

Why do Lonely People Show Less Political Solidarity Towards Others? Novel Comparative Survey Evidence from Seven European Countries in 2026

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Abstract:

The high prevalence of loneliness gained renewed attention during and after the COVID-19 pandemic. Loneliness has been shown to have negative social consequences, such as poorer physical and mental health and reduced social trust, but its impact on political attitudes towards the state is underexplored. Loneliness negatively correlates with political solidarity, the individual willingness to support public redistribution in favour of other people. This paper answers the question of why by presenting a novel comparative random-sample online survey of seven European countries with different welfare states (DE, ES, FR, HR, IT, PL, SE) in 2026. First, we analytically describe patterns of loneliness and political solidarity across nations and test three pre-registered micro-level mechanisms of increased threat perception, resulting in lower social and political trust as well as outgroup hatred. We demonstrate with linear path models that loneliness has by far the strongest negative effect on political solidarity via decreased institutional trust with a total effect of -10% of the full-scale range. Across all paths, loneliness has a total effect of 26% of the full-scale range. Finally, we discuss the implications for personal costly sacrifice for others in times of welfare states under strain.¹

¹ The authors employed a large language model (Mistral Large 675B Instruct 2512) to assist with the grammatical and spelling proofreading of the manuscript, using the prompt "You are a professional academic proofreader. Please proofread all paragraphs I input for grammatical errors or spelling errors in British English. Please do not correct clarity or conciseness and leave citations and direct quotes untouched. Also don't edit word choice.". The AI was used solely for technical editing of language in accordance with British English conventions; it did not influence the study design, data analysis, interpretation of results, or the substantive content of the paper. All substantive revisions and final approvals were performed by the authors.

“What prepares men for totalitarian domination in the non-totalitarian world is the fact that loneliness, once a borderline experience usually suffered in certain marginal social conditions like old age, has become an everyday experience of the evergrowing masses of our century.”

Hannah Arendt. (1973 [1951]). *The Origins of Totalitarianism*, New York: Harcourt Brace Jovanovich, 478.

Loneliness is an everyday experience that many people across Europe have sporadically or regularly. Its social consequences are well researched, but not its political consequences. Hannah Arendt writes about the potential of loneliness to make people more open to totalitarian politics. In our paper, we analyse its associational paths with support for other-regarding public redistribution that we call political solidarity.

Loneliness is commonly defined as an “unpleasant experience that occurs when a person’s personal network of social relations is deficient in some important way” (Perlman and Peplau 1981). Loneliness is a psychological, discomforting state of mind that was advantageous during human development to make people join social groups and to survive as a collective entity. Loners were simply more likely to die (Cacioppo and Cacioppo 2018).

Nowadays 12-13% of adult Europeans feel very lonely in society, and a further 36-40% feel at least slightly lonely (Mauri et al. 2024). These individuals feel isolated from others in their everyday social world. The associations with social phenomena are negative: the lonely are more likely to be poor, sick, and egoistical (Malon et al. 2024; Schnepf, d’Hombres, and Mauri 2024).

Governments around the world increasingly recognize the threat of loneliness. For instance, the United Kingdom and Japan both appointed ministerial positions to tackle loneliness in 2018 and 2021, respectively. The Swedish and German governments implemented national loneliness strategies, and supranational organizations like the WHO have launched initiatives to research and combat loneliness. This increase in attention to loneliness is no doubt also due to the surfacing evidence that loneliness is not only a public health threat, but also poses serious challenges to social cohesion and political participation in democratic societies (Heinze and Lewandowsky 2026; Langenkamp, Schmidt-Catran, and Schobin 2025; Van Den Broek and Lam 2026).

What we do know is that the welfare state can alleviate some of the origins of loneliness by redistribution, for instance by keeping people out of poverty or providing infrastructure that is conducive to social exchange (Langenkamp, Mund, and Hawkey 2024; Nyqvist, Nygård, and Scharf 2021; Swader and Moraru 2023). What we *do not know* is how loneliness among citizens may impact the welfare state

itself. This paper is about one of the channels of influence on the welfare state, namely the fundamental attitudes towards political support of the welfare state.

More concretely, our analysis is about the negative association of loneliness with political solidarity, the willingness to support public redistribution that favours other people. Lonelier people are less likely to show political solidarity. As we will show, the bivariate relationship between loneliness and political solidarity is moderately negative, but it becomes strongly negative once we also control for income. We test three different mechanisms that can link loneliness with political solidarity: heightening threat perception - loneliness decreases social and institutional trust as people grow more suspicious of social threats, a positive predictor of political solidarity; increasing outgroup hatred - loneliness increases anti-immigration attitudes as a consequence of heightened social threat awareness, a negative predictor of political solidarity; growing egoism: loneliness has a residual direct effect on political solidarity that is explained by an increased attention to short-term selfishness. We model these indirect relationships in linear path models, demonstrating that the largest effect of loneliness on political solidarity goes through institutional trust and that, once these indirect paths are modelled, no residual effect of loneliness remains.

Why is the nexus between loneliness and political solidarity relevant for social policy research? European liberal democracies are under increasing pressure. Citizens demand high levels of services and extensive state activity; finances are becoming difficult with a shrinking and ageing population. Such times require difficult political decisions that need citizens to be willing to support other citizens by public redistribution. Citizens in a state with extensive state activities need to support public policies that they themselves are not benefiting from. They may well benefit from them in the future or indirectly through their family networks, but in the short-term citizens do not have a direct self-interest in them. If the state under strain now needs more people to be supportive of others, how does that square with such a high number of lonely people? If worse comes to worst, a Europe of lonely people with overburdened welfare states will be much less likely to reform its welfare states, and increasing public service dissatisfaction will play into the hands of populist parties (Goerres and Vail 2026). These parties may scale back democracy as we know it to effectively realise the prediction of Hannah Arendt from 1951.

2. Theoretical Framework: Loneliness as a Danger to Political Solidarity

We suggest a model of the loneliness-solidarity nexus that has three key components: (a) lower social and political trust, (b) greater outgroup hatred, (c) stronger egoistical behaviour and egoistical perspective-taking. Finally, we will demonstrate how these components do not contradict one another and are mutually compatible. This will

then allow for a strategy of comparative model-testing in an additive theoretical framework.

