Loneliness is positively associated with populist radical right support

Delaney Peterson [a,*] , Matthijs Rooduijn [b], Frederic R. Hopp [c], Gijs Schumacher [b], Bert N. Bakker [a]

[a] *University of Amsterdam, Amsterdam School of Communication Research, the Netherlands*
[b] *University of Amsterdam, Department of Political Science, the Netherlands*
[c] *Leibniz Institute for Psychology, Trier, Germany*

A B S T R A C T

Objectives: The mental and physical health consequences of loneliness are well documented. However, loneliness's socio-political ramifications have been largely unexplored. We theorize that loneliness, due to its physiologically dysregulating impact on the nervous system, facilitates greater susceptibility towards populist radical right parties.
Methods: We tested our hypothesis in 25 unique tests in four population-based samples (N = 40852), spanning nine countries - the Netherlands (15 tests, 2008–2023), Germany (two samples; 2017, 2018), Austria, Croatia, Denmark, France, Hungary, Sweden, and Switzerland (all in 2017). Logistic regressions were run per year and per country. Two internal meta-analyses were run, the first for the Dutch sample and the second for the cross country dataset.
Results: In the Netherlands, lonelier individuals were more likely to support the populist radical right across 15 tests spanning 15 years of data, with 11 tests reaching statistical significance - odds ratios ranging from 1.1 to 1.38. For the cross country analysis, Denmark reached statistical significance (OR = 1.2, 90% CI = 1.01, 1.42). Due to smaller sample sizes however, the cross country tests were underpowered to reliably detect small effects.
Conclusions: Loneliness is positively associated with support for the populist radical right in the Netherlands. The effect sizes are comparable to common health correlates of loneliness - high blood pressure, heart diseases, and depression – emphasizing their socio-political relevance. Going forward, well-powered cross-national replications are needed.

1. Introduction

Over the past decade, mental health professionals and social scientists alike have sounded the alarm of a "loneliness epidemic" sweeping nations across the world (Hertz, 2020; O'Rourke, 2024; Putnam, 2000). Defined as "a unique condition in which an individual perceives himself or herself to be socially isolated even when among other people" (Cacioppo and Cacioppo, 2018, p. 426), loneliness is a perceptual phenomenon that represents a paradoxical component; it is not mitigated through proximity to others. Loneliness has dire physiological consequences, extending to mental and physical health ramifications. It is associated with depression (Erzen and Çikrikci, 2018) and has been found to negatively impact immune functioning - leading to an increase in cortisol and high blood pressure (Valtorta et al., 2016). Loneliness also increases the risk of heart disease (Valtorta et al., 2016; Wang et al., 2023) and strikingly, one's chance of premature mortality by 26 percent (Cacioppo and Cacioppo, 2018).

In the midst of this "loneliness epidemic", it seems our *politics* are making us sick as well (Nayak et al., 2021; Smith, 2022). Amid increasing polarization, radicalization, cynicism and distrust, politics

has become a growing source of chronic stress for individuals across the political spectrum, and questions arise regarding how one's physiology is impacted by and is implicated in this socio-political climate (Tsakiris et al., 2021). Despite its societal prevalence, while a growing body of literature demonstrates positive associations between mental health problems and engagement with politics (Farber, 2018; Ford and Feinberg, 2020; Nayak et al., 2021; Roche and Jacobson, 2019), little scholarly attention has been paid to the potential interplay between *loneliness* and politics see two exceptions: (Langenkamp, 2021; Petersen et al., 2023). We propose that loneliness might also have political consequences and explore if it gives way to susceptibility toward political parties that capitalize on the unmet need for connection: populist radical right parties.

Populist radical right parties have gained traction in nations across the world, with scholars raising concern regarding their potential harm to democracy (Rooduijn, 2019). Populist radical right parties combine two forms of ingroup-outgroup thinking (Bakker et al., 2021; Mudde, 2007): they argue that the native group is being threatened by non-native ideas and groups (refugees, Muslims or ethnic minorities) - this is their *nativism* - and also claim that "the people" are betrayed or

---

neglected by a corrupt and out-of-touch (political, economic and/or cultural) elite - this is their *populism*.

The physiological ramifications of loneliness may increase susceptibility to the appeals of the populist radical right amid an uncertain sociopolitical landscape. The hypervigilance to threat common among lonely individuals (Cacioppo et al., 2006) could make an individual more receptive to both nativist rhetoric (threat = non-native groups) and populist rhetoric (threat = 'the elite'). Moreover, nativist and populist messages are strongly antagonistic and Manichean (Hawkins, 2010), and therefore likely resonate with lonely individuals' tendency toward dichotomized (black and white) thinking (Baek et al., 2023). Anti-establishment discourse often employed by populist radical right parties (Bakker et al., 2021) could also be more convincing to lonely individuals, who are predisposed to distrust others (Cacioppo et al., 2006). Finally, it is important to underscore that populist radical right parties not only emphasize whom they dislike (outgroup hate); their messages also contain an emphasis on whom they like (ingroup love): a focus on 'we, the people' in the case of populism, and on the glorification of 'our nation' in the case of nativism. As such, these parties may provide a lonely person with a sense of belonging, one that they viscerally lack.

Yet, the cultural and political determinants of populist radical right support (Golder, 2016, for an overview) do not speak to the visceral needs of citizens. The literature on social isolation and populist radical right support – drawing upon sociological theories (Putnam, 2000) – comes closest by arguing that *social isolation* is positively associated with support for the populist radical right (Bolet, 2021). In these studies, social isolation is operationalized as having weak family structures, a lack of friendships or no participation in civil society. In some cases, populist radical right voting has been linked to higher levels of social isolation (Bolet, 2021; Langenkamp and Bienstman, 2022), while others fail to find support for this claim (e.g., Coffé et al., 2007; Rydgren, 2011; Veugelers, 2005).

The social isolation literature focuses on objective indicators of isolation. However, "socially isolated persons are not necessarily lonely, and lonely persons are not necessarily socially isolated in an objective sense" (de Jong-Gierveld et al., 2006, p. 486). In fact, medical research has shown that social isolation has different causes and consequences compared to loneliness (Elovainio et al., 2017; Uelle, 2024). We test whether there is a positive association between loneliness and support for the populist radical right. We hypothesized the following: *Lonelier individuals are more likely to* support *the populist radical right.*

2. Methods

We conducted population-based studies using four data sources that include loneliness and support for the populist radical right (measured through intention to vote or recall of a vote for the populist radical right, depending on the sample): in the Netherlands we used the Longitudinal Internet Studies for the Social Sciences Panel (2008–2022) and an independent replication sample, the Flycatcher sample (2023). To study the association in other European democracies, we turned to the cross-sectional International Social Survey Program (2017) and the German General Social Survey (2018). To the best of our knowledge, these are the only datasets available with a robust measure of loneliness *and* populist radical right support.

We first preregistered a positive association between loneliness and intention to vote the populist radical right using the Longitudinal Internet Studies for the Social Sciences Panel (https://osf.io/qf3um/). We subsequently preregistered the International Social Survey Program and German General Social Survey (https://osf.io/tcyjg/) and Flycatcher studies (https://osf.io/3umgs/) before we got access to the data. The documented pre-analysis plan deviations can be found on the Open Science Framework (OSF): (https://osf.io/qf3um/).

2.1. Sample and study characteristics

Here we discuss the four data sources and their core characteristics (for a summary, see Table 1). The Longitudinal Internet Studies for the Social Sciences Panel (Scherpenzeel and Das, 2010) is a panel survey of Dutch citizens, spanning from 2008-present day. We relied upon the yearly "politics and values" and "social integration and leisure" waves in the period 2008 to 2022, excluding 2012 (per variation in the measurement of the loneliness variable). Data collection for 2015 and 2016 was combined, therefore this time period is labeled as 2015. Loneliness was measured every year (2008–2014; February–March 2015–2022; October–November) using the validated six-item De-Jong Gierveld scale (de Jong-Gierveld and Kamphuis, 1985). We coded the items so that higher scores indicated greater loneliness. The mean per respondent over the six items was taken. To ease interpretation we z-standardized the loneliness measure per year. We used the same approach for all loneliness variables in the study.

