scale we use has less acquiescence effect on the responses than the agree–disagree scale (Hellevik, 2020).

We construct “climate skepticism”⁵ in line with previous research (e.g., Poortinga et al., 2019) using three items asking respondents to what extent they believe: i) that the earth’s climate is changing (trend), ii) that it is human-caused (attribution), and iii) that it has negative consequences (impact). A principal component analysis (PCA) finds only one latent factor, with strong factor loadings (>0.8) for all three manifest items; see Table 2).⁶ Environmental values are measured utilizing two commonly employed items (e.g., Aardal et al., 2011): whether there is too little emphasis on environmental protection in Norway today, and to what extent the respondent identifies with a person who considers environmental protection and sustainable future for coming generations to be important (on a scale from 1 (Not like me at all) to 6 (Very much like me)). A principal component analysis (PCA) finds only one latent factor, with strong factor loadings (>0.8).

The analysis includes variables capturing self-interested reasons for opposing road tolls. The dummy variable Fossil fuel car indicates that the respondent has access to a fossil fuel-powered car (including gasoline-electric hybrid cars. Zero-emission cars are excluded in this variable, as they are exempt from most road toll schemes, and where not exempt, pay a greatly reduced charge. Forms of access are owning, leasing, borrowing, and access to a company car. We created two alternative measures of car reliance. The first is a dummy for individuals whose occupation is work or studies and who stated that they have no alternative to fossil fuel cars for traveling to their place of work or study. Because there is a subjective element in stated lack of alternatives, especially given that zero-emission cars arguably provide an alternative on all commutes in Norway, our imputed alternative version of car reliance is based on combining five more detailed response items relating to travel mode availability for workers

⁶ For comparability with the other attitudinal variables, all the indexes created are scaled so that observations range from 1 to 5.

and students. Specifically, this version tags respondents who stated the following regarding their route to work or study: i) Public transit runs less frequently than twice per hour; and ii) the route is *not* less than 3 km and is suitable for walking; and iii) the route is *not* less than 10 km and is suitable for bicycling. Note that individuals whose main occupation is not work or study are given the value zero under both imputed and stated car reliance.

4.4. Control variables

We include political left–right ideology in our analyses to separate RWP from broader right-wing ideological orientation. We operationalized political left–right ideology using four well-established items (see Table 2) from the Norwegian election survey (Aardal, 2011), measuring position on the role of the state in the economy. A principal component analysis (PCA) finds only one latent factor, with strong factor loadings (>0.6) for all four manifest items. The literature suggests a positive relationship with opposition to road tolls.

Finally, we include some additional control variables based on the literature review, namely age, gender (dummy for female), income, education (dummy for university degree), and rurality. The literature on road toll attitudes gives firm reason for an expected effect for education and not for age, gender, and income. To measure rurality of residence, we use Statistics Norway's classification of municipalities into six classes based on traveling distance to workplace and services (Høydahl, 2020). Household income is measured on an 8-point scale. A sizeable portion of respondents (13%) did not want to disclose their income and are therefore left out of the analysis. Both household income and rurality are treated as continuous variables. All our expectations regarding relationships with road toll opposition are summarized in the last column in Table 2.