2.1 Mapping loneliness and political solidarity

While liberal democracies in Europe face crises leading to lower tax revenues and a growing population of people dependent on the welfare state through population ageing, the public demand for welfare funding remains stable (Kumlin, Goerres, and Spies 2021). To reconcile public demand with precarious funding, welfare states have to increase their income by increasing taxes and contributions to welfare schemes. This increase in tax burden for their citizens relies on a certain level of willingness to shoulder these burdens. Starting from this problem definition, we call this willingness of citizens to shoulder costs for public redistribution, even if they might not immediately benefit, political solidarity (Goerres 2021). An individual's political solidarity is dependent on various factors, ranging from individual-level variables such as material self-interest (Alesina and Giuliano 2011), risk preferences (Gärtner, Mollerstrom, and Seim 2017), political attitudes and personal values (Steele and Breznau 2019), social and institutional trust (Rothstein 2011; Svallfors 2013), ingroup identity and outgroup attitudes (Goerres, Karlsen, and Kumlin 2020), personality (Heide-Jørgensen, Dinesen, and Sønderskov 2023) to various institutional and macro-level variables.

Conversely, loneliness cannot be understood as an attitude, but rather a complex emotional and cognitive state rooted in evolutionary psychology. Loneliness is most commonly defined as an “unpleasant experience that occurs when a person's personal network of social relations is deficient in some important way, either quantitatively or qualitatively [...]” (Perlman and Peplau 1981). This definition highlights two central characteristics of loneliness: First, it is a subjective condition that differs from objective social isolation (Weiss 1973). Thus, loneliness differs from social isolation or “being alone” as it is not observable from the outside. Second, in contrast to social isolation, loneliness is a distinctively negative experience. Positive connotations of “being alone” found in certain historical or cultural contexts are thus explicitly excluded from the psychological definition of loneliness and are not measured by psychometric loneliness scales. Theoretical reasoning about the effects of loneliness is thus guided by the strictly negative character of the loneliness experience.

As noted above, loneliness is a very common human experience that is widespread across European countries. This being said, the “loneliness epidemic” often cited in the media is not empirically supported, as studies find mixed results with regard to overall increases of loneliness over time (Surkalim et al. 2022a). However, research nonetheless shows a distinct change in the distribution of loneliness within society in the past decades. Whereas loneliness for a long time was mainly associated with the

elderly, young people are becoming increasingly more lonely (Buecker et al. 2021; Twenge et al. 2021). A recent meta-analysis over 43 years identified an average increase in loneliness among people under 30 of 0.6 standard deviations (Buecker et al. 2021).

The COVID-19 pandemic has additionally amplified this trend, with studies indicating an overall increase in loneliness during the pandemic (Ernst et al. 2022; Su et al. 2023). Ernst et al. report a standardized mean difference of 0.3, reflecting a small but consistent increase in loneliness across studies (Ernst et al. 2022). This increase was even more dramatic for younger people, with a recent European study estimating that people under 40 were on average 0.2 standard deviations more lonely than people between 40 and 64 and 0.4 standard deviations more lonely than people 65 and above during the pandemic (Rebecchi et al. 2024). Studies monitoring these developments long-term after the pandemic are, so far, to the best of our knowledge, not available. Additionally, it remains to be studied how the rise of new technologies like generative AI chatbots will impact these trends, as current evidence is mixed with studies reporting both positive and negative correlations with loneliness (Dong, Xie, and Gong 2025).

2.2 Implied causal mechanisms at the micro level

In evolutionary psychology, loneliness is conceptualized as an adaptation to the benefits of living in social arrangements (Weiss 1973). In this branch of literature, loneliness is consequently described as a warning signal that alerts individuals to current or impending social isolation (Cacioppo et al. 2006). The intensely negative feeling is thought to motivate individuals to repair, re-establish or form new social relationships. However, loneliness additionally carries some side effects that protected individuals in the past but are maladaptive in modern society.

First, indiscriminate social openness in the pursuit or repair of social relations exposes individuals to considerable vulnerabilities, such as exploitation, coercion, or betrayal. To shield lonely individuals from these vulnerabilities, evolutionary psychological theory thus postulates that loneliness increases vigilance in social situations (Cacioppo and Cacioppo 2018, 137). Psychological research supports this claim, as multiple studies show that lonely individuals are more alert to negative social stimuli and interpret them more negatively (Lam et al. 2021; Spithoven, Bijttebier, and Goossens 2017). This negative social bias is empirically linked to worse perceptions of society at large: various studies link loneliness to lower social trust (Langenkamp 2023; Langenkamp and Stepanova 2024; Stepanova, Alt, and Hopfensitz 2024; Yang 2019), lower institutional trust (Bundesministerium für Familie, Senioren, Frauen und Jugend 2024; Langenkamp 2023; Yang 2019), stronger perceptions of societal conflicts

(Langenkamp, Schmidt-Catran, and Schobin 2025, 13) and more social pessimism (Van Den Broek and Lam 2026).

Social and institutional trust are both theoretically and empirically linked to political solidarity. Individual solidarity depends on the perception of other citizens as worthy targets of redistribution that reciprocate contributions to the welfare state (Rothstein 2011) and the perception of institutions of the state as fair and effective (Svallfors 2013). Multiple empirical studies corroborate these arguments (Busemeyer 2022; Garritzmann, Neimanns, and Busemeyer 2023).

Thus, as loneliness is empirically and theoretically linked to lower social and political trust, we expect two mediated effects of loneliness on political solidarity:

The negative association between loneliness and the index of willingness to pay for redistribution is partially attenuated through social trust that is negatively associated with loneliness and positively with willingness to pay (H1.1).

And:

The negative association between loneliness and the index of willingness to pay for redistribution is partially attenuated through institutional trust that is negatively associated with loneliness and positively with willingness to pay (H1.2).

Another consequence of the increased social threat perception on political attitudes concerns negative perceptions of social outgroups by lonely people. Hannah Arendt linked this aspect of loneliness to what she defined as “negative solidarity”, internally solidary communities defined by strict group boundaries and the exclusion of non-members (Arendt 1951). More recent studies in psychology and political science support this claim: Floyd links loneliness to xenophobia and right-wing authoritarian attitudes (Floyd 2017). Two studies by Langenkamp and Bienstman, and Peterson et al. link loneliness to voting for populist radical-right parties, both citing the perception of threats from non-native populations as explanations (Langenkamp and Bienstman 2022; Peterson et al. 2025). Furthermore, various other studies link related concepts of social exclusion to political radicalization and populist radical-right support (Langenkamp 2025).