To measure support for populist radical right parties in the Dutch samples we relied on vote intention for the populist radical right at the time of the survey. Vote intention was captured with the question "if parliamentary elections were held today, for which party would you vote?" and was recoded into a dichotomous variable, (1) for intention to vote for the populist radical right and (0) for intention to vote for another party in the Netherlands. Those who did not vote were set to missing. We categorized populist radical right parties using The Popu-List (Rooduijn et al., 2023). The same approach was used for the other samples. For the summary statistics of the main study variables from the

Table 1
Study characteristics.

Study name	Year	Country	Populist Radical Right Party	Loneliness Scale
Longitudinal Internet Studies for the Social Sciences Panel	2008–2022	Netherlands	Freedom Party, Forum for Democracy, The Right Answer 21	De Jong Gierveld (#6)
Flycatcher	2023	Netherlands	Freedom Party, Forum for Democracy, The Right Answer 21	De Jong Gierveld (#6 & #11)
International Social Survey Program	2017	Austria	Austrian Freedom Party	UCLA
		Croatia	Croatia Democratic Union of Slavonija and Baranja, Bridge of Independent Lists	
		Denmark	Danish People's Party	
		France	National Front/Rally	
		Germany	Alternative for Germany	
		Hungary	The Movement for a Better Hungary (Jobbik Magyarors), Hungarian Civic Alliance - Christian Democratic People's Party	
		Sweden	Sweden Democrats	
		Switzerland	Swiss People's Party	
German General Social Survey	2018	Germany	Alternative for Germany	UCLA

Longitudinal Internet Studies for the Social Sciences Panel, see Appendix A, Table 2.

The International Social Survey Program (2017) (Group, 2019) is a cross-national survey, spanning 44 countries. As preregistered, we limited our analysis to European countries with a populist radical right party (namely: Austria, Croatia, Denmark, France, Germany, Hungary, Sweden, and Switzerland). We utilized the module titled, "Social networks and social resources", collected in 2017. Loneliness was measured with the 3-item UCLA loneliness scale (Russell, 1996). Populist radical right support was measured with a recall of one's vote choice in the most recent election: "Thinking back to the last general election in [month/year] which party did you vote for?". It was recoded into a dichotomous variable, (1) vote for the populist radical right and (0) vote for another party. Those who did not vote were set to missing. For summary statistics of the International Social Survey Program variables, see Appendix A, Table 3.

The German General Social Survey (für Sozialwissenschaften, 2019) is a representative sample of the German population for 2018. The German General Social Survey also used the 3-item UCLA loneliness scale (Russell, 1996). Populist radical right support was captured through vote intention on a 10-point likert scale asking participants how likely they were to vote for the populist radical right party in Germany: Alternative for Germany (AfD) ((1) representing "very unlikely" and (10) representing "very likely"). For summary statistics see Appendix A, Table 3.

In December 2023 we collected another sample of the Dutch population (Flycatcher, 2023). In this study, participants completed both the 11-item De-Jong Gierveld (and by default, the 6-item scale) (de Jong-Gierveld and Kamphuis, 1985) and the 3-item UCLA scale (Russell, 1996), allowing us to compare the predictive validity of different loneliness measures. Populist radical right support was measured with intention to vote for the populist radical right, following the Longitudinal Internet Studies for the Social Sciences Panel. For summary statistics, refer to Appendix A, Table 2.

2.2. Statistical analysis

We treat the 13 years of the Longitudinal Internet Studies for the Social Sciences Panel as unique tests and performed logistic regressions on each year separately. Support for the populist radical right was the dependent variable and loneliness was the independent variable, while controlling for a set of covariates. We follow the same strategy for our Flycatcher 2023 sample and the separate countries in the International Social Survey Program and German General Social Survey datasets. In all models we control for gender, age, level of education and place of residence. (See Appendix B; Table 10 for a list of the covariates per dataset and their operationalization). To account for missing values for loneliness, we used the rowmeans command in R, one that excludes items with missing values before taking the mean over the items with a response. We used listwise deletion to handle missing values otherwise.

To get a meta-analytic estimate across the 13 Longitudinal Internet Studies for the Social Sciences Panel waves, we pooled the years and ran a generalized estimating equations model (GEE) with standard errors clustered at the individual level to account for multiple entries per participant. To get a pooled estimate for the International Social Survey Program data, we included all of the countries and used a generalized linear mixed model (GLMER) clustered at the country level.

We also explored the association between loneliness and support for populist parties in general. We do so, because populist radical right parties combine two types of ingroup-outgroup thinking: nativism – which makes a party 'radical right' – and populism. In the robustness check, we explore the association between loneliness and support for the broader category of populist parties, including both populist radical right parties as well as populist parties which are *not* radical right (Rooduijn et al., 2023). These analyses were conducted in each sample of the Longitudinal Internet Studies for the Social Sciences Panel and

where possible in the International Social Survey Program (depending on the presence of populist parties) and should be considered exploratory tests as they were not preregistered.

3. Results

We start with the descriptive statistics. Fig. 1 presents the distribution of the unstandardized loneliness score (min = 6, max = 18) across the parties present in the Longitudinal Internet Studies for the Social Sciences Panel in the period 2008–2022. As expected, individuals with the intention to vote for the populist radical right report the highest average level of loneliness (M = 8.3, SD = 2.7). (We combined the three populist radical right parties here due to small Ns when taken separately [this is the case for Forum for Democracy and the Right Answer 21 in our data], which would greatly skew the means.) Supporters of the far left populist party, the Socialist Party (SP), displayed a similar and not statistically different mean loneliness level (M = 8.2, SD = 2.7). Alongside this, supporters for the Party for Animals (PVdD) also displayed higher loneliness than the average (M = 8.3, SD = 2.7). This shouldn't come as a surprise. Even though the PvdD is not a populist party, it does employ anti-establishment rhetoric, and its voters tend to be relatively discontented with politics (Otjes and Krouwel, 2015). The loneliness means for all other parties were substantially lower. See Appendix A, Tables 1 and 5 for the test statistics.

3.1. The Netherlands

Fig. 2 summarizes our main results (The Netherlands; Longitudinal Internet Studies for the Social Sciences Panel and Flycatcher) - plotting odds ratios of loneliness on populist radical right vote intention for each year (2008–2023) (excluding 2012 and 2016, as mentioned in the Methods section). Out of the 15 analyses, 11 show a positive (odds ratio above 1) and statistically significant association between loneliness and populist radical right vote intention. For these 11 cases, a standard deviation increase in loneliness is associated with a 1.1 to 1.38 increase in the probability to vote for a populist radical right party. In 2008, 2009, 2018 and 2020 the effects are not statistically significant but the odds ratios remain positive. The meta-analytic estimate pooled the separate panel years, giving an odds ratio of 1.16 (90%CI = 1.12, 1.20). Further, an empty model regressing populist radical right support on loneliness indicates that results are not conditional upon the inclusion of covariates (OR = 1.2,90%CI = 1.18,1.25).

These results were reproduced in the Flycatcher sample we collected (N = 2,000, sufficiently powered to detect a small effect). Using the same 6-item De-Jong Gierveld battery, the association between loneliness and intention to vote for the populist radical right in 2023 was 1.2 (90%CI = 1.09, 1.36) (similar to the pooled estimate from the Longitudinal Internet Studies for the Social Sciences Panel). When using the full 11-item De-Jong Gierveld battery, the estimates were almost identical, (OR = 1.19, 90% CI = 1.07,1.34), with the 6 and 11- item batteries correlating at 0.9. With the majority of the analyses showing a positive and statistically significant association in the Longitudinal Internet Studies for the Social Sciences Panel, an independent replication in another sample (Flycatcher), and a statistically significant pooled estimate over the Longitudinal Internet Studies for the Social Sciences Panel years, we conclude that we can reject the null-hypothesis of no association between loneliness and populist radical right vote intention: loneliness is positively associated with support for the populist radical right in the Netherlands.