5. Results

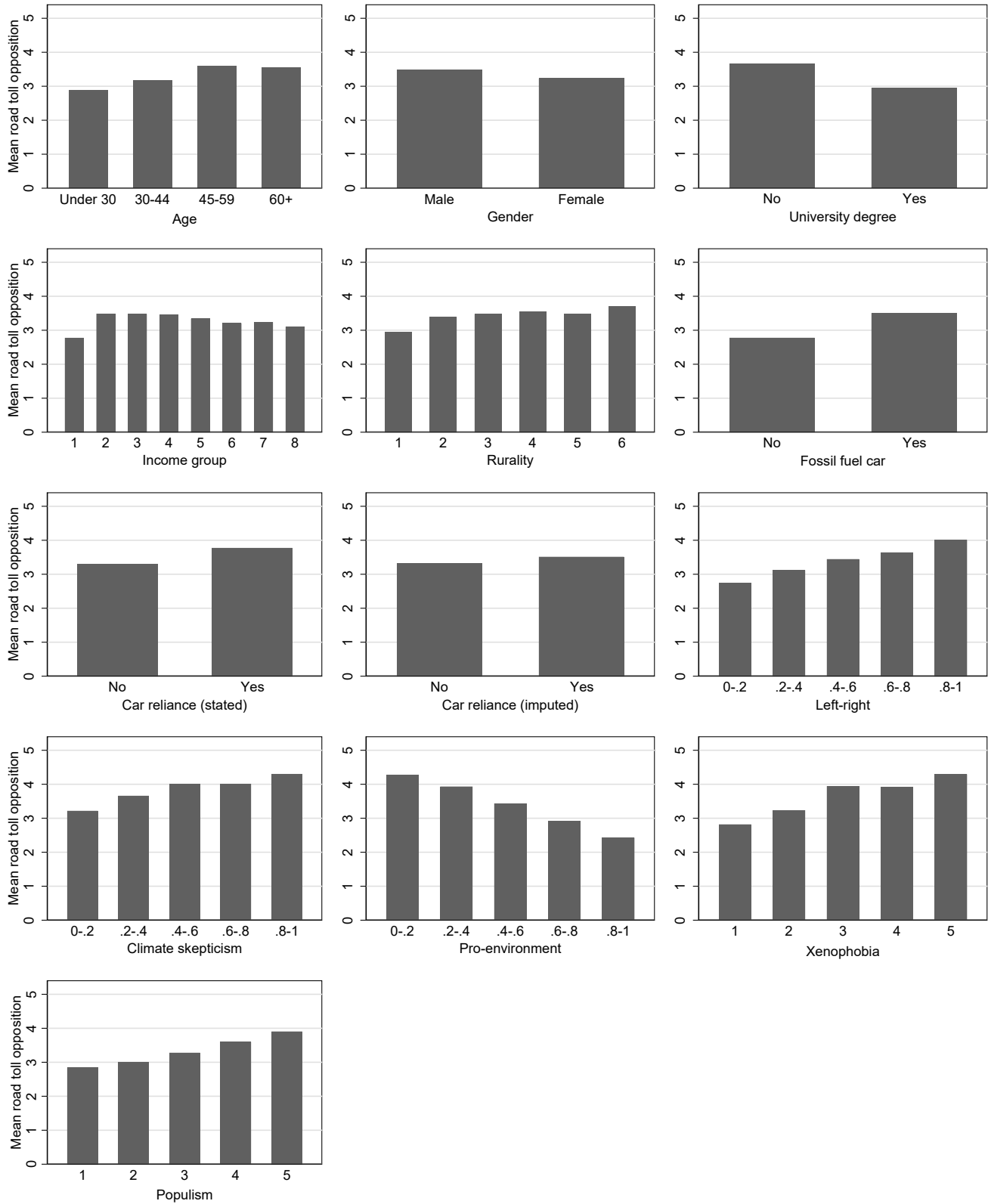
Table 2 summarizes variable definitions and descriptive statistics. Figure 1 displays the mean degree of opposition to road tolls broken down by the explanatory variables. The following sections explore the relationships between the variables.

Table 2: Variable definitions, descriptive statistics, and expected relationship with road toll opposition.