Negative outgroup attitudes are also strongly linked to political solidarity. Literature on the effects of immigration on support for redistribution argues that individuals who hold negative attitudes towards immigrants are less likely to support redistribution in general. The negative attitude towards redistribution in general is rooted in the view that redistribution disproportionately favours immigrants or ethnic minorities (Alesina, Miano, and Stantcheva 2018; Steele and Breznau 2019).

As anti-immigration attitudes are linked both theoretically and empirically to loneliness and low solidarity, we expect that:

The negative association between loneliness and the index of willingness to pay for redistribution is partially attenuated through an index of anti-immigration attitudes that is positively associated with loneliness and negatively associated with willingness to pay (H2).

Besides increasing social threat awareness, the evolutionary psychological model of loneliness implies a second maladaptive trait of loneliness. The model argues that loneliness leads individuals to focus more strongly on their short-term survival, thereby increasing self-interest motivations and consequently strengthening egoistical behaviour in situations where no immediate social benefit is expected (Cacioppo and Cacioppo 2018). Empirical studies engaging with this argument further contextualise this claim: Bellucci's survey data show that lonely people indicate slightly more prosocial behaviours in potentially socially rewarding contexts like helping or support within their immediate social network (Bellucci 2020). However, other studies come to opposite conclusions: Jolley et al., for example, link loneliness to an increased likelihood of participating in tax evasion by employing behavioural measures (Jolley, Paterson, and Thomas 2023). Similarly, Malon et al. identify an overall moderately negative correlation between loneliness and various prosocial measures in their meta-analysis (Malon et al. 2024). Contextualizing this mixed evidence, Huang et al. show differing effects of loneliness on prosocial behaviour depending on context, with loneliness increasing prosocial behaviour in non-public situations but decreasing it in public situations (Huang, Liu, and Liu 2016).

Self-interest motivation is a strong predictor of political solidarity as well. Following the rational-choice argument commonly made in political economy, individuals who are strongly motivated by self-interest will support redistribution only if it benefits themselves more than it costs them (Alesina and Giuliano 2011). As we define and measure political solidarity as shouldering costs that do not necessarily benefit individuals in the short term, and income or wealth redistribution is a distinctively non-public situation. As our data does not allow us to model a mediation through increased selfishness, we expect a residual direct effect that we explain by increased selfishness:

Loneliness exerts a direct negative effect on the index of willingness to pay for redistribution, even after controlling for the mediations through social and institutional trust and anti-immigration attitudes (H3).

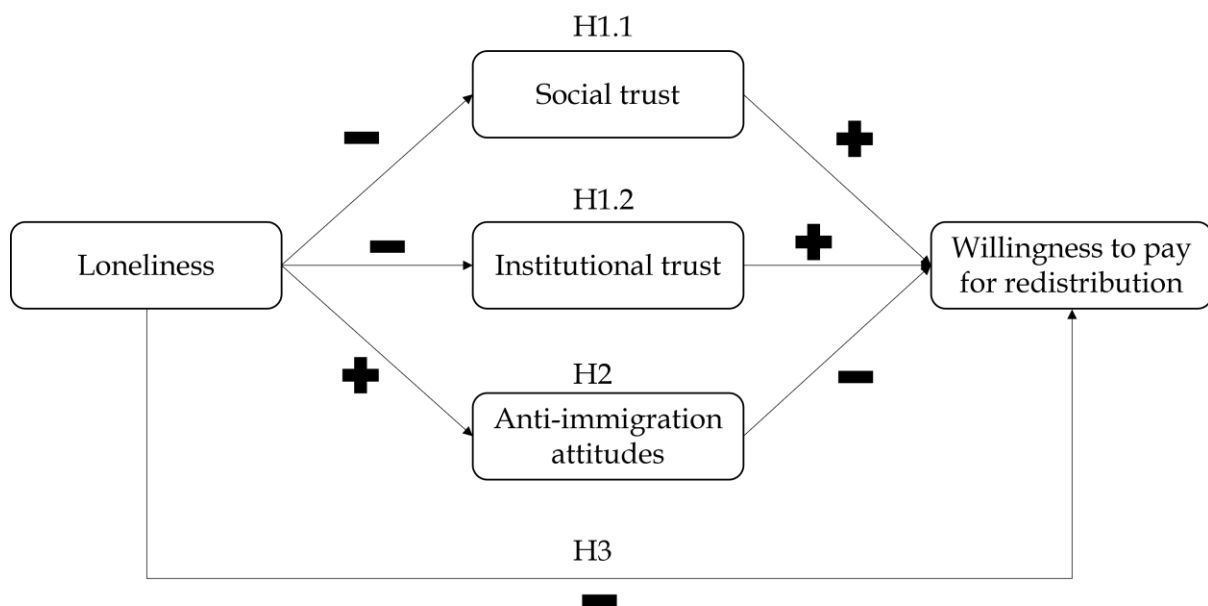
The negative impacts of loneliness on prosocial behaviour are especially associated with chronic loneliness, i.e. loneliness that persists for longer periods of time (Archer Lee et al. 2022). As our cross-sectional data do not allow inference about whether

participants are chronically or only transiently lonely, this likely biases or estimates downwards.

2.3 The complementarity of the implied causal mechanisms

The above-discussed cognitive effects of loneliness are all part of the same coherent theoretical model. They act concurrently and influence the political attitudes and behaviour of lonely individuals through different mechanisms. Figure 1 demonstrates our proposed theoretical model. We do not expect substantial differences in effect sizes, as all pathways are based on the same psychological model of loneliness and are supported by research both on the political effects of loneliness and the determinants of political solidarity.

Figure 1: Proposed theoretical model of loneliness and willingness to pay for redistribution



3. Methods and Data

To test our theoretical model, we estimate linear path models on novel cross-sectional survey data from seven European democracies collected in the “Panel Survey of European Solidarity” (PEPSY). Data were collected by Ipsos between February and April 2026 as part of the ERC-funded “POLITSOLID project” (Grant No. 864818).

3.1 Data Collection

Participants were recruited from members of “Ipsos’ KnowledgePanel Europe” in Croatia, France, Italy, Poland, Spain and Sweden as well as from the Infas Mastersample in Germany and were all above the age of 18. Ipsos translated the survey into the local languages of all seven countries and pretested it in their local

contexts. A probability-based sample of these countries was selected using stratified random sampling stratified by age, gender and education. For Germany, Ipsos employed disproportional sampling, oversampling individuals living in the former East German states and Berlin. Therefore, we treat the two former German states as two distinct countries in our analysis. Of 17,413 sampled participants, 7,784 participants completed the survey, resulting in 530 (former East Germany) to 1,085 (Croatia) cases per country. Respondents could participate via web self-completion (CAWI) or alternatively, via telephone (CATI). Interviews took 21 minutes on average, and participants were offered an incentive by Ipsos on completion. The dataset is weighted to adjust for the different selection probabilities and responses of participants so that estimates are representative of the target populations of all sampled countries.