To contextualize these findings, we compare our effect sizes in the Netherlands with common physical and mental health correlates of loneliness (Erzen and Çikrikci, 2018; Valtorta et al., 2016). We ran three identical models to the Longitudinal Internet Studies for the Social Sciences Panel analyses - z-standardizing loneliness and including the same covariates - with the data from the year 2022 (N = 4590). We replaced the dependent variable of populist radical right vote intention
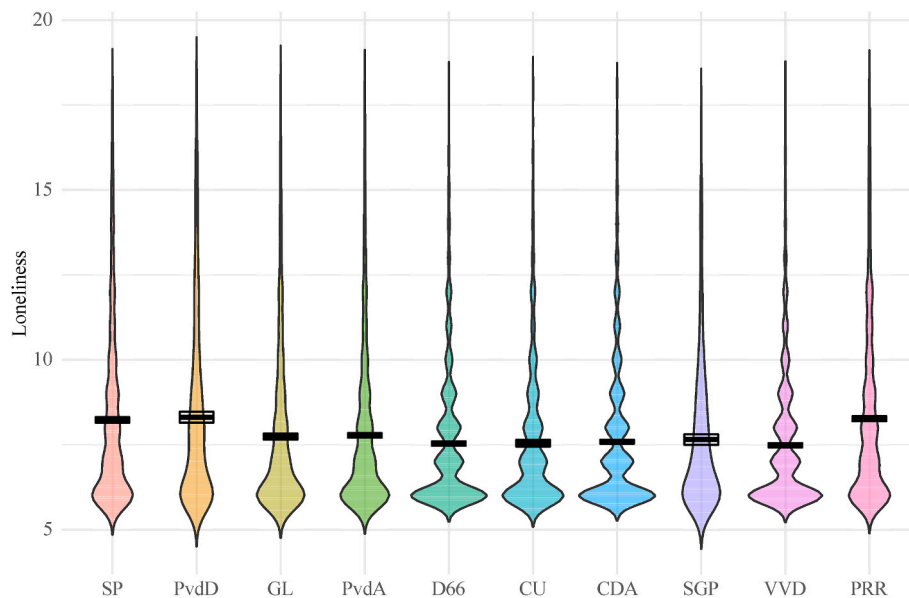
Fig. 1. Average loneliness scores per party in The Netherlands (mean over the period 2008–2022).
Note: The parties are ordered from left to right on the political spectrum: Socialist Party (SP), Party for the Animals (PvdD), Green Left (GL), Labour Party (PvdA), Democrats 66 (D66), Christine Union (CU), Christian Democratic Appeal (CDA), Reformed Political Party (SGP), People's Party for Freedom and Democracy (VVD), Populist Radical Right parties (PRR; Freedom Party (PVV), Forum for Democracy (FvD), The Right Answer 21 (JA21)). Loneliness is an unstandardized score that theoretically ranges from 6 to 18. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

with the following binary variable: "Are you currently taking medication at least once a week for any of the following": depression/anxiety, high blood pressure and heart diseases. The variables were coded as (1) for yes and (0) for no. In line with previous work (Erzen and Çikrikci, 2018; Valtorta et al., 2016), loneliness has a statistically significant and positive association with depression/anxiety (OR = 1.5, 90%CI = 1.44, 1.63), high blood pressure (OR = 1.17, 90%CI = 1.12, 1.22), and heart diseases (OR = 1.2, 90%CI = 1.13, 1.31). Strikingly, the effect sizes of the association between loneliness and populist radical right vote intention are within the range of typical physical and mental health correlates of loneliness, suggesting the socio-political correlates of loneliness are of the same magnitude.

For the exploratory test, we created a populism variable, which included vote intention for the populist radical right parties as well as the left-wing populist Socialist Party (SP). The results are similar, as evidenced by both similar point estimates and overlapping confidence intervals - indicating there is not a statistically significant difference between groups.

3.2. Cross country test of the loneliness-populist radical right association

To test whether the association between loneliness and support for the populist radical right - and populism - generalizes to other national contexts, we ran cross-country analyses with the International Social Survey Program (2017) and German General Social Survey (2018) samples. Fig. 3 summarizes the country specific findings and plots the odds ratios of the association between loneliness and a vote for the populist radical right for each country in the International Social Survey Program sample. Six of the nine coefficients demonstrate odds ratios that are above 1, yet the effects are small. Denmark is the only country reaching statistical significance (OR = 1.2, 90%CI = 1.03, 1.46). There, a standard deviation increase in loneliness is associated with a 1.2 increase in the probability to vote for the populist radical right, at par with the results in the Netherlands. When it comes to the German General Social Survey, which utilized a continuous dependent variable, the association was negative but not statistically significant (N = 1591; b = −0.03; SE = 0.06). The pooled estimate for the International Social Survey Program data was small and positive (OR = 1.02, 90%CI = 0.96,

1.1), but not statistically significant. Additionally, an empty model regressing populist radical right support on loneliness in the pooled data demonstrates that the results are not conditional upon the inclusion of covariates (OR = 1.03, 90%CI = 0.96, 1.09). The exploratory tests for populist parties in general yielded similar results. (See Appendix B; Table 11 for a list of the populist parties included per country).

What could explain these findings? Compared to the Dutch study, which uses the De-Jong Gierveld scale, loneliness is measured with the 3-item UCLA battery. To test if the use of a different loneliness measure impacted our findings, we return to the Flycatcher (2023) data collected in the Netherlands. By design, the Flycatcher data allows us to directly compare the association between loneliness and populist radical right support when measured with the 11-item De-Jong Gierveld (as well the 6-item) and the 3-item UCLA battery. In this sample, the two loneliness batteries correlated positively and strongly with each other (r = 0.7). The data shows that the association between loneliness and populist radical right support is highly similar when - within the same individuals – loneliness is measured with the 11-item De-Jong Gierveld (OR = 1.2, 90%CI = 1.07 1.33), the 6-item De-Jong Gierveld (OR = 1.2, 90%CI = 1.09, 1.36) and the 3-item UCLA (OR = 1.2, 90%CI = 1.07, 1.34) measure. Here, we draw the same conclusions about the loneliness-populist radical right association regardless of the operationalization of loneliness. Given the widespread applicability of both loneliness measures in (Western) Europe (e.g., Alsubheen et al., 2023; De Jong Gierveld and Van Tilburg, 2010; Penning et al., 2014), we find it unlikely that a different measure of loneliness explains the differential effects between our Dutch and cross country tests.