Variable	Definition	Mean	St.dev.	Range	Exp.
Road toll opposition	"How positive or negative are you to road tolls?" Agreement on 5-point scale (low-high).	3.36	1.26	1–5	
Age	Years (continuous)	49.53	16.72	18–90	?
Gender	Female=1, male=0	0.47	0.50	0.1	?
University degree	"What is the highest degree of education that you have completed?" 6 response categories, dichotomized (1=university degree ≤ 4 years or > 4 years)	0.43	0.49	0.1	-
Income	Household income on 8-point scale ¹⁾	4.48	1.84	1–8	?
Rurality	Statistics Norway's classification of municipality of residence from urban to rural on 6-point scale.	2.70	1.35	1–6	?
Fossil fuel car	Access to fossil fuel or hybrid car(s) (dummy)	0.80	0.40	0.1	+
Car reliance (stated)	"There is no alternative to gasoline/diesel car" as travel mode to place of work/study.	0.12	0.32	0.1	+
Car reliance (imputed)	Indicated that 1) Public transit to work/study place runs less frequently than twice per hour; and 2) the route to work/study place is not less than 3 km and is suitable for walking; and 3) the route to work/study place is not less than 10 km and is suitable for bicycling.	0.15	0.36	0.1	+
Political ideology (left–right)	1) "Many tasks would have been carried out better, and at a lower cost, if they were transferred from the state to private actors." 2) "Commercial private schools should be allowed." 3) "Full employment would have been easier to achieve if the state had had more influence over banks and business." [reversed] 4) "There is too much government involvement and regulation in society." [reversed]	2.87	0.94	1–5	+
Climate skepticism	1) "Climate change is happening." [reversed] 2) "Climate change has no negative consequences." 3) "Human activity does not affect the climate."	1.90	0.86	1–5	+
Pro-environment	1) "Far too little emphasis is placed on environmental protection in Norway today." 2) "To what extent do you think this person is similar to yourself? She/he is convinced that people should protect the environment. It is important for her to ensure sustainability for future generations." On a scale from 1 (Not like me at all) to 6 (Very much like me)	3.13	0.97	1–5	-
Xenophobia	"It is important to me to be free of prejudices against immigrants." Agreement on 5-point scale (high–low).	2.16	1.03	1–5	+
Populism	"The people, and not the politicians, should make our most important policy decisions." Agreement on 5-point scale (low–high).	3.16	1.13	1–5	+

1) The household's total annual income: 1 = < 200,000 NOK, 2 = 200,000 – 399,999 NOK, 3 = 400,000 – 599,999 NOK, 4 = 600,000 – 799,999 NOK, 5 = 800,000 – 999,999 NOK, 6 = 1,000,000 – 1,199,999 NOK, 7 = 1,200,000 – 1,399,999 NOK, 8 = ≥ 1,400,000 NOK.

Figure 1: Mean opposition to road tolls across different values for the explanatory variables.



5.1. Correlations

Table 3 and Figure 2 show the pairwise correlations between Road toll opposition and the different explanatory variables. Because Likert-scale and dummy variables do not conform to the assumptions underlying standard correlation analysis (Pearson's r) we additionally compute the non-parametric Spearman's rank coefficient.

All the correlation coefficients are significantly different from zero at a confidence level less than 0.01%, except Car reliance imputed for which the corresponding level is 2%. Notably, the strongest correlations are found with the attitudinal variables Climate skepticism, Pro-environment, Xenophobia, and Left-right, followed by University degree, and the final attitudinal variable, Populism.

Reassuringly, the parametric and non-parametric coefficients are nearly identical, as also found by Norman (2010), who concludes that Pearson correlation is extremely robust to violations of assumptions.

Assessing the (Pearson) correlations among the explanatory variables reveals the strongest relationships among precisely the same variables found to be the five strongest correlates with the outcome variables. These correlations are shown in Figure 3. All other correlations are more modest (not included in the table), with the strongest being between Age and Fossil fuel car (0.27). While the negative correlation between Climate skepticism and Pro-environment is unsurprising, the correlation between both these variables and Xenophobia is more noteworthy and is further explored in section 7.

Table 3: Coefficients of correlation with Road toll opposition.