3.2 Operationalisation

Our main dependent variable, the willingness to pay for public redistribution as a proxy for general political solidarity, is measured using a mean index of three items asking whether participants would be willing to pay for public services and benefits for people even if they do not benefit themselves (*“Even if I don't benefit from them myself, I am willing to pay for public services and benefits for people in ...”*) in their own village or town, their country and in other countries in the European Union. Participants could answer on a five-point scale ranging from “Disagree Strongly” to “Agree Strongly”. The index proves to be highly reliable, with a standardised Cronbach’s alpha of 0.89.

For our main independent variable, loneliness, we employ a three-item version of the UCLA loneliness scale developed by Hughes et al. (Hughes et al. 2004). Participants are asked how much of the time they feel they lack companionship, left out, or isolated and can answer “Often”, “Some of the time” or “Never”. The items are then inverted and added together, resulting in a score between 3 and 9. We subtracted 3 from this index to scale it between 0 and 6 for better comparison. The instrument has been empirically validated to reflect the original 20-item scale (Gosling et al. 2024) and is among the most commonly used loneliness measures in large-scale surveys such as the *UK Understanding Society panel*, the *German Socio-economic Panel* and the *European Survey of Health, Ageing and Retirement in Europe* (Mauri, Barjaková, and Berlingieri 2024). A standardised alpha of 0.79 suggests acceptable reliability in our sample.

To test our mediations, we include a covariate for social trust (measured by the answer to the question *“Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?”* on an 11-point scale, recoded so higher values indicate higher trust) and an index each for institutional trust and anti-immigration attitudes.

We measure institutional trust as the mean of two 11-point trust ratings of the public municipal authorities and the national government of one's country (*"The next questions ask how much you personally trust different institutions. 1 means you do not trust an institution at all, and 11 means you have complete trust. How much do you personally trust ..."*).

The index for anti-immigration attitudes is a mean index of three items towards immigration: one regarding immigration for economic reasons (*"To what extent do you think [country] should allow people who are needed in the [country's] economy to come and live here?"*, 4-point scale from "Allow none" to "Allow many to come and live here"), one regarding forced immigration (*"To what extent do you think [country] should allow people who are forced to leave their country because of armed conflict or persecution to come and live here?"*, 4-point scale from "Allow none" to "Allow many to come and live here") and one regarding the cultural impact of immigration (*"Would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?"*, 10-point scale from "Cultural life undermined" to "Cultural life enriched", rescaled between 1-4 before index construction). This index was inverted to reflect negative attitudes towards immigration and has acceptable reliability with a standardised alpha of 0.79.

Additionally, we control for participants' age, gender, household income in deciles and education.

3.3 Analytical Strategy

To address missing data by item nonresponse, we perform listwise deletion on rows with data missing on variables of interest. The only exception to this is the income variable, which is missing for 876 participants. In order not to exclude these participants from the analyses, we opted for imputing missing income values using a regression-based approach modelling income per country as a function of age, gender, education and a question on financial resilience from the survey and to substitute the predicted values. We additionally construct a binary flag indicator denoting rows with imputed income values that we included in all multivariate models. All other missing values were deleted listwise.

To test our hypotheses, we estimate linear path models on our solidarity index. We estimate four path models: first modelling each path of our theoretical model one by one, as well as an additional model including all three mediation paths. For better comparison of effect sizes, we rescale all independent variables in the multivariate models between 0 and 1. To adjust for the non-normality in our data, we estimate these models using a robust maximum likelihood estimator (Gana and Broc 2018).

All hypotheses were preregistered before data collection on OSF (<https://osf.io/y6msn/>).

3.4 Approach to causality

The theoretical model we test implies a causal relationship between loneliness, social and political trust, anti-immigration attitudes and political solidarity. Since we use cross-sectional data with no experimental or quasi-experimental design features, we cannot test the causal effects directly, but we can only test the implied observational implications of those effects.

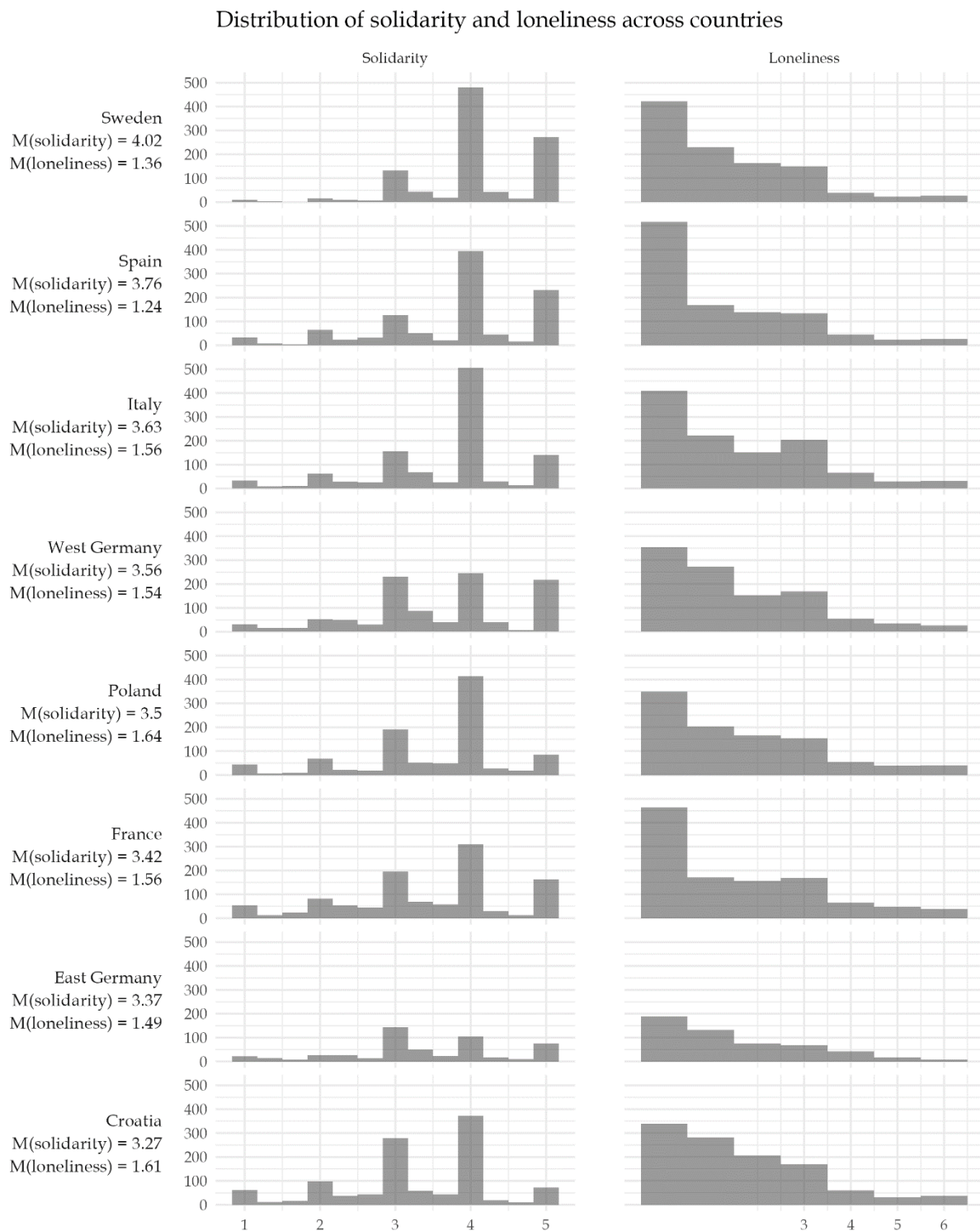
At the same time, we analyse plausible alternative explanations, as there could be an underlying factor of misanthropy that both lowers solidarity and causes loneliness. Similarly, there might be reciprocal causality, where lower solidarity also leads to increased loneliness and vice versa.