Another, more plausible, explanation for the International Social Survey Program and German General Social Survey results is a lack of statistical power to reliably detect small effects (Lakens, 2022). The preregistered power analysis demonstrated that we could not reliably detect small, population based effects in these samples. Specifically, per country, we could only reliably detect (power = 0.8, p [two-sided] = 0.05) larger effects (d = 0.25). While for the pooled model, a small effect (d = 0.15) could be reliably detected (power = 0.9, p [two-sided] = 0.05). If the true effects of the loneliness-populist radical right associations are smaller than these effects, than the cross country tests are underpowered.
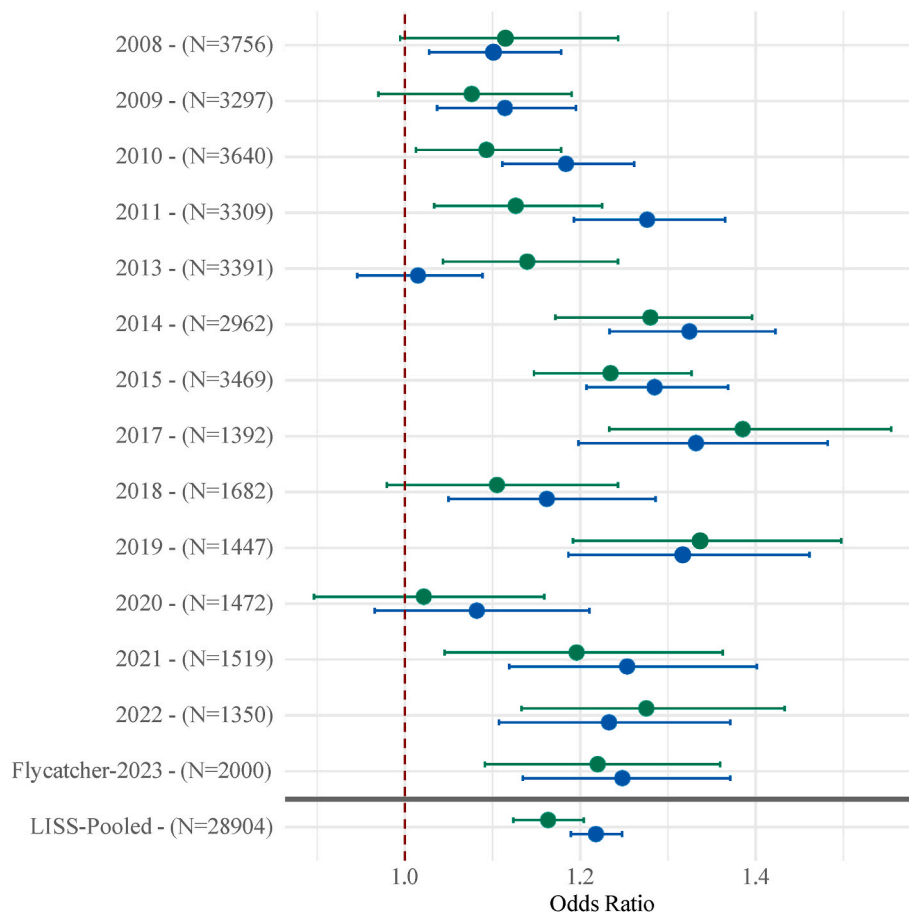
Fig. 2. Odds ratios of the effect of loneliness on intention to vote for the populist radical right.
Note: The dots are the odds ratios of loneliness (standardized), the bars represent the preregistered 90% confidence intervals. Green refers to populist radical right support (Freedom Party (PVV), Forum for Democracy (Fvd) & The Right Answer 21 (JA21). Blue refers to support for populism (PRR parties *and* the populist Socialist Party (SP)). Refer to Appendix A, Tables 6 and 7 for the full models. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Despite these limitations, the results of the International Social Survey Program and German General Social Survey studies are still informative. We conducted a second power analysis to estimate the likelihood of observing effects in the expected direction, regardless of their statistical significance (Gelman and Carlin, 2014). This analysis, which computed the probability of obtaining odds ratios above 1 (depending on the sample size), suggests that even if underpowered (N = 600) and assuming an effect size of d = 0.2 (which is grossly the effect size we find in the well-powered Longitudinal Internet Studies for the Social Sciences Panel) we should still expected to find positive signs (odds ratios above 1) in approximately 9 out of 10 cases. So while being underpowered, the largely positive effects from the cross-country tests (6 out of 9) suggest that the association between loneliness and populist radical right support is small and positive.

3.3. Robustness checks and extensions

One might wonder if the association between loneliness and populist radical right support is driven by another unobserved variable. For instance, loneliness is positively correlated with poor (mental) health (Erzen and Çikrikci, 2018; Valtorta et al., 2016), while worse self-reported health is also positively correlated with supporting populist radical right parties (Kavanagh et al., 2021). To test whether our results are robust, we turn to the Longitudinal Internet Studies for the Social Sciences Panel, which collected self-reported depression, anxiety and health. In line with the literature (Erzen and Çikrikci, 2018; Valtorta et al., 2016) loneliness correlates positively with self-reported

depression (r = 0.35), anxiety (r = 0.26) and poor health (r = 0.19). The correlations between these variables are small to modest: depression and anxiety (r = 0.5), depression and health (r = 0.2), anxiety and health (r = 0.2). These modest correlations allow us to include the three variables in the same model, without violating regression assumptions. Using the pooled data, we regressed populist radical right support on loneliness, the preregistered covariates *and* self-reported depression, anxiety and health. We find that the association between loneliness and populist radical right support does not change substantively (OR = 1.1, 90%CI = 1.11, 1.19) with the inclusion of these covariates, demonstrating an independent effect, not driven by common health correlates.

We also ran subgroup analyses with the pooled Longitudinal Internet Studies for the Social Sciences Panel and International Social Survey Program data to consider to what extent the results might be conditioned by demographic characteristics: gender (female vs. male), age, and education. The results suggest the association between loneliness and support for the populist radical right is not conditional upon these demographic characteristics – see Appendix C (Figs. 4 and 5) for the results.

Finally, we extend our argument by moving beyond cross-sectional analyses. We preregistered to explore the causal direction of the association between loneliness and populist radical right support using the Longitudinal Internet Studies for the Social Sciences Panel. We hypothesized that loneliness predicted populist radical right support - that is, loneliness at T1 would affect populist radical right support at T2. We took the years 2008, 2011, and 2015 leaving us with 2,341 complete observations over a eight year period (to maximize the number of
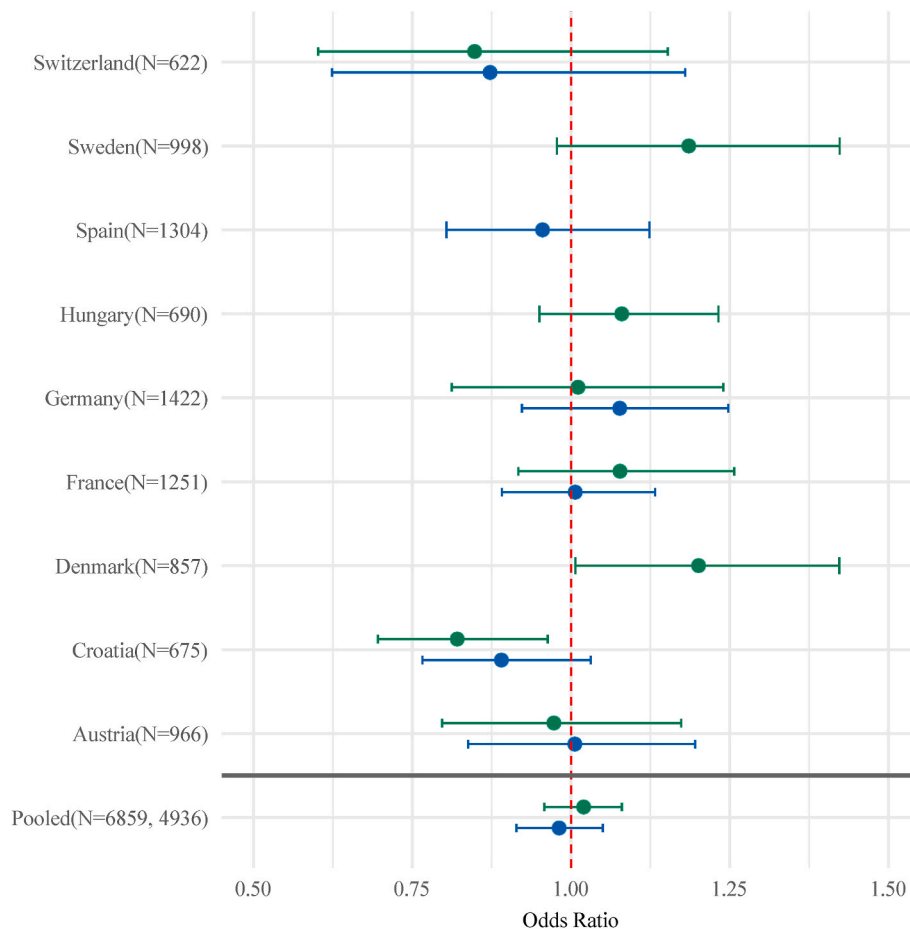
Fig. 3. Odds ratios of the effect of loneliness on voting for the populist radical right.
Note: Fig. 3 displays the odds ratios with preregistered 90% confidence intervals for the effect of loneliness (standardized) on a vote for populist radical right (in green) and populist parties (in blue) for the year 2017. Spain did not include a populist radical right party but was included for the populist models - Podemos is a left-wing populist party. Refer to Appendix A, Tables 8 and 9 for the full models. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

observations) and fit a cross-lagged panel model (Vaisey and Miles, 2017). (After 2015 only subsets of the Longitudinal Internet Studies for the Social Sciences Panel completed the loneliness batteries. Using data from 2016 to 2023 would lead to a panel dataset with too few observations to reliably detect the effect of interest.)

