



Does population decline lead to a "populist voting mark-up"? A case study of the Netherlands

Eveline S. van Leeuwen | Solmaria Halleck Vega | Vera Hogenboom

Urban Economics Group, Wageningen University & Research, the Netherlands

Correspondence

Eveline van Leeuwen, Wageningen University & Research - Urban Economics Group, Hollandseweg 1, Wageningen 6700 HB, the Netherlands.
Email: eveline.vanleeuwen@wur.nl

Abstract

The main thesis of this paper is that people in areas of (expected) population decline vote more populist to express their discontent about the current and future state of their place of residence. In many ways a "populist voting mark-up" could be expected, as declining areas often are associated with being forgotten, fomenting societal discontent and mistrust in established political parties ultimately expected to lead to more populist votes. Using the outcomes of the Dutch national elections in 2012 and 2017, we link shares of populist votes for the PVV (Party for Freedom) and SP (Socialist Party) to indicators of population decline, as well as other demographic ("compositional effects"), local and regional characteristics ("contextual effects") to appraise what causes higher rates of votes for populist parties in regions of decline. We do not find a "populist voting mark-up" for declining regions when controlling for contextual effects. However, we do find that both the compositional and the contextual circumstances in areas of population decline are in such a way that they provoke discontent expressed in voting. We also conclude that it is very important to distinguish between different parties when

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2020 The Authors. Regional Science Policy & Practice published by John Wiley & Sons Ltd on behalf of Regional Science Association International



their party programs are as contrasting as in the case of the PVV and the SP. Their different focus on immigration (PVV) and jobs (SP) is clearly visible in the results.

KEYWORDS

broad welfare, population decline, populist voting, the Netherlands

JEL CLASSIFICATION

D72; J11; R12; I3

1 | INTRODUCTION

Within the current Regional Science literature, there is growing interest in changing spatial voting patterns, in particular the geography of recent surges in populism (e.g., Becker, Fetzer, & Novy, 2017; Dijkstra, Poelman, & Rodríguez-Pose, 2020; Gordon, 2018; Los, McCann, Springford, & Thissen, 2017; McCann, 2018, 2020; Rodríguez-Pose, 2018). These patterns are so interesting because they provide *indirect* information about the *perception* of welfare, happiness or discontent.

The information is *indirect* because casting a vote is influenced by a myriad of factors, such as: (i) party programme; (ii) characteristics of a candidate; (iii) regional socio-economic circumstances; and (iv) strategic considerations related to other parties or the government in general. In addition, voting does not provide information about actual levels of welfare, but of the *perception* of welfare. It might as much be influenced by objective factors (e.g., income or (un)employment levels), as by more subjective factors (e.g., relative income compared to other regions such as to the capital city), resulting in a feeling of inequality and “being left behind” (Dijkstra, Poelman, & Rodríguez-Pose, 2020; Garretsen, Stoker, Soudis, Martin, & Rentfrow, 2018; Gordon, 2018; Rodríguez-Pose, 2018).

In this paper, we are particularly interested in regions that face population decline. Population decline can have a negative effect on the stability of the economy and society, especially when at the regional level a feeling of inequality arises and people in declining areas feel left behind by the national government (Ubarevičienė, Van Ham, & Burneika, 2016). This feeling can be fed by higher unemployment levels, a decreasing supply of facilities and properties that are difficult to sell. In some cases, people are “locked in” due to the inability to sell their property and move somewhere else. The inability of local governments to address livability and the (perceived) disinterest of the national government often results in lower levels of government trust and a lack of confidence in politicians (Obbink, 2016). This “societal discontent” has been linked to rising Euroscepticism, with studies on different but related focuses, namely on anti-EU voting or on determinants shaping citizens’ attitudes towards the EU (cf. Dabrowski, Stead, & Mashhoodi, 2019; Dijkstra, Poelman, & Rodríguez-Pose, 2020). Here, effects of demographic developments such as ageing population and low population density is intricate and results have been mixed, meriting further attention.