However, in sum, we cannot fully rule out reverse causality (political solidarity ==> loneliness) or, what is more plausible, a reciprocal, dynamic causal relationship (Loneliness ==> political solidarity ==> loneliness ==> political solidarity). Our study should therefore not be interpreted as direct causal evidence, but as observational evidence supporting a plausible theoretical model. Future research will have to investigate the causality of this mechanism.

4. Empirical Results: Three Indirect Causal Paths

Descriptively, we see an unequal distribution of both loneliness and willingness to pay for redistribution across the countries in our sample as Figure 2 indicates. Willingness to pay for redistribution ranges from 3.3 in Croatia to a maximum of 4 in Sweden, being lowest in the former communist states and France. Considering the range of the index between 1 and 5, though, the average population in all countries is slightly favourable towards paying for redistribution, as the distribution in figure 2 indicates.

Figure 2: Distribution of solidarity and loneliness across countries in the PEPsy sample, ordered by mean solidarity



Conversely, loneliness is skewed towards lower values. It ranges from a minimum mean of 1.2 in Spain to a maximum mean of 1.7 in Poland. Loneliness is relatively equally distributed in the countries of our sample (the patterns differ at the regional level), except for Spain, Sweden and East Germany, whose populations are on average

considerably less lonely than those in the other countries. The country means we observe in our study generally fit the distributions identified in other studies, with Northern European countries being generally lower in loneliness and Eastern European countries being more strongly affected (Surkalim et al. 2022b). Notwithstanding, no country has an average population that could be regarded as lonely according to typical cut-off values researchers employ when dichotomising the UCLA short-scale (Gosling et al. 2024). Our findings mirror similar findings of a 2022 EU-wide loneliness study (Berlingieri et al. 2024).

Figure 2 additionally indicates that there is a negative bivariate correlation between country means, especially driven by Spain and Sweden, which have on average the most willing to pay and least lonely populations. Conversely, countries like Poland, France or Croatia are both, on average, low in willingness to pay and high in loneliness. East Germany is somewhat of an outlier when looking at the country means, as it has the second-lowest average willingness to pay but the third-lowest loneliness. On an individual level, this correlation is also present and statistically significant, although moderate at -0.1. See appendix table 3 for a correlation matrix of all variables.

Focusing on the individual level, Table 1 presents the results of a linear regression model regressing willingness to pay on loneliness and socioeconomic controls. Results support the negative bivariate correlation, as loneliness is negatively associated with willingness to pay, even more so after controlling for socioeconomic status. In this model, a shift from no loneliness to complete loneliness is associated with a moderate 0.26 decrease in the average willingness to pay for redistribution. Compared to socioeconomic covariates, loneliness has the second-highest effect on willingness to pay after college-level education. Notwithstanding, model fit is rather poor with only 4.8% of variance explained.

Table 1: Results of an OLS regression on the dependent variable solidarity

Loneliness and socioeconomic controls	
Loneliness	-0.260*** (0.064)
Age	0.058 (0.073)
Household income	0.214*** (0.063)
Gender: male	0.062* (0.031)
Education: Highschool	0.068 (0.052)
Education: College	0.385*** (0.053)
Num.Obs.	7321
R2	0.048
R2 Adj.	0.048
AIC	20503.6
BIC	20558.8
+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001	

Coefficients are estimated using variables scaled to range between 0 and 1. An additional control variable indicating whether the household income is imputed is accounted for in the models but not displayed. Robust standard errors in parentheses. The model includes a sampling weight.

Introducing social trust, institutional trust and anti-immigration attitudes into the model substantially lowers the effect size of loneliness and renders the direct effect statistically insignificant (see table 4 in the appendix). Also, model fit substantially improves to 21 % of the variance explained (see table 5 in the appendix for an overview of R2-values in all path models). Table 2 demonstrates that the effect of loneliness is largely mediated. All three proposed mediation paths demonstrate statistically significant negative indirect effects of loneliness on willingness to pay.

First, social trust is both positively associated with willingness to pay ($\beta=0.43$, see table 4 in the appendix for all path coefficients) and negatively associated with loneliness ($\beta=-0.14$). Therefore, loneliness exerts a statistically significant indirect effect ($\beta=-0.06$, see table 2) on willingness to pay mediated through social trust. H1.1 is therefore supported by the empirical results.