We find mixed evidence for our hypothesis (here we present unstandardized estimates): 2008 loneliness has a positive but not statistically significant effect on populist radical right support in 2011 (b = 0.03, SE = 0.02), while 2011 loneliness has a positive and statistically significant effect on populist radical right support in 2015 (b = 0.04, SE = 0.02). Effects in the opposite direction were also tested (which we did not preregister). Here we find that 2008 populist radical right support has a negative and not statistically significant effect on 2011 loneliness (b = −0.03, SE = 0.03), while 2011 populist radical right support has a positive and statistically significant effect on 2015 loneliness (b = 0.06, SE = 0.02). The associations are small and the results inconclusive. As cross lagged panel models only allow for Granger causal evidence (Vaisey and Miles, 2017), and are subject to debate (Hamaker et al., 2015), we interpret the results here with caution.

4. Discussion

The results from the Netherlands demonstrate loneliness has a statistically significant and positive association with supporting the populist radical right - and populist parties in general - throughout the past 15 years. The effect sizes fall within the range of common mental and

physical health correlates of loneliness, indicating their socio-political relevance. While we also aimed to study the cross-cultural generalizability of our results beyond the Netherlands, however, the available data does not allow us to provide a definite answer. Moving forward, we will need sufficiently powered studies across cultures. In the remainder of the discussion we outline a brief research agenda that could further disentangle the link found between loneliness and support for the populist radical right.

The association between loneliness and support for the populist radical right implies an interaction between nervous system states and political behavior, underscoring the need to consider the ways individual-level health is implicated in political phenomena moving forward (Tsakiris et al., 2021). Although, the majority of the samples we report here did not allow us to disentangle the causal direction of this association and the cross-lagged panel model demonstrates inconclusive evidence (Vaisey and Miles, 2017). The findings do indicate however, that just as loneliness may be contributing to political behavior, the political climate may also, be causing or exacerbating loneliness. In a socio-political context where there is hostility toward populist radical right parties for example, alignment with them may increase feelings of social stigmatization. Especially, as "… being surrounded by people who see the world differently from oneself, even if one is friends with them, may be a risk factor for loneliness" (Baek et al., 2023, p. 1). Our work, and that of others (Becker et al., 2021; Nayak et al., 2021; Smith, 2022; Tsakiris et al., 2021), alludes to the reality that politics can be the cause of mental health problems. We welcome more research that explores the

interplay between loneliness (and (mental) health) and support for populist radical right parties (and politics, more generally).

The results from the exploratory (populist) tests suggest it may not be these parties' nativism but their *populism* that drives the results. Populist rhetoric, whether right-wing or left-wing, unites voters through portraying a simplified, and dichotomized, perception of the world. As polarization increases, the chasm between people's perceived realities grows wider (Hogg and Gøtzsche-Astrup, 2021; Jetten et al., 2021; Uysal et al., 2022). When physiologically dysregulated, one's perceptions may be more easily manipulated: something populist actors, and their creation of an 'us' and a 'them' might be tapping into. Future studies could also however, want to investigate whether there is another characteristic that these parties share that causes the association with loneliness. For instance, it could be ideological *radicalism* that attracts lonely individuals. Design-based approaches have the potential to investigate the association between loneliness, populist radical right *and* populist support moving forward (for instance, Bakker et al., 2021; Gomez and Ramiro, 2022; Hunter, 2024). The rise of populism across the globe illustrates the urgent need to do so.

Importantly, the socio-political implications of loneliness are most likely more far reaching than support for populism. Bierwiaczonek and colleagues (Bierwiaczonek et al., 2024) have, for example, found an association between conspiratorial beliefs held in midlife and loneliness across the lifespan. One might wonder whether loneliness is the cause or consequence of other relevant political phenomena, such as polarization, (online) political extremism or political violence. While social scientists have studied the effects of social isolation (Bolet, 2021; Coffé et al., 2007; Langenkamp and Bienstman, 2022; Rydgren, 2009; Veugelers, 2005), we hope the next generation will study the socio-political implications of loneliness and social isolation in conjoint.

Loneliness is - at least in some countries - positively associated with populist radical right support. Be it a right-wing populist or a sole populist phenomenon, the societal implications of our findings deserve attention from medical researchers, social scientists and policymakers: in order to generate policy that combats loneliness it is important to first, acknowledge that it has socio-political correlates. Additionally, we would like to highlight a need for interdisciplinary work regarding the relationship between health and politics. With loneliness and mental health crises on the rise, the latest being what's referred to as a "hopelessness crisis", the vitality of our democracies may only be as strong as the health of the citizens who inhabit them.

CRediT authorship contribution statement

Delaney Peterson: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Matthijs Rooduijn:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Conceptualization. **Frederic R. Hopp:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Conceptualization. **Gijs Schumacher:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Bert N. Bakker:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Funding acquisition, Conceptualization.

Ethics standards

Funding statement

Declaration of competing interest

The authors declare no conflicts of interest in this research.

Appendix A. Main analyses

Table 2
Summary statistics: The Netherlands.

Year	Loneliness	PRR	Populist	Age	Education	Female	Income	Interest Politics	Urban
2008	1.31 (0.39)	5.95%	19.85%	36.94 (20.72)	3.44 (1.49)	49.21%	1327.97 (7200.63)	1.97 (0.57)	
2009	1.31 (0.4)	8.96%	21.17%	37.67 (20.84)	3.45 (1.49)	49.33%	3409.52 (9501.15)	1.93 (0.58)	2.96 (1.28)
2010	1.32 (0.41)	15.67%	25.47%	39.01 (21.31)	3.4 (1.52)	49.44%	3268.67 (8565.47)	1.93 (0.59)	3 (1.29)
2011	1.33 (0.41)	14.07%	25.43%	40.15 (21.62)	3.41 (1.52)	49.28%	3071.97 (3764.11)	1.94 (0.61)	2.99 (1.28)
2013	1.32 (0.41)	11.21%	21.92%	41.9 (22.04)	3.48 (1.51)	49.13%	3144.07 (3280.36)	1.93 (0.6)	2.96 (1.28)
2014	1.32 (0.4)	13.63%	27.31%	42.7 (22.22)	3.52 (1.51)	49.25%	3118.15 (3738.78)	1.87 (0.62)	2.95 (1.27)
2015	1.33 (0.41)	16.69%	28.96%	41.86 (22.27)	3.62 (1.5)	49.27%	3169.32 (2988.53)	1.94 (0.62)	3.02 (1.3)
2017	1.33 (0.42)	18.26%	26.96%	44.06 (22.34)	3.65 (1.5)	49.16%	3256.52 (2701.46)	1.92 (0.62)	3.02 (1.29)
2018	1.34 (0.43)	15.54%	24.12%	42.78 (22.33)	3.71 (1.51)	49.11%	3323.44 (2859.48)	1.96 (0.62)	3.09 (1.3)
2019	1.33 (0.43)	18.1%	26.67%	44.03 (22.52)	3.73 (1.51)	48.96%	3467.95 (3616.46)	1.95 (0.62)	2.86 (1.41)
2020	1.35 (0.43)	15.57%	21.42%	45.37 (22.6)	3.75 (1.51)	49.06%	3544.43 (2360.23)	2.11 (0.64)	2.84 (1.41)
2021	1.33 (0.43)	12.03%	18.58%	44.31 (22.7)	3.81 (1.51)	48.95%	3722.01 (3518.83)	2.13 (0.64)	2.88 (1.42)

Table 2 (*continued*)

Year	Loneliness	PRR	Populist	Age	Education	Female	Income	Interest Politics	Urban
2022	1.33 (0.44)	16.37%	23%	45.33 (22.94)	3.82 (1.51)	48.96%	3866.59 (3826.43)	2.14 (0.63)	2.85 (1.42)
Pooled	1.35 (0.41)	13.2%		41.7 (22.1)	3.58 (1.52)	49.18%	3172 (5159)	1.97 (0.62)	2.96 (1.33)
Flycatcher (2023)	1.38 (0.49)	10.73%	15.97%	53 (16.3)	4.91 (1.7)	45.04%	2.3 (1.14)		

Note: For the coding of the study variables, see Table 10.