Explanatory variable	Pearson's r	Spearman's rho
Age	.19	.19
Female	-.10	-.10
University degree	-.28	-.28
Income	-.06	-.07
Rurality	.15	.15
Fossil fuel car	.23	.22
Car reliance (stated)	.12	.12
Car reliance (imputed)	.05	.05
Left-right	.30	.30
Climate skepticism	.41	.42
Pro-environment	-.45	-.45
Xenophobia	.36	.36
Populism	.25	.26

Figure 2: Pearson's r correlation coefficients with Road toll opposition, with 95% confidence intervals

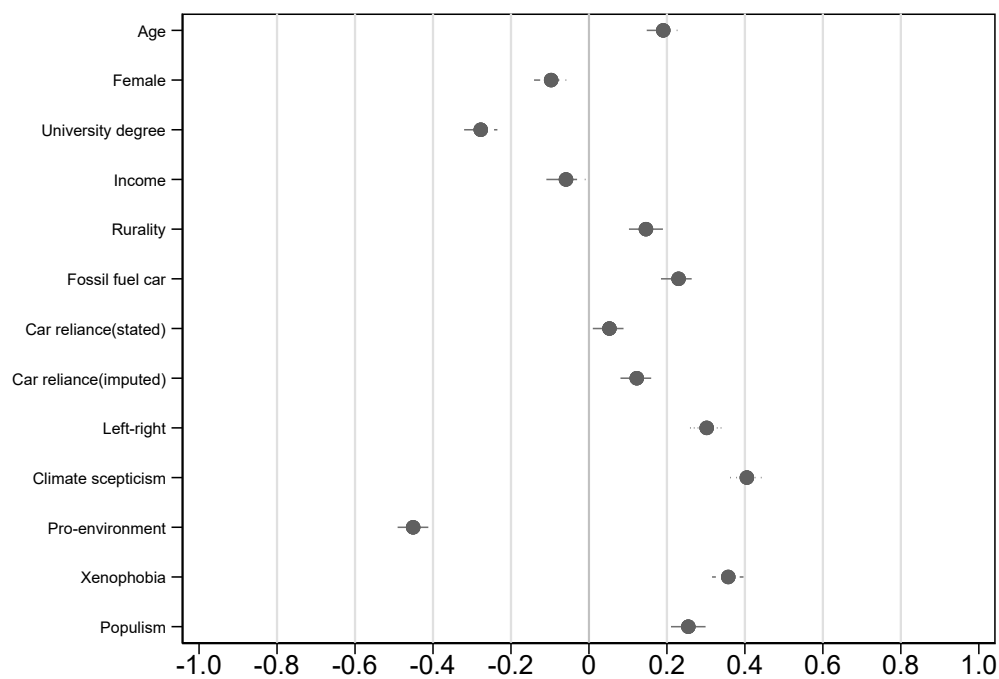


Figure 3: Pearson’s r correlation coefficients among selected explanatory variables.

University degree				
-0.129	Left-right			
-0.282	0.328	Climate scepticism		
0.218	-0.353	-0.516	Pro-environment	
-0.196	0.299	0.416	-0.396	Xenophobia

5.2. Regressions

Table 4 reports the results from ordered logistic regressions that reflect the ordinal nature of the outcome variable. Because the correlation analysis showed that treating our variables as continuous is innocuous, we do so for the Likert-scale explanatory variables instead of the alternative, which is to treat them as categorical through creating dummy variables for each value on the scale.⁷ To ease comparison of coefficients, all explanatory variables are scaled here to range from 0 to 1. Model 1 is the main model, with the other three further exploring the main findings through alternative specifications. A result that stands out from the main model is that all the coefficients for the

⁷ The robustness of Pearson’s correlation analysis used on Likert-scale data can be generalized to regression analysis (Norman 2010).

attitudinal variables are significantly different from zero at a confidence level of less than .01%, as seen from the p-values. Fossil fuel car is significant at the 1% level, while Car reliance is insignificant at the conventional 5% level. For the sociodemographic control variables, the results are more mixed. Age and University degree are both significant at the .01% level, while Gender, Income, and Rurality are insignificant at the conventional 5% level, with p-values between .08 and .50.