Overall, the Dutch population is growing. Nevertheless, one in five municipalities faces population decline (Van Weezel, 2017). Although the decline should be labeled as “mild” compared to most EU regions, according to the Dutch Statistics, in these declining areas only around 26% of the inhabitants trust the national politics, whereas this is 39% in areas of growth. These lower levels of trust can lead to more voters for populist parties as a way of protesting against the current system and its politicians. According to Vossen (2012, p. 32), inhabitants of shrinking regions “feel that the current establishment fails to serve the interest of the people.” Since population decline can encompass both sorting of people and their socio-economic context, it is therefore apposite to raise the question: to what extent do regions in decline face higher levels of populist voting when controlling for “compositional effects” (e.g., demographic factors) and “contextual effects” (e.g., regional economic conditions)?



Like more European countries, the Netherlands has also faced a rise in parties labelled as populist. These include the PVV (Party for Freedom), the SP (Socialist Party), DENK and more recently the FvD (Forum for Democracy). Notwithstanding their similarities of having a charismatic leader and promoting anti-establishment sentiments, these parties actually exhibit quite distinctive party lines. In this respect, we have to be careful in interpreting votes for these parties in a similar way, which can also be a significant distinction to make in other countries with different political spectrums.

For our study of the Netherlands, we distinguish between the largest right-wing party (PVV) and the most dominant left-wing populist party (SP). The empirical analysis uses outcomes from the 2012 and 2017 national elections to appraise the impact (or lack thereof) of population decline, along with a range of other potentially relevant factors. The relationship between populist voting in national elections and population decline has not been addressed before, nor the intricacies of populism encompassed in the different types of political parties in this context. Hence, it is of important to explore whether determinants have different impacts on the voting behaviour for these parties, and the wider policy implications.

The remainder of this paper is structured as follows. First, we outline the related literature, also in context to the situation of declining regions in the Netherlands, spatial voting patterns and particulars of the populist parties. Accordingly, we present the relevant factors, method and data in Section 3, followed by the empirical results and discussion in Sections 4 and 5. Finally, we provide conclusions, policy implications, and potential directions for further research.

2 | THE IMPACT OF POPULATION DECLINE ON POPULIST VOTING

2.1 | Voter behaviour

Why do citizens vote in democratic countries? Clearly, somehow, the gain from voting must make up for any deficit caused by the cost of participating for a citizen (Harder & Krosnick, 2008). From earlier research, we know demographic factors play an important role by influencing both the motivation, ability to vote and the barriers to voting. Citizens with a higher education level are more likely to vote and have a higher voter turnout (Shields & Goidel, 1997). Education may increase the skills of a person to understand how the political system works which lowers the cost to vote. Wealthier people vote more than less wealthy citizens, possibly, because they have more at stake in the elections than less wealthy citizens (Harder & Krosnick, 2008). Also, age plays a role. Citizens are more likely to vote when they are in their middle adulthood, while after the age of 75 people vote less. Again, the middle adulthood may have gained more information about the political system and therefore are more motivated to vote. Another reason could be that this group of citizens has the most at stake in the outcome of the elections (Harder & Krosnick, 2008). Ethnicity is generally considered to not have a significant effect when controlling for income and education (see e.g., Bevelander & Pendakur, 2014). Of course, due to historical reasons, in some countries certain minorities might vote less often. Gender appears to have no significant effect as well.

In addition, regional/local factors impact voter's turnout. The motivation to vote, for example, is often affected by: (i) a sense of responsibility affected by local norms and social pressure; and (ii) experience with and involvement in the local political/governmental system. First of all, local norms and social pressure are often associated with stable populations: a more stable population increases feelings of identification and group solidarity (Ashworth, 2012; Hoffmann-Martinot, 1994) and thereby increases social norms/pressure towards voting. Next to stability, also homogeneity of a neighborhood/region in terms of socio-economic, racial or ethnic characteristics is known to lead to higher voter turnout due to the positive impact on group solidarity and cohesion (Smeets, 1995). As people are more integrated into a group, for example by doing volunteering work, they are more likely to influence the group values of voting (Smeets, 1995). Also, population density plays a role. Since a higher population density often leads to a weakening of social structures and social pressure (Hoffmann-Martinot, 1994), voter turnouts are generally lower in high density areas.