Table 3

Summary statistics by country.

Country	Loneliness	Age	Education	Urban	Female	PRR	Populist
Pooled	1.71 (0.87)	48.7 (17.4)	12.08 (4.61)	3.41 (1.27)	53.31%	16.95%	17.6%
Austria	1.43 (0.71)	51.52 (17.55)	11.47 (2.64)	3.21 (1.22)	53.63%	17.25%	19.82%
Croatia	1.8 (0.88)	44.91 (16.68)	12.36 (2.64)	3.36 (1.29)	52.73%	26.7%	33.19%
Denmark	1.72(0.86)	49.12(16.79)	13.92(7.28)	3.34(1.23)	53.1%	12.66%	
France	1.77 (0.97)	56.2 (16.78)	14.49 (5.81)	3.05 (1.18)	53.73%	8.43%	16.24%
Germany	1.5 (0.72)	51.68 (17.34)	12.8 (3.83)	3.19 (1.13)	48.03%	8.35%	16.84%
Hungary	1.76(0.99)	49.74(15.13)	12.13(2.76)	3.56(1.28)	57.3%	60.52%	
Sweden	1.7(0.86)	53.27(16.37)	13.32(3.47)	3.3(1.32)	55.11%	7.52%	
Switzerland	1.43 (0.66)	49.12 (17.58)	13.79 (3.47)	2.74 (1.07)	48.78%	14.15%	14.31%
Germany (Allbus)	1.5 (0.72)	51.56 (17.91)	3.49 (1.24)	3.2 (1.13)	49%	2.22 (2.43)	

Note: For the coding of the study variables, see Table 10.

Table 4
Pooled loneliness mean and standard deviation per Dutch Party.

Party	Mean	Standard Deviation
SP	8.23	2.66
PvdD	8.31	2.72
GL	7.74	2.39
PvdA	7.77	2.35
D66	7.53	2.09
CU	7.54	2.09
CDA	7.59	2.12
SGP	7.65	2.18
VVD	7.48	1.99
PRR	8.27	2.68

Table 5
Pairwise p-values per party (Bonferroni-adjusted).

	SP	PvdD	GL	PvdA	D66	CU	CDA	SGP	VVD
PvdD	1.00								
GL	0.00	0.00							
PvdA	0.00	0.00	1.00						
D66	0.00	0.00	0.02	0.00					
CU	0.00	0.00	0.31	0.03	1.00				
CDA	0.00	0.00	0.28	0.00	1.00	1.00			
SGP	0.00	0.00	1.00	1.00	1.00	1.00	1.00		
VVD	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	
PRR	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 6
The Netherlands: loneliness and voting for the populist radical right - odds ratios and 90% confidence intervals.

Year	Odds Ratio	CI Lower	CI Upper
2008	1.115	0.995	1.243
2009	1.076	0.970	1.190
2010	1.093	1.013	1.178
2011	1.126	1.033	1.225
2013	1.140	1.043	1.243
2014	1.279	1.171	1.396
2015	1.234	1.147	1.327
2017	1.385	1.233	1.554
2018	1.105	0.979	1.243
2019	1.337	1.192	1.497

Table 6 (*continued*)

Year	Odds Ratio	CI Lower	CI Upper
2020	1.022	0.897	1.159
2021	1.195	1.045	1.362
2022	1.275	1.133	1.433
2023(Flycatcher)	1.220	1.091	1.359
Pooled	1.163	1.124	1.204

Table 7

The Netherlands: loneliness and intention to vote for a populist party - odds ratios and 90% confidence intervals.

Year	Odds Ratio	CI Lower	CI Upper
2008	1.101	1.028	1.178
2009	1.114	1.037	1.195
2010	1.184	1.111	1.261
2011	1.276	1.193	1.365
2013	1.015	0.945	1.089
2014	1.324	1.233	1.422
2015	1.285	1.207	1.369
2017	1.332	1.198	1.482
2018	1.162	1.050	1.286
2019	1.317	1.186	1.461
2020	1.082	0.966	1.210
2021	1.253	1.119	1.401
2022	1.233	1.107	1.371
2023(Flycatcher)	1.248	1.135	1.371
Pooled	1.218	1.189	1.248

Table 8

Cross country vote for the populist radical right - odds ratios and 90% CIs.

Country	Odds Ratio	CI Lower	CI Upper
Austria	0.973	0.797	1.174
Croatia	0.821	0.696	0.963
Denmark	1.201	1.007	1.423
France	1.077	0.917	1.257
Germany	1.011	0.812	1.240
Hungary	1.080	0.950	1.232
Switzerland	0.848	0.602	1.152
Sweden	1.185	0.978	1.423
Pooled	1.019	0.958	1.083

Table 9

Cross country vote for a populist party - odds ratios and 90% CIs.

Country	Odds Ratio	CI Lower	CI Upper
Austria	1.006	0.838	1.196
Croatia	0.890	0.766	1.031
France	1.006	0.891	1.132
Germany	1.076	0.923	1.248
Switzerland	0.872	0.624	1.180
Spain	0.955	0.804	1.124
Pooled	0.981	0.914	1.051

Appendix B

Table 10
Covariates per sample.

	Age	Education	Gender	Income	Political Interest	Place of Residence
Longitudinal Internet Studies for the Social Sciences Panel	Year birth	Highest level of education with diploma: (1) Primary school, (2) vmbo, (3) havo/vwo, (4) mbo, (5) hbo, (6) wo, (7) other	Male (1), fe-Male (2),	Net household income in integers.	(1) Very interested, (2) fairly interested and (3) not interested [re- verse coded]	(1) Extremely urban (2) Very urban (3) Moderately urban (4) Slightly urban (5) Not urban [reverse coded]
Flycatcher	In years	Please select the highest level school you completed: (1) Primary school (2) vmbo (3) havo (4) vwo (5) mbo (6) hbo (7) wo (8) other	Male (1), fe-Male (2),			(1) Rural area or vil- lage (2) Small town (3) Medium-size town (4) Large city.
International Social Survey Program	In years	How many years (full- time equiva- lent) have you been in formal education?	Male (1), fe-Male (2),			(1) A big city (2) The suburbs or outskirts of a big city (3) A town or a small city (4) A country village (5) A farm or home in the country. [reverse coded]
German General Social Survey	In years	How many years (full- time equiva- lent) have you been in formal education?	Male (1), fe-Male (2),		(1) Very strongly (2) Strongly (3) Middling (4) very little (5) not at all [reverse coded]	(1) A big city (2) The suburbs or outskirts of a big city (3) A town or a small city (4) A country village (5) A farm or home in the country. [reverse coded]

Table 11
Populist parties per country (International Social Survey Program).

Country	Populist Parties
Austria	Austrian Freedom Party; Liste Pilz
Croatia	Croatia Democratic Union of Slavonija and Baranja - HDSS; Bridge of Inde- pendent Lists – MOST; Living Wall; Party of Labour and Solidarity
Denmark	Danish People's Party
France	National Front/Rally; Left Front; Arise the Republic
Germany	Alternative for Germany; Party of Democratic Socialism (Die Linke)
Hungary	Movement for a Better Hungary (Jobbik Magyarors), Hungarian Civic Alliance - Christian Democratic People's Party
Spain	Pomedos
Sweden	Sweden Democrats
Switzerland	Swiss People's Party; Lega dei Ticinese (Lega); Swiss Democrats, Move- ment of the Citizens of French Speaking Switzerland

Appendix C. Robustness checks

Table 12
Health correlates of loneliness - odds ratios and 90% confidence intervals.