Similarly, institutional trust is even more strongly positively associated with willingness to pay ($\beta=0.77$). Against our expectations, in our analysis the association between loneliness and institutional trust is of similar strength ($\beta=-0.13$) as the

association between social trust and loneliness. Thus, the indirect effect of loneliness mediated through institutional trust is substantially stronger ($\beta=-0.10$) because of the stronger association with political solidarity. The indirect effect through institutional trust is the strongest indirect effect in the model. H1.2 is therefore also supported by our results.

Finally, anti-immigration attitudes are the strongest negative predictor of willingness to pay ($\beta=-1.47$). They are additionally slightly positively associated with loneliness ($\beta=0.05$). The substantially strong negative association between anti-immigration attitudes and willingness to pay makes this path ($\beta=-0.08$) stronger than the indirect effect of social trust, coming short of the effect of institutional trust. H2 is therefore supported by our results as well.

Table 2: Direct, Indirect and total effects of loneliness on solidarity from path models.

	H1.1: Through social trust	H1.2: Through institutional trust	H2: Through anti-immigrant attitudes	Full Model
Direct: Loneliness on solidarity	-0.024 (0.043)	-0.024 (0.043)	-0.024 (0.043)	-0.024 (0.043)
Indirect: Loneliness through social trust	-0.061*** (0.008)			-0.061*** (0.008)
Indirect: Loneliness through institutional trust		-0.098*** (0.010)		-0.098*** (0.010)
Indirect: Loneliness through anti-immigrant attitudes			-0.078*** (0.015)	-0.078*** (0.015)
Total effect of loneliness	-0.084* (0.042)	-0.121** (0.043)	-0.102* (0.045)	-0.260*** (0.046)
Num.Obs.	7321	7321	7321	7321

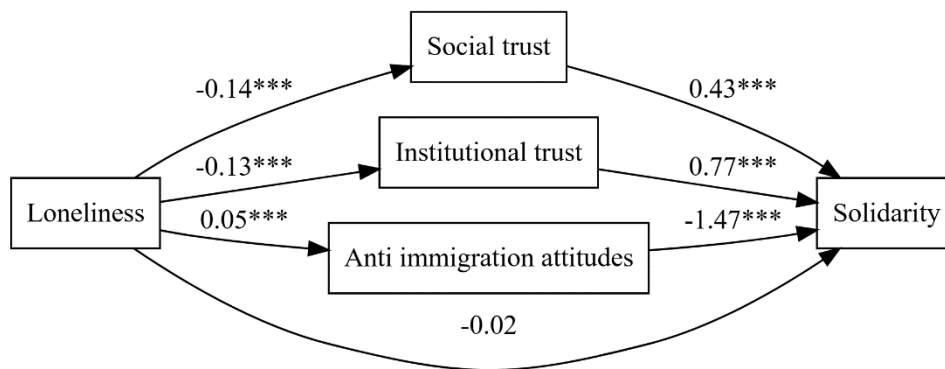
- $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$,

All models additionally control for household income, age, gender and whether household income was imputed. Coefficients are estimated using variables scaled to range between 0 and 1. Standard errors are calculated using robust maximum likelihood. Covariances are unconstrained. All models include sampling weights.

Figure 3 shows a path diagram of the full mediation model. Controlling for the mediations through social trust, institutional trust and anti-immigration attitudes, the direct effect of loneliness decreases substantially in strength to -0.03 and fails to reach significance at the 95% significance level. Therefore, empirical results do not support H3.

Including all mediation paths in one model yields a statistically significant total negative effect of loneliness on willingness to pay of -0.26, identical to the effect measured in the regression model including only socio-demographic controls. Compared to the other predictors in our model, loneliness is thus comparable to well-established predictors like household income (0.16), male gender (0.13) or college education (0.20).

Figure 3: Diagram of paths from loneliness on solidarity estimated in the full model.



The underlying model additionally controls for household income, age, gender and whether household income was imputed. Coefficients are estimated using variables scaled to range between 0 and 1. Standard errors are calculated using robust maximum likelihood. Covariances are unconstrained. The model includes sampling weights.

To test the robustness of our analysis, we additionally estimated models on subsamples split by welfare regimes (see appendix figure 4). Point estimates remain negative across regimes, although statistical significance drops below the 95% level in some cases, likely due to the lower sample sizes. We additionally estimated the models using each level of our solidarity index as a separate dependent variable (see appendix figure 5). While all associations remain statistically significant and negative, we observe that the indirect effect of anti-immigrant attitudes dominates on the European level, whereas on the municipal and national levels the indirect effect through institutional trust remains dominant.

5. Our Contributions

Multivariate analysis supports our theoretical model. Controlling for respondents' household income, age, gender and education, loneliness is associated with a lower willingness to pay for public redistribution. This effect is fully mediated through trust and stronger negative attitudes towards immigration. Loneliness is both negatively associated with interpersonal and institutional trust, which are both positively

associated with the willingness to pay for public redistribution. Conversely, loneliness is positively associated with negative attitudes towards immigration, which are negatively associated with willingness to pay. Of these three mediated paths, institutional trust is the strongest negative predictor. By contrast, the indirect effect through social trust is the weakest of the three. After controlling for all three mediated paths, no direct effect of similar magnitude as the mediation through negative immigration attitudes remains. In total, the mediated effects add up to an effect larger in size than those of household income, education or gender.

We make a threefold contribution. First, theoretically, we merge insights from sociological and psychological research on loneliness with research on welfare state attitudes and thereby demonstrate three plausible causal mechanisms by which loneliness can affect attitudes towards the welfare state. We also derived testable hypotheses from them that we preregistered before the data were collected. Second, empirically, we collected a novel survey with high-quality random samples of the resident adult populations in seven countries with different welfare state-institutional frameworks. Third, the implications: the analysis demonstrates how the social and the political are connected. The evolutionarily advantageous feeling of discomforting loneliness made our ancestors seek social groups for enhanced chances of better protection. In this modern day and age, the feeling might actually create less protection by the public system by lowering support for the state. People who are lonely are less willing to pay for redistribution that favours others.

Future research should explore the causal link further, maybe leveraging unexpected events during the survey field period for a quasi-experimental design to “move” loneliness externally. Also, panel studies could help us to understand the causal, longitudinal, reciprocal relationships. Moreover, there is a vibrant debate about the effects of social media use on political thinking and behaviour. Whereas social media has an ambivalent relationship with loneliness overall, lonely people are more likely to turn to social media (O’Day and Heimberg 2021). As a result, the underlying algorithms expose them to more negative political messages (Potsdamer Social Media Monitor 2025). Through this chain, loneliness could cause even more negative political consequences.