A second important factor is the trust in the local and national political system. When citizens believe that the system is corrupt, it will lower their motivation to participate in politics. Less satisfied citizens are less likely to turn out to vote and participate in politics (Flavin & Keane, 2012; Harder & Krosnick, 2008). Immerzeel and Pickup (2015) find that in particular young residents from Eastern European countries are less likely to vote when right wing populist parties with strong negative messages about society and immigrants become more successful. However, this is not clear-cut, as the disgruntled population could also have a greater incentive to vote as Immerzeel and Pickup (2015) find for Western European countries.

2.2 | Populist voting

Populism is described by Canovan (1999) as an appeal to “the people” against both the established structure of power and the dominant ideas and values of society. Populist politicians show criticism to the users of the system: the elite that acts in their own interest instead of listening to the people (Vossen, 2012). The contradiction in society between people and elites also forms the basis with which the populist politician distinguishes themselves from the non-populists: the corruptly established political order that fails to serve the interests of the people (Vossen, 2012). Populism can be divided in three directions (Schumacher & Rooduijn, 2013):

1. Right and nationalistic-populism: an ethnic homogeneous nation feels threatened by immigrants.
2. Liberal populism: opposes themselves from the bureaucratic elite serving their own interest first instead of serving the country's interests
3. Left populism: the people oppose themselves from the elite of capitalism and bureaucrats.

Why do people vote for populist parties? People vote for populists because they hold protest attitudes, which show similarity with the anti-elitist critique populist parties offer (Laclau, 2005; Mény & Surel, 2002). The elite does not know what the ordinary people consider important and thus cannot represent their interests. This feeling of anti-elitism is one important reason for voting for a populist party, which is called a protest vote (Belanger & Aarts, 2006). The second reason is the strong and personalistic leadership in populist parties. Most populists want to reduce the distance between the ordinary people and the state by electing a strong personalistic leader that instinctively know what the people want (Mudde, 2007). This personalistic leader is a person which people can relate to and who knows the interest of the people.

In the Netherlands, the parties that are often labelled as populist are the SP (Left populism), Leefbaar Nederland (Liberal populism) and the PVV (Right and nationalistic-populism) (Lucardie, 2010; Voerman, 2009).¹ Between 2012 and 2017, the two largest populist parties were SP and PVV (20% of total votes). SP, “the socialist party” has a strong focus on (un)employment of the working class and an equal distribution of welfare and health care. The party has a strong local and regional anchoring. The party used to have a charismatic leader, Jan Marijnissen, who stepped down in 2008. Since then, several leaders could not match his success. PVV, the party for freedom, has always been organized around one charismatic person, Geert Wilders, with limited influence from local members. In general, the PVV is anti-Islam, anti-EU and anti-immigrants, they are pro-health care and more power for the citizens.

2.3 | Population decline and the impact on compositional and contextual effects

Population decline is multifaceted. It can be caused by economic, environmental or social factors. Different causes may have different impacts. The Dutch government makes a distinction between “declining” and “anticipating” areas

¹More recently, also the populist parties DENK and FvD joined. Typical non-populist parties are PvdA, CDA, VVD, D66, GroenLinks, SGP, ChristenUnie, de Partij voor de Dieren and 50Plus (Lucardie, 2010).

based on the forecasts from 2014 (Rijksoverheid, 2018). In declining regions, the population is expected to decrease by at least 12.5% until 2040. Furthermore, the number of households will be decreasing by around 5%. In addition, there are areas where the population is declining less rapidly, but where a decline is anticipated in the (near) future. In these anticipation areas, it is expected that the number of inhabitants or the number of households will decrease by at least 2.5% until 2040. See also Figure 6 in the Methods section).