The absolute sizes of the coefficients are also large for the attitudinal variables compared with self-interest and the sociodemographic control variables. Because the raw coefficients from logistic regressions have no intuitive interpretation, the fourth column as well as Figure 4 report the marginal effects on the probability of being in the highest response category for the outcome variable (strongly opposing road tolls). This is calculated with other explanatory variables set at their mean values, except dummy explanatory variables, which are set at zero. The marginal effect is the change in probability resulting from a change in the explanatory variable from zero to one, that is from the minimum to the maximum possible value. The results indicate that such a change in the Climate skepticism or Left-right indexes increases the probability for strongly opposing road tolls by 13%, and the corresponding figures are 16% for Populism, 19% for Xenophobia and -31% for Pro-environment. In comparison, the probability increases by 6% from having access to a fossil fuel car and decreases by 4% from having a university degree.

It is particularly surprising that stated lack of alternatives to fossil fuel cars is not a significant predictor of road toll opposition. Model 2 therefore uses an alternative measure of car reliance, imputed as described in the methodology. However, the results are virtually unchanged from Model 1. As a further robustness test, Model 1 was also rerun without Rurality and Fossil fuel car, but Car reliance remains insignificant (not included in Table 4).

The next two models omit all attitudinal variables to investigate the gross effects of the sociodemographic and self-interest variables. The only variable that unambiguously becomes significantly different from zero is Female. This is unsurprising, given that many attitudes correlate with gender. Stated Car reliance also turns significant at the 1% level (Model 3), while the imputed version of this variable is only significant at the 10% level (Model 4). Income is borderline significant at the 5% level, while Rurality is unequivocally not significant. The explanatory power of the model drops substantially when attitudes are excluded. In summary, these models indicate that the self-interest variables and the sociodemographic control variables are not strong predictors of road toll opposition, the exceptions being education and access to fossil fuel cars.

Model (5) in Table 4 includes only attitudinal variables. Remarkably, these five variables explain the variation in toll road attitudes much better than the seven sociodemographic and self-interest variables collectively, and almost as well as the model with all variables, as seen from the pseudo r-squared values.⁸

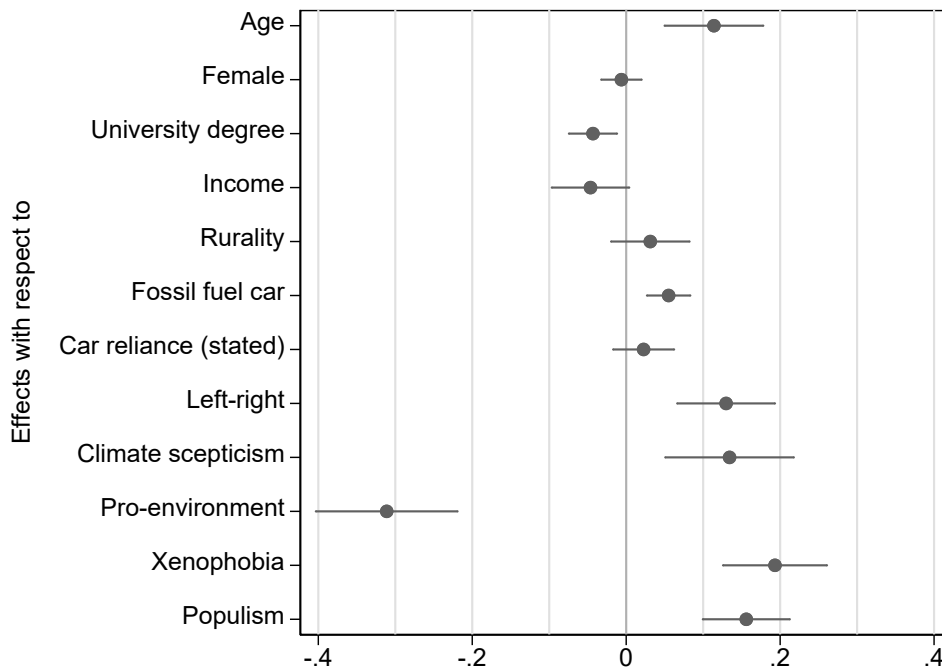
⁸ Note that these values cannot be compared directly with conventional r-squared values from linear models. For example, an ordinary least squares version of Model 1 obtains an r-squared value of 0.34.