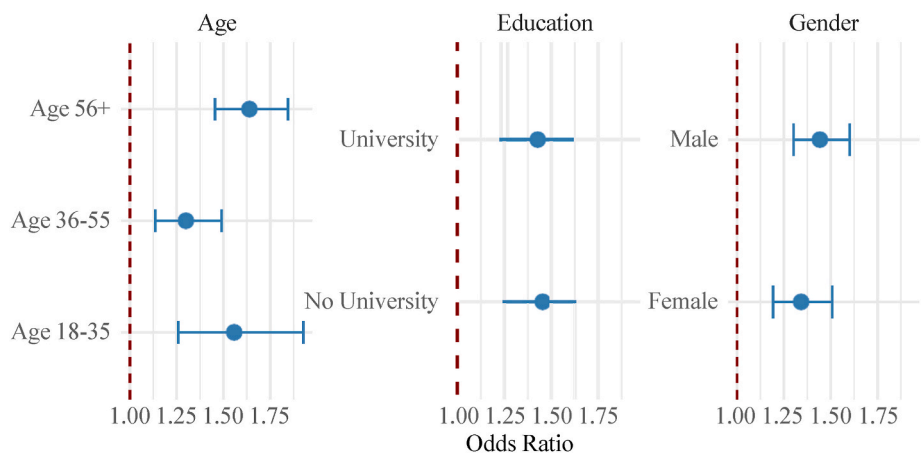| Variable	Odds Ratio	CI Lower	CI Upper
Anxiety/Depression	1.533	1.445	1.625
High Blood Pressure	1.172	1.122	1.224
Heart Disease	1.218	1.134	1.306

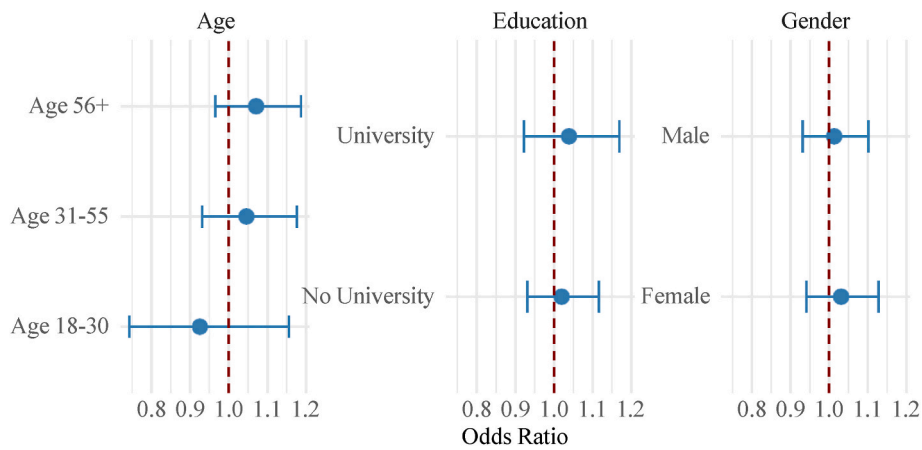**Fig. 4.** Subgroup analyses - longitudinal internet studies for the social sciences panel.

Fig. 5. Subgroup analyses - International Social Survey Program.
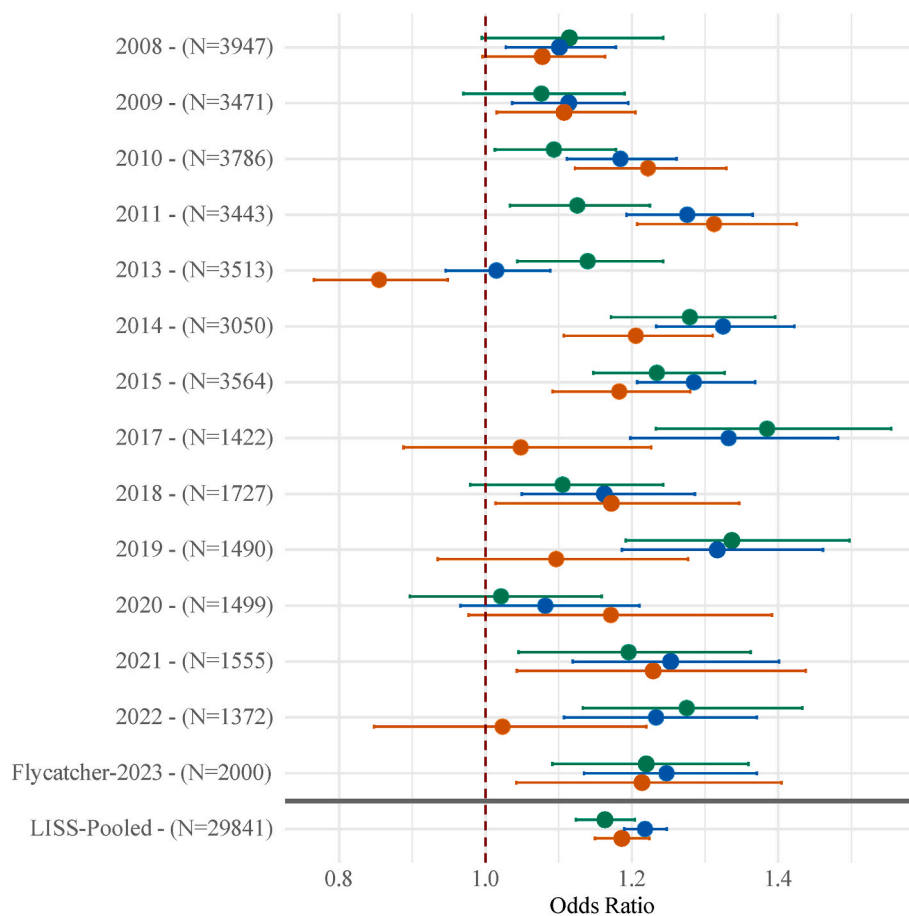
Fig. 6. Odds ratios of the effect of loneliness on intention to vote for the populist radical right (Including the Socialist Party). Note: The dots are the odds ratios of loneliness (standardized), the bars represent the preregistered 90% confidence intervals. Green refers to populist radical right support (Freedom Party(PVV), Forum for Democracy (Fvd) & The Right Answer 21 (JA21). Blue refers to support for populism (Populist radical right parties *and* the populist Socialist Party (SP). Red refers to the Socialist Party (SP) only.

Data availability

You can request access to the data via the following links: LISS (https://www.lissdata.nl/use-the-panel), ISSP (https://www.gesis.org/en/issp/data-and-documentation/social-networks/2017), ALLBUS (https://www.gesis.org/en/allbus). Access to the Flycatcher data can be found on the Open Science Framework (OSF): (https://osf.io/qf3um/).

References

Alsubheen, S., Oliveira, A., Habash, R., Goldstein, R., Brooks, D., 2023. Measurement properties and cross-cultural adaptation of the de jong gierveld loneliness scale in adults: A systematic review. Eur. J. Psychol. Assess. 1–15.

Baek, E.C., Hyon, R., López, K., Du, M., Porter, M.A., Parkinson, C., 2023. Lonely individuals process the world in idiosyncratic ways. Psychol. Sci. 34 (6), 683–695.

Bakker, B.N., Schumacher, G., Rooduijn, M., 2021. The populist appeal: personality and antiestablishment communication. J. Polit. 83 (2), 589–601.

Becker, J.C., Hartwich, L., Haslam, S.A., 2021. Neoliberalism can reduce well-being by promoting a sense of social disconnection, competition, and loneliness. Br. J. Soc. Psychol. 60 (3), 947–965.

Bierwiaczonek, K., Fluit, S., von Soest, T., Hornsey, M.J., Kunst, J.R., 2024. Loneliness trajectories over three decades are associated with conspiracist worldviews in midlife. Nat. Commun. 15 (1), 3629.

Bolet, D., 2021. Drinking alone: local socio-cultural degradation and radical right support—the case of british pub closures. Comp. Polit. Stud. 54 (9), 1653–1692.

Cacioppo, J.T., Cacioppo, S., 2018. The growing problem of loneliness. Lancet 391 (10119), 426.

Cacioppo, J.T., Hawkley, L.C., Ernst, J.M., Burleson, M., Berntson, G.G., Nouriani, B., Spiegel, D., 2006. Loneliness within a nomological net: an evolutionary perspective. J. Res. Pers. 40 (6), 1054–1085.