It is evident from Figure 1 that there is much variation in population developments among the Dutch municipalities; stronger decline is predominantly experienced in more peripheral areas, with the exception of areas with and/or close to a larger city (e.g., Groningen in the Northeast). The effect of decline caused by the migration of skilled workers (due to the closure of a large factory) or decreasing fertility rates will be very different (Franklin & van Leeuwen, 2018). Anyway, decline generally impacts both the composition of areas and the socio-economic context.

First of all, due to selective outmigration, that is, migration of those that have the possibility to leave, it is particularly the less flexible and often lower educated people that stay behind. In many declining regions, the composition of the population consists of less young people and more elderly (Verwest, Sorel, & Buitelaar, 2009). Population decline also has a major effect on the housing market (Haartsen & Venhorst, 2010; Haase, Seppelt, & Haase, 2008; Kabisch, Haase, & Haase, 2006). It results in a lower demand for the existing housing stock, which often leads to a fall in housing prices and smaller investments in real estate. The falling housing prices and depreciating mortgage values have problematic effects for property owners who can become "locked-in," and the affected neighborhoods (Kabisch, Haase, & Haase, 2006; Van Dalen & Henkens, 2011). House prices also show much heterogeneity, as illustrated in Figure 2 with recent average house prices that are for sale being, in general, much lower again in municipalities more at the periphery, especially in the North compared to those closer to the Randstad.

Livability, an important contextual factor, is strongly related to the quality of the living environment and the social climate of the neighbourhood (Wiechmann, 2008). Out (2011) defines it as that the environment fits the needs