Table 4: Results from ordered logistic regressions.

Variable	Model 1			Model 2		Model 3		Model 4		Model 5	
	Coef.	p	dy/dx	Coef.	p	Coef.	p	Coef.	p	Coef.	p
Age	0.87	0.000	.114	0.87	0.000	0.81	0.000	0.77	0.000		
Female	-0.05	0.638	-.006	-0.04	0.657	-0.34	0.000	-0.34	0.000		
University	-0.33	0.002	-.043	-0.33	0.002	-0.76	0.000	-0.77	0.000		
Income	-0.35	0.076	-.046	-0.37	0.065	-0.36	0.051	-0.38	0.043		
Rurality	0.24	0.219	.031	0.22	0.272	0.24	0.185	0.26	0.157		
Fossil fuel car	0.42	0.003	.055	0.42	0.003	0.74	0.000	0.76	0.000		
Car reliance (stated)	0.17	0.263	.022			0.53	0.000				
Car reliance (imputed)				0.15	0.291			0.22	0.098		
Left-right	0.99	0.000	.130	1.00	0.000					0.95	0.000
Climate skepticism	1.03	0.001	.134	1.05	0.001					1.47	0.000
Pro-environment	-2.38	0.000	-.311	-2.38	0.000					-2.48	0.000
Xenophobia	1.48	0.000	.193	1.48	0.000					1.43	0.000
Populism	1.19	0.000	.156	1.20	0.000					1.36	0.000
Pseudo r-squared	0.1376			0.1376		0.0453		0.0429		0.1228	
Observations	1458			1458		1550		1550		1893	

Note: dy/dx denotes the marginal effects on the probability that the outcome variable takes the highest possible value, evaluated with dummy variables set to zero and other explanatory variables set at their mean.

Figure 4: Marginal effects.



The figure illustrates marginal effects of a change in each explanatory variable from minimum to maximum value on the probability of expressing the strongest possible opposition to road tolls, with 95% confidence intervals. Calculations are based on Model 1, with dummy variables set to zero and other explanatory variables set at their mean.

6. Discussion

6.1. Predictors of road toll opposition

We find that climate and environmental attitudes show quite strong relationships with road toll opposition. While the directions of the relationships are as expected, the sizes are notable, particularly for the variable measuring pro-environmental values. We note that for Climate scepticism, the direction of causality could potentially run both ways. Douglas and Wildavsky (1982) propose that some individuals more readily accept scientific information about environmental problems as they accept policies that restrict the activity that causes these problems. Similarly, Kahan (2010) and Campbell and Kay (2014) suggest that climate scepticism may be rooted in aversion to the solutions

associated with climate change. Following this model, people who oppose policies like road tolls would be more likely to express skepticism toward climate change science.

Turning to direct measures of self-interest, people with access to a fossil fuel car are more opposed to toll roads than people without such a car, as expected. However, our measures of *reliance* on cars do not have significant effects. Thus, while access to a car increases opposition, *lack* of access to alternatives does not seem to be an important driver of road toll opposition. Considering our specific survey items on RWP, the connection with road toll opposition is perhaps more apparent for the “thin” Populism item than for the Xenophobia item. As outlined in the introduction, the hotly debated toll rings in Norway are part of a comprehensive political package involving local, regional, and national levels of governments. Thus, the toll rings can clearly be perceived as promoted by “the politicians” and not “the people”. The strong link observed with our item measuring Xenophobia, which focuses on attitudes to immigrants, is less obvious from a theoretical perspective, and is explored in the next section.