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7. Appendix

Table 3: Pearson's Correlations between variables in the dataset. Statistical significance indicated by stars ($p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$)

	Solid arity	Lone liness	Ag e	Gende r: male	Education: Highschool	Education: College	Social trust	Inst. trust	Anti- immigrat ion
Solidarity	1	.	.	.	.	.	.	.	.
Loneliness	-.10** *	1	.	.	.	.	.	.	.
Age	.01	-.15** *	1	.	.	.	.	.	.
Gender: male	.05***	-.08** *	.03*	1	.	.	.	.	.
Education: Highschool	-.11** *	.03*	-.00	.05***	1	.	.	.	.
Education: College	.18***	-.06** *	-.10 ***	-.03*	-.78***	1	.	.	.
Social trust	.27***	-.14** *	-.03 +	.03*	-.09***	.15***	1	.	.
Inst. trust	.29***	-.17** *	.12* **	.02	-.07***	.08***	.21***	1	.
Anti- immigration	-.42** *	.07***	-.08 ***	.08***	.09***	-.12***	-.28***	-.25***	1

Table 4: Direct effects of loneliness on solidarity from path models.

	H1.1: Through social trust	H1.2: Through institutional trust	H2: Through anti- immigrant attitudes	Full Model
Dependent variable: solidarity:				
Loneliness	-0.024 (0.043)	-0.024 (0.043)	-0.024 (0.043)	-0.024 (0.043)
Social trust	0.432*** (0.040)	0.432*** (0.042)	0.432*** (0.041)	0.432*** (0.040)
Inst. trust	0.767*** (0.050)	0.767*** (0.049)	0.767*** (0.050)	0.767*** (0.049)
Anti-immigration	-1.474*** (0.047)	-1.474*** (0.049)	-1.474*** (0.046)	-1.474*** (0.046)
Household income	0.159*** (0.039)	0.159*** (0.039)	0.159*** (0.039)	0.159*** (0.039)
Age	-0.111* (0.046)	-0.111* (0.047)	-0.111* (0.047)	-0.111* (0.046)
Gender	0.128*** (0.021)	0.128*** (0.021)	0.128*** (0.021)	0.128*** (0.021)
Education: Highschool	0.020 (0.026)	0.020 (0.026)	0.020 (0.026)	0.020 (0.026)
Education: College	0.197*** (0.030)	0.197*** (0.030)	0.197*** (0.030)	0.197*** (0.030)
Dependent variable: social trust:				
Loneliness	-0.141*** (0.012)			-0.141*** (0.012)
Household Income	0.078*** (0.012)			0.078*** (0.012)
Age	-0.070*** (0.014)			-0.070*** (0.014)
Gender	0.005 (0.006)			0.005 (0.006)
Education: Highschool	0.034*** (0.008)			0.034*** (0.008)
Education: College	0.096*** (0.009)			0.096*** (0.009)
Dependent variable: inst. trust:				
Loneliness		-0.127***		-0.127***

	H1.1: Through social trust	H1.2: Through institutional trust	H2: Through anti- immigrant attitudes	Full Model
		(0.010)		(0.010)
Household Income		0.024*		0.024*
		(0.010)		(0.010)
Age		0.106***		0.106***
		(0.011)		(0.011)
Gender		-0.001		-0.001
		(0.005)		(0.005)
Education: Highschool		0.001		0.001
		(0.006)		(0.006)
Education: College		0.037***		0.037***
		(0.007)		(0.007)
Dependent variable: anti-immigration attitudes				
Loneliness			0.053***	0.053***
			(0.010)	(0.010)
Household Income			-0.002	-0.002
			(0.010)	(0.010)
Age			-0.080***	-0.080***
			(0.012)	(0.012)
Gender			0.045***	0.045***
			(0.005)	(0.005)
Education: Highschool			-0.022***	-0.022***
			(0.007)	(0.007)
Education: College			-0.080***	-0.080***
			(0.008)	(0.008)
Num.Obs.	7321	7321	7321	7321

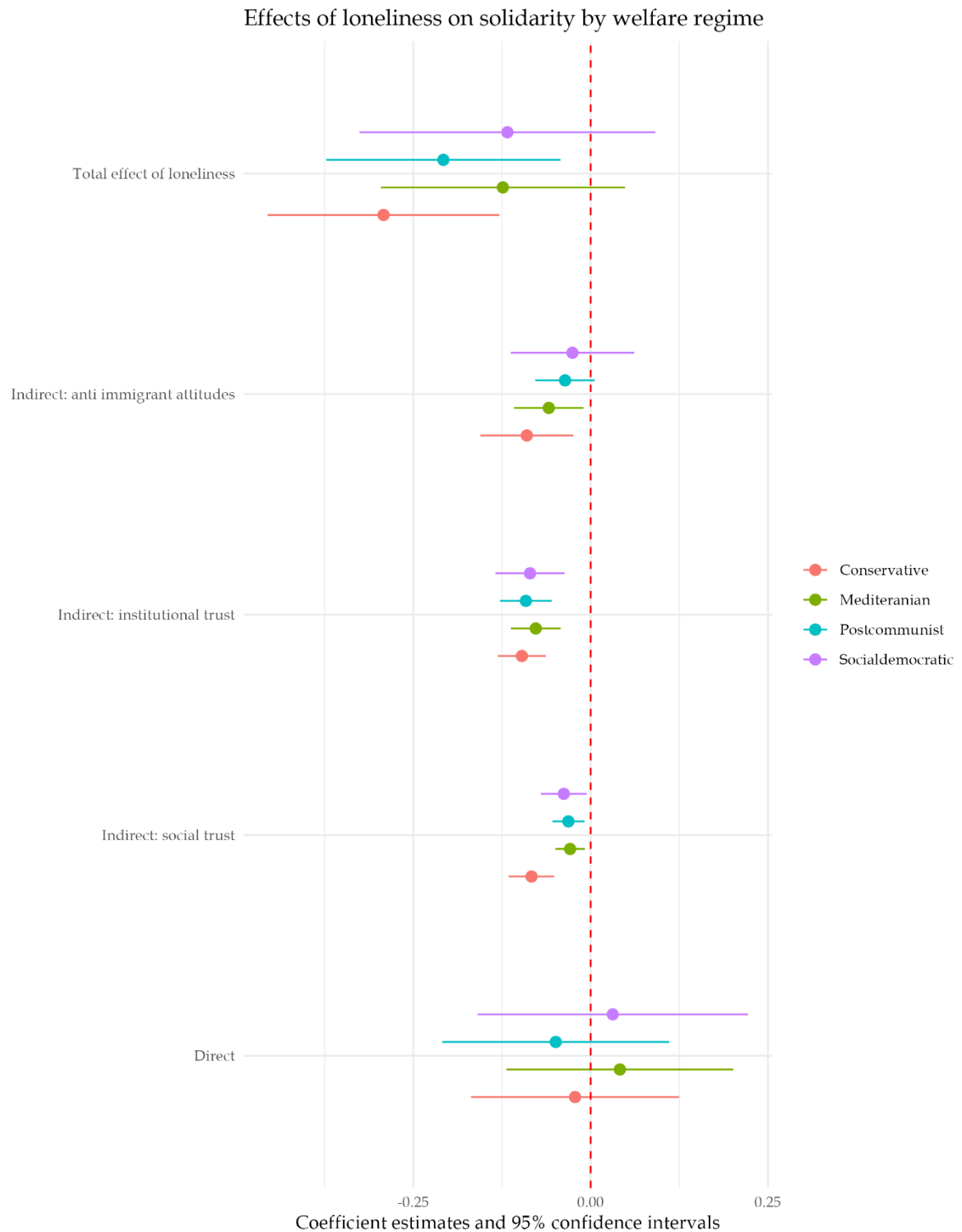
- $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