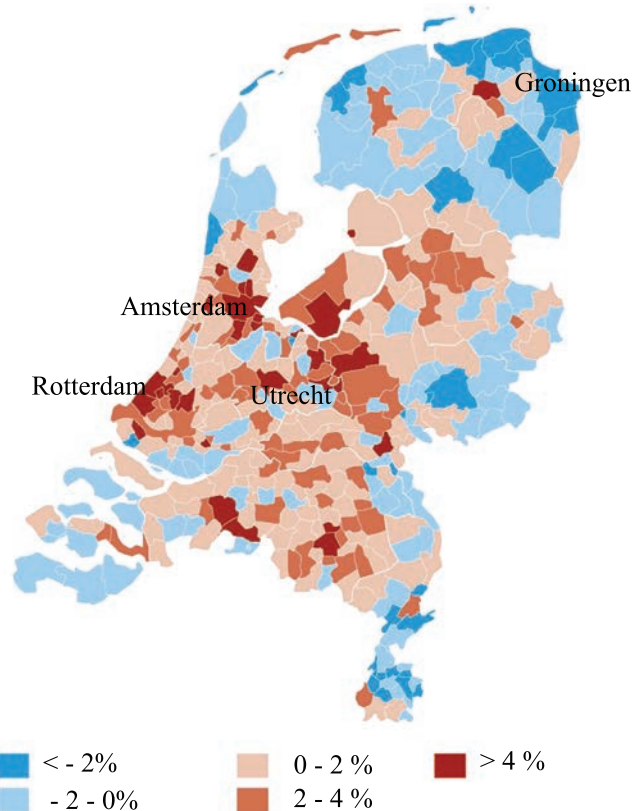


FIGURE 1 Population development at the municipality level between 2011 and 2016

Source: CBS, 2016

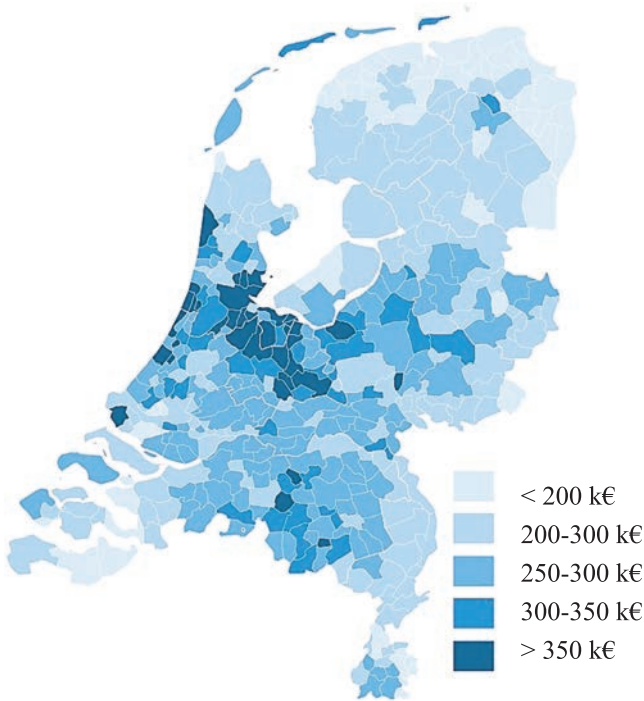


FIGURE 2 Average prices of houses that are for sale at the municipality level in 2017

Source: CBS, Kadaster (2017)

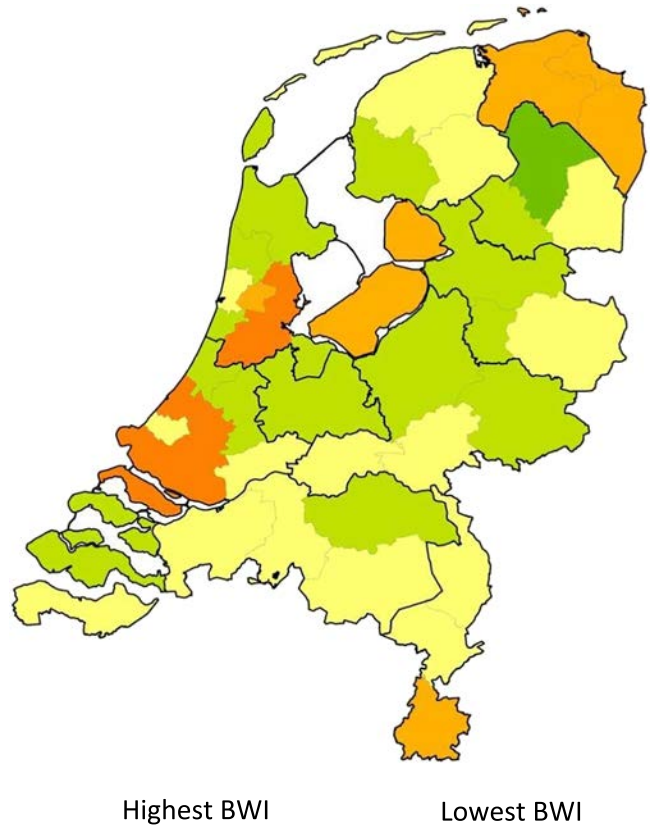
of the people living there. In declining regions, this “fit” can be negatively affected by a decline in market and non-market services due to lower numbers of (potential) customers. In the Netherlands, public budgets are based upon the number of inhabitants, and when this decreases, so does the budget (Van de Kaa, 1987). Consequently, it can be a real challenge to maintain a minimum service level provision of public facilities and infrastructure with a decreasing budget (Franklin & Van Leeuwen, 2018). When public facilities need to be closed, it often means that the remaining ones are difficult to be reached by certain groups of people and that the decline in services most strongly impacts the vulnerable groups of our society (Hospers & Reverda, 2014). The decline in services and infrastructure might also push local firms to move or close their business, resulting in higher unemployment levels.

These (potential) threats might not only have a direct, but also an indirect effect when they prevent people and firms from becoming involved in those areas that are labelled as “declining” or “anticipating.” This might turn the classification into a self-fulfilling prophecy causing a negative spiral of social and economic developments.