Before discussing our key results, we would like to reflect briefly on the outcomes of our control variables. As expected, political left–right ideology relates positively to road toll opposition. However, the effect is smaller than those of Xenophobia and Populism. Furthermore, the effects of Xenophobia and Populism are not sensitive to whether left–right ideology is included or not.⁹ Our results thus support that the effect of RWP attitudes on climate policy views is both stronger than and distinct from the effect of political left–right views. This is consistent with Kulin et al.’s (2021) result for nationalist ideology, which closely resembles our concept of Xenophobia. In line with the literature, the

⁹ The coefficients for Xenophobia and Populism increase by .02 if left–right is excluded from the models.

sociodemographic variables are not strong predictors of road toll opposition. We find no significant effect of gender, and household income is only significant on a 10% level. Education is an exception, being negatively correlated with opposition at 5% level. Nor do we find a significant gradient in opposition along the rural–urban dimension but, as noted above, there may be two opposing effects at work here, with urban areas most effected economically by the specific policy while opposition to climate policy in general is expected to be higher in rural areas. Our results for these variables are partly at odds with common conceptions about road toll resistance in Norway. Wanvik and Haarstad (2020, p. 12) find in their qualitative study of road toll protesters that “[t]here was a real and perceived sense that policies aimed at advancing the ‘green shift’ favor higher income groups and residents in the city center.” Although we find a modest association between income and opposition to road tolls, income and centrality of residence are apparently not key determinants of attitudes to road tolls among the general public.

6.2. Exploring the relationship between attitudes on road tolls, climate, environment, and RWP

What might explain our key results, the strong interrelationships in the nexus between road toll opposition, climate skepticism, lack of pro-environmental values, and RWP attitudes? This question links to the nascent literature seeking to explain the link between RWP and climate policy opposition reviewed in section 4.

The structuralist explanation (Lockwood, 2018) suggests a group of “left behind” who support RWP and oppose climate and environmental policy, with the opposition motivated by economic self-interest. Our data do not support such an explanation. First, as noted above, income is not a significant predictor of road toll opposition. Its correlations with the attitudinal variables are also weak, ranging from .00 to -.12 (not shown). The same results are found also for Rural residence and Car reliance,

which could be other indicators of economic vulnerability to road tolls. The sociodemographic variable with the strongest relationship with the nexus is University degree. Lower-educated workers could be expected to be more vulnerable to road tolls through having less flexible commuting patterns and lower income, but as Car reliance and Income are included separately with no significant effect on road toll opposition, it appears that the effect of education operates via mechanisms other than economic self-interest.

The explanation found more compelling by Lockwood (2018) is based on the ideological content of RWP. Compared with the structuralist explanation, this explanation can better account for the general observation that the constituency of RWP goes far wider than the “left-behind.” Thus, it also appears more promising for explaining the nexus between our attitudinal variables and road toll opposition, which, as shown above, cannot be explained by a group of “left behind” protecting their self-interest. However, the specific link with RWP ideology seems less obvious in the case of road tolls than in for climate policy more generally. Several authors have identified Xenophobia as the ideological basis for RWP climate opposition. Climate policy is typically seen as an issue of international cooperation with benefits beyond national borders, thus subordinating national interests and sovereignty (Fraune and Knodt, 2018; Lockwood, 2018; Forchtner and Kølvråa, 2015). While reducing greenhouse gases is one rationale for recent road toll schemes in Norway, road tolls also serve several other purposes with local benefits, as explained in the introduction. Road tolls are largely a local or national issue without a strong link to national sovereignty, thus the strong relationship with Xenophobia found in this study is more surprising than in the case of other forms of climate policy. Furthermore, as we have controlled for Climate skepticism, the relationship between Xenophobia and Road toll opposition cannot be explained only because of people with nativist attitudes rejecting climate change as a problem *per se*.