All models additionally control for household income, age, gender and whether household income was imputed. Coefficients are estimated using variables scaled to range between 0 and 1. Standard errors are calculated using robust maximum likelihood. Covariances are unconstrained. All models include sampling weights.

Table 5: R^2 -values of the individual paths in all four models

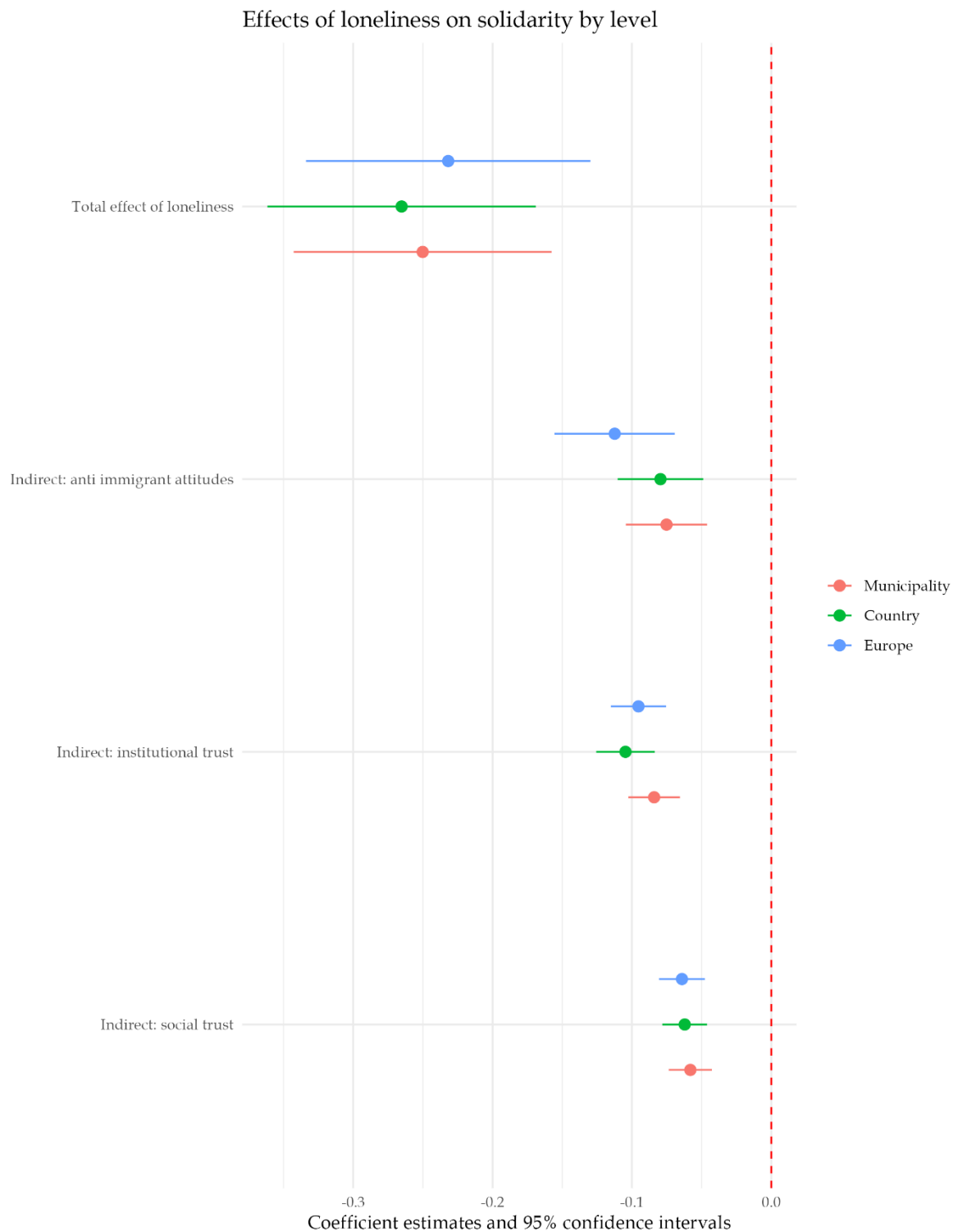
Dep. Variable	H1.1: Through social trust	H1.2: Through institutional trust	H2: Through anti-immigrant attitudes	Full Model
Solidarity	0.232	0.228	0.217	0.211
Social trust	0.064			0.064
Institutional trust		0.051		0.051
Anti-immigration			0.038	0.038

Figure 4: Coefficients of total and indirect effects of the full mediation model split by welfare regimes.



The underlying model additionally controls for household income, age, gender and whether household income was imputed. Coefficients are estimated using variables scaled to range between 0 and 1. Standard errors are calculated using robust maximum likelihood. Covariances are unconstrained. The model includes sampling weights.

Figure 5: Coefficients of total and indirect effects of the full mediation model split by levels of redistribution



The underlying model additionally controls for household income, age, gender and whether household income was imputed. Coefficients are estimated using variables scaled to range between 0 and 1. Standard errors are calculated using robust maximum likelihood. Covariances are unconstrained. The model includes sampling weights.