However, population decline is not only a bad thing and potential threats might result in stronger bonding within the community. Declining municipalities do have a high form of social cohesion, with close contacts, a close community and high levels of participation (Hospers & Reverda, 2014; Moerkamp, 2012). As a result, the satisfaction of the social climate in shrinking municipalities is higher than in the other parts of the Netherlands (Leidemeijer & Marlet, 2011). Delken (2008) and Leidemeijer and Marlet (2011) also find that inhabitants of shrinking municipalities are relatively happy with their life. An important aspect of livability is social contact with one’s neighbours and a collective feeling of being proud of one’s community increasing the livability (Out, 2011).

Clearly, objective measures of economic growth and subjective measures of wellbeing not always overlap. Recently, a growing number of researchers started to look at the concept of “Broader welfare.” In the Netherlands, since 2018, the national government commissioned a yearly evaluation of wellbeing in the Netherlands, not only taking into account GDP but also other indicators including environment, health, education, labor, security, trust and inequality. In addition, the University of Utrecht and the Rabobank developed in 2016 a broader welfare index (BWI), which also includes happiness and takes a regional perspective (see Figure 3). The map shows that in the Amsterdam area, Delft and the northern region of Delfzijl the levels of broader welfare are very low. While the latter

FIGURE 3 Broader Welfare Index at labor market regions (COROP) in 2017
 Source: Badir, Van Bavel, Hardeman, & Rijpma (2017)



region also scores low on narrow measures of welfare, that does not hold for the Amsterdam region, which is one of the best performing regions in many ways. When comparing with unemployment levels (Figure 4), it is also notable to observe that there is not always a clear overlap (e.g., Southwest-Friesland and Northeast-North-Brabant). This makes it insightful to incorporate, along with more traditional economic measures, subjective ones.

3 | RELEVANT FACTORS, METHOD AND DATA

As mentioned in the previous section, populist voting is often interpreted as a voice of protest. Protest against the elite, against people that are better off, against growing uncertainties in life. Populist voting is also associated with the feeling of “being left behind” as a region as a whole by the national government. As highlighted, this disenchantment can further reinforce potential negative effects that population decline can have on the stability of the economy and society (Ubarevičienė, Van Ham, & Burneika, 2016). Population decline, in turn can encompass a myriad of factors such as less access to facilities. To better understand if population decline results in more votes for populist parties, we propose a model that explores the relationship between share of populist votes in a certain area, explained by (expected) population decline, as well as compositional and contextual characteristics of the area.

Population decline is taken on board through the classification of the government into “normal,” “declining” and “anticipating” regions. This classification is often used in politics and the media, and as such can impact the feeling of discontent of the population. In addition, we also take the long term (since 1990) population development into account.

In our approach, in addition to population decline, we also focus on other demographic, local and regional characteristics to appraise what causes higher rates of votes for populist parties in regions of decline. We label the