Coffé, H., Heyndels, B., Vermeir, J., 2007. Fertile grounds for extreme right-wing parties: explaining the vlaams blok's electoral success. Elect. Stud. 26 (1), 142–155.

De Jong Gierveld, J., Van Tilburg, T., 2010. The de jong gierveld short scales for emotional and social loneliness: Tested on data from 7 countries in the un generations and gender surveys. Eur. J. Ageing 7, 121–130.

de Jong-Gierveld, J., Kamphuis, F., 1985. De jong-gierveld loneliness scale. Retrieved March 4, 2024, from. https://doi.org/10.1037/t07019-000.

de Jong-Gierveld, J., van Tilburg, T.G., Dykstra, P.A., 2006. Loneliness and social isolation. In: The Cambridge Handbook of Personal Relationships. Cambridge University Press, pp. 485–500.

Elovainio, M., Hakulinen, C., Pulkki-Råback, L., Virtanen, M., Josefsson, K., Jokela, M., Vahtera, J., Kivimäki, M., 2017. Contribution of risk factors to excess mortality in isolated and lonely individuals: an analysis of data from the UK biobank cohort study. Lancet Public Health 2 (6), e260–e266.

Erzen, E., Çikrikci, Ö., 2018. The effect of loneliness on depression: a meta-analysis. Int. J. Soc. Psychiatr. 64 (5), 427–435.

Farber, B.A., 2018. Clowns to the left of me, jokers to the right. In: Politics and Psychotherapy, vol. 2018.

Ford, B.Q., Feinberg, M., 2020. Coping with politics: the benefits and costs of emotion regulation. Curr. Opin. Behav. Sci. 34, 123–128.

für Sozialwissenschaften, G.-.L.-I., 2019. German general social survey - allbus 2018. https://doi.org/10.4232/1.13325.

Gelman, A., Carlin, J., 2014. Beyond power calculations: assessing type s (sign) and type m (magnitude) errors. Perspect. Psychol. Sci. 9 (6), 641–651.

Golder, M., 2016. Far right parties in europe. Annu. Rev. Polit. Sci. 19 (1), 477–497.

Gomez, R., Ramiro, L., 2022. Radical Left Voters in Western Europe. Routledge.

Group, I.R., 2019. International social survey programme: social networks and social resources - issp 2017. https://doi.org/10.4232/1.13322.

Hamaker, E.L., Kuiper, R.M., Grasman, R.P., 2015. A critique of the cross-lagged panel model. Psychol. Methods 20 (1), 102.

Hawkins, K.A., 2010. Venezuela's Chavismo and Populism in Comparative Perspective. Cambridge Univer- sity Press.

Hertz, N., 2020. The Lonely Century: A Call to Reconnect. Hachette UK.

Hogg, M.A., Gøtzsche-Astrup, O., 2021. Self-uncertainty and populism: why we endorse populist ideologies, identify with populist groups, and support populist leaders. In: The Psychology of Populism. Routledge, pp. 197–218.

Hunter, A., 2024. The populist impulse: cognitive reflection, populist attitudes and candidate preferences. Elect. Stud. 92, 102868.

Jetten, J., Mols, F., Steffens, N.K., 2021. Prosperous but fearful of falling: the wealth paradox, collective angst, and opposition to immigration. Pers. Soc. Psychol. Bull. 47 (5), 766–780.

Kavanagh, N.M., Menon, A., Heinze, J.E., 2021. Does health vulnerability predict voting for right-wing populist parties in europe? Am. Polit. Sci. Rev. 115 (3), 1104–1109.

Lakens, D., 2022. Sample size justification. Collabra: Psychology 8 (1), 33267.

Langenkamp, A., 2021. Lonely hearts, empty booths? the relationship between loneliness, reported voting behavior and voting as civic duty. Soc. Sci. Q. 102 (4), 1239–1254.

Langenkamp, A., Bienstman, S., 2022. Populism and layers of social belonging: support of populist parties in europe. Polit. Psychol. 43 (5), 931–949.

Mudde, C., 2007. Populist Radical Right Parties in Europe *(No Title)*.

Nayak, S.S., Fraser, T., Panagopoulos, C., Aldrich, D.P., Kim, D., 2021. Is divisive politics making americans sick? associations of perceived partisan polarization with physical and mental health outcomes among adults in the United States. Soc. Sci. Med. 284, 113976.

O'Rourke, H.M., 2024. The global crisis of loneliness: a call for contextualised, mechanistic research. Lancet Healthy Longev.

Otjes, S., Krouwel, A., 2015. Two shades of green? the electorates of greenleft and the party for the animals. Environ. Polit. 24 (6), 991–1013.

Penning, M.J., Liu, G., Chou, P.H.B., 2014. Measuring loneliness among middle-aged and older adults: The ucla and de jong gierveld loneliness scales. Soc. Indicat. Res. 118, 1147–1166.

Petersen, M.B., Osmundsen, M., Arceneaux, K., 2023. The "need for chaos" and motivations to share hostile political rumors. Am. Polit. Sci. Rev. 117 (4), 1486–1505.

Putnam, R.D., 2000. Bowling Alone: the Collapse and Revival of American Community. Simon; schuster.

Roche, M.J., Jacobson, N.C., 2019. Elections have consequences for student mental health: an accidental daily diary study. Psychol. Rep. 122 (2), 451–464.

Rooduijn, M., 2019. State of the field: how to study populism and adjacent topics? a plea for both more and less focus. Eur. J. Polit. Res. 58 (1), 362–372.

Rooduijn, M., Pirro, A.L., Halikiopoulou, D., Froio, C., Van Kessel, S., De Lange, S.L., Mudde, C., Taggart, P., 2023. The populist: a database of populist, far-left, and far-right parties using expert-informed qualitative comparative classification (eiqcc). Br. J. Polit. Sci. 1–10.

Russell, D.W., 1996. Ucla loneliness scale (version 3): reliability, validity, and factor structure. J. Pers. Assess. 66 (1), 20–40.

Rydgren, J., 2009. Social isolation? social capital and radical right-wing voting in western europe. J. Civ. Soc. 5 (2), 129–150.

Rydgren, J., 2011. A legacy of 'uncivicness'? social capital and radical right-wing populist voting in eastern europe. Acta Politic. 46, 132–157.

Scherpenzeel, A.C., Das, M., 2010. True" Longitudinal and Probability-Based Internet Panels: Evidence From the Netherlands. In: Das, M., Ester, P., Kaczmirek, L. (Eds.), Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies. Taylor & Francis, Boca Raton, pp. 77–104.

Smith, K.B., 2022. Politics is making us sick: the negative impact of political engagement on public health during the trump administration. PLoS One 17 (1), e0262022.

Tsakiris, M., Vehar, N., Tucciarelli, R., 2021. Visceral politics: a theoretical and empirical proof of concept. Philos. Trans. Roy. Soc. B 376 (1822), 20200142.

Uelle, M., 2024. The hurt of loneliness and social isolation. Nature 2, 255–256.

Uysal, M.S., Jurstakova, K., Uluşahin, Y., 2022. An integrative social identity model of populist leadership. Soc. Pers. Psychol. Compass 16 (12), e12713.

Vaisey, S., Miles, A., 2017. What you can—and can't—do with three-wave panel data. Socio. Methods Res. 46 (1), 44–67.

Valtorta, N.K., Kanaan, M., Gilbody, S., Ronzi, S., Hanratty, B., 2016. Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies. Heart 102 (13), 1009–1016.

Veugelers, J., 2005. Ex-colonials, voluntary associations, and electoral support for the contemporary far right. Comp. Eur. Polit. 3, 408–431.

Wang, F., Gao, Y., Han, Z., Yu, Y., Long, Z., Jiang, X., Wu, Y., Pei, B., Cao, Y., Ye, J., et al., 2023. A systematic review and meta-analysis of 90 cohort studies of social isolation, loneliness and mortality. Nat. Human Behav. 7 (8), 1307–1319.