A more indirect ideological link, also suggested by Lockwood (2018), may be more compelling in the case of road tolls. According to this explanation, RWP climate opposition is an expression of hostility to liberal, cosmopolitan elites rather than an engagement with the climate issue itself. Westskog et al. (2020) document challenges related to transparency and a lack of local anchoring of the UGA processes in three Norwegian cities. The UGAs involved a new role for the state in local and regional policies, as well as a concentration of power to a small group of decision-makers that included non-elected state representatives. The authors argue that invisible patterns of power in governance processes may nourish the public protest when such protests are grounded in perceived distance to decision-makers. Perceived illegitimate political decisions were at the core of the protesters' arguments, according to Wanvik and Haarstad (2020). They found that the protests in Bergen were based on a perception that road tolls were promoted by a political elite which ignores or obstructs the suburban populations. These authors see the protests as resistance not only to road tolls but also to the wider discourse on sustainable transformations.

Krange et al. (2019) similarly suggest that nativist attitudes and climate skepticism are part of a larger attitude complex among some Norwegians expressing resistance to changing societal conditions, such as immigration and increasing cultural and ethnic diversity. In line with Lockwood's suggestion (2018), they see the link between xenophobia and climate skepticism as a form of identity protective cognition or identity struggle formulated in opposition to the elites' cultural and political ideas. Our results suggest that road toll opposition is also part of this attitude complex and identity struggle, and that so are Populism and lack of Pro-environmental attitudes. Thus, while Xenophobia less obviously provides an ideological grounding for opposing road tolls than for opposing climate policy in general, resistance

to toll roads and to immigration appear to come together as components of the same anti-elitist identity struggle.

7. Conclusion

In this study we explore the predictors of opposition to road tolls among the Norwegian public using survey data of around 2,000 Norwegian respondents. The strongest predictors are attitudes relating to climate change, the environment, and right-wing populism. In line with the literature, the sociodemographic variables are not strong predictors, and the same is found for lack of alternative transport modes, while owning a car does predict increased opposition. Our results suggest that these attitudes and opposition to toll roads are components of an anti-elitist identity struggle, linking to recent literature suggesting that right-wing populists display particular resistance to climate-related policies.

This study thus corroborates Kulin et al.'s (2021) recent finding that nationalist ideology is a strong and consistent predictor of climate policy attitudes. Future work should broaden the scope relative to the current analysis, both geographically and to other policy instruments. First, in which contexts does opposition to climate change and other environmental policies become part of an anti-elitist identity struggle? Selk and Kemmerzell (2021) argue that RWP is inherently context-relative, and find substantial cross-country variation in RWP parties' climate policy positions. The geographical generalizability of our results is important to investigate, given that Kulin et al. (2021) found that the link between nationalist ideology and climate attitudes is particularly strong in Norway, followed by other western European countries, at the same time as nationalist ideology is strongest in eastern Europe. Second, to the extent that the anti-elitist identity struggle involves climate policy more

generally, other climate policies may meet serious public opposition as a result. Future research should therefore pay attention to the link between nationalist ideology and resistance against a wider repertoire of climate policies.

Our results are moreover consistent with the argument that RWP climate opposition can be seen as an expression of resistance to liberal and cosmopolitan elites rather than hostility toward the climate issue itself (Lockwood 2018). Therefore, the legitimacy of climate policies among this group might be increased if the issue can be framed in ways that disassociates it from these elites. Hence, a particularly policy-relevant question for future research is how to facilitate more inclusive climate policy debates, bringing in those who feel left out of political debates, for the policies and instruments to be both efficient and legitimate.

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