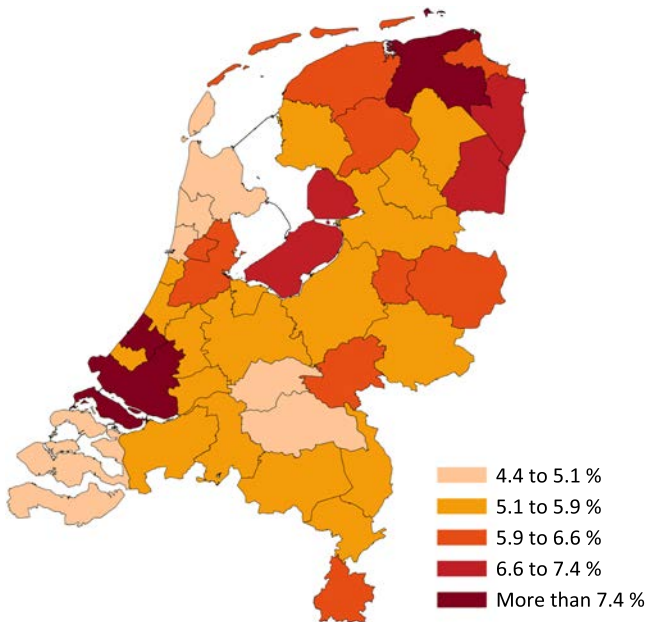


FIGURE 4 Unemployment levels at labourmarket regions (COROP) in 2016
Source: CBS

demographic factors as “compositional effects,” and the local and regional characteristics as “contextual effects,” leading to the following model:

$$PopulistVote_n = \alpha + \beta Shrinking_m + \rho Anticipating_m + \delta CompositionalEffects_{n(m)} + \delta ContextualEffects_{m(r)} + \varepsilon_n \quad (1)$$

where *PopulistVote* denotes the percentage share of votes for populist parties and subscripts denote neighbourhoods (*n*), municipalities (*m*), and regions (*r*). We deliberately estimate two different models for SP and PVV because, although the parties are both populist, they do have different political stands. Lucardie (2010) and Voerman (2009) describe the SP as left-populism and the PVV more as right-national populism. Therefore, we expect certain factors to have a different impact on the share of votes for the individual parties. We also estimate model (1) using ordinary least squares with robust standard errors for both the 2012 and 2017 national elections. Shrinking and Anticipating is an indicator variable (reference category Normal) of population decline for the Dutch municipalities. This is our base model, which is then extended with compositional and contextual effects related to relevant aforementioned factors, and ε denotes the error term.

Table 1 provides an overview of all variables, including the data sources (descriptive statistics in Appendix Table A1). For the dependent variable, we gathered data on the percentages of votes from the polling stations for the 2012 (9,108 stations) and 2017 (8,748 stations) of the Dutch general elections. Using the six-digit postal codes of these polling stations, we linked them to the neighbourhood (“wijk”) code from the CBS Statline data.² Focusing on the PVV and the SP parties, in 2012, both received around 10% of the total votes, which remained constant for the SP in 2017, while the PVV managed to collect over 13% of all votes. Jointly, they received 20% of the votes in 2012, rising to 23% in 2017 (see Figure 5). Of course, these are only national totals, when looking at the descriptive

²Between the years 2012 and 2017 some municipalities have been reorganized, mainly due to a merging of smaller ones; we used the administrative boundaries that were valid from the particular voting year. There was an outlier detected in voter turnout corresponding to the Wadden Islands. Since many individuals who have voted there are not actual inhabitants, we decided to remove these neighbourhoods, namely from Texel, Terschelling, Schiermonnikoog, Vlieland and Ameland. The 2012 data is retrieved from Data Overheid, while the 2017 data from Geodan.

**TABLE 1** Overview of variables

Variables	Years National election 2012	Years National election 2017	Spatial level	Source
Populist vote	2012	2017	Polling station	Dataoverheid.nl/Geodan
Voter turnout National elections	2012	2017	Municipality	Databank Verkiezingsuitslagen
Voter turnout municipality elections	2010	2014	Municipality	Databank Verkiezingsuitslagen
Shrinking/Anticipating/Normal region	2012	2015	Municipality	Rijksoverheid
Population growth	1990–2010	1990–2015	Municipality	CBS Statline
Age composition	2012	2017	Neighbourhood	CBS Statline
Ethnicity	2012	2017	Neighbourhood	CBS Statline
Income distribution	2012	2015	Neighbourhood	CBS Statline
Unemployment benefits	2012	2015	Neighbourhood	CBS Statline
Accessibility services	2012	2017	Neighbourhood	CBS Statline; own calculation
House prices	2012	2017	Neighbourhood	CBS Statline
Unemployment rate change	2007–2012	2012–2017	COROP	CBS Statline
GDP <i>per capita</i> change	2007–2012	2012–2017	COROP	CBS Statline
Broad welfare	2017	2017	COROP	Utrecht University and Rabobank Economic Research
Living environment classes	2005	2005	Zipcode4 level	CBS Statline
Distance to The Hague	2012	2017	Zipcode 6-level	Koster, SPINLAB

Notes: Neighbourhood refers to “wijk” and COROP (Coördinatiecommissie Regionaal Onderzoeksprogramma) is equivalent to Nomenclature of Territorial Units for Statistics (NUTS) 3 level regions. Broad welfare refers to the “Brede Welvaartsindicator” (BWI) which is an integral measure of welfare with eleven important dimensions brought together. Further details are provided in the main text.

statistics (Table A1) for example in 2017, the highest is almost 60% (Ruchpen) for the PVV and 32% (Boxmeer) for the SP.

For population decline, we use the official national labels defining normal, shrinking, and anticipating municipalities (Rijksoverheid, 2018). In our sample, the share of the population in these areas correspond to around 76.2%, 11.2%, and 12.6%, respectively. Shrinking areas are already confronted with consequences of population decline (expected population decline of at least 12.5%; household decline of 5% in 2040), while anticipating areas are not facing population decline yet (expected population decline of at least 2.5%, household decline of 2.5% in 2040), but are heading towards structural population decline (see Figure 6). It emerges that these predominantly pertain to regions at the periphery; some correspondence between this (expected) decline and population developments in Figure 1 can be observed (see also Appendix, Table A2). Rural areas are expected to experience population decline earlier and more seriously than urban areas, often facing great out-migration of younger people (Ubarevičienė, Van Ham, & Burneika, 2016).

In terms of demographic characteristics, next to (expected) population change we first consider longer-term population growth (over 20 and 25 years) as an alternative to the population decline indicator. Moreover, we include

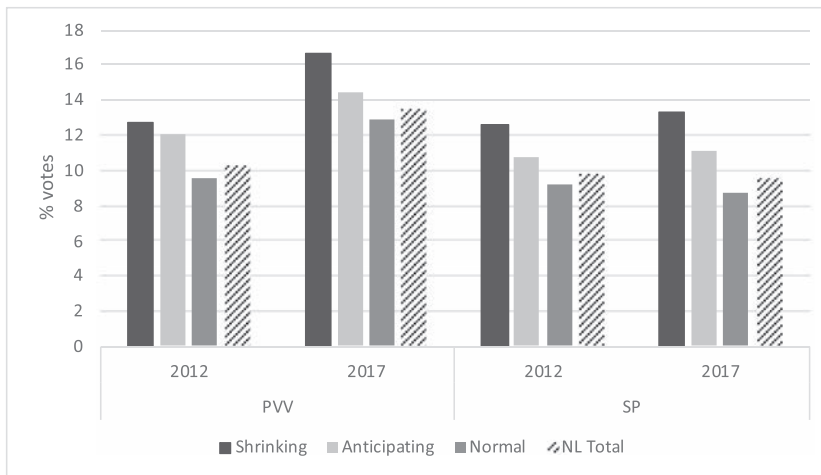


FIGURE 5 Percentage of votes for PVV and SP in different types of regions at the national elections in 2012 and 2017

other relevant compositional effects, namely age composition, income distribution, and unemployment benefits (details in Table 1). Education is not added as it is usually highly correlated with income, and education level is not publicly available.

Local (neighbourhood) factors that we consider are shares of minority groups (western and non-Western immigrants), house prices and type of living environment (i.e., city centre, suburban, green urban, village centre, rural living, or industrial working areas) and access to services.³ The types of living environment are used as a proxy for commitment with a region, as discussed in previous sections. For the “access to services” variable, we performed a factor analysis (principal components with varimax rotation) to four measures of services accessibility: distance to a general practitioner, distance to a (large) supermarket, distance to daycare and distance to an elementary school. The KMO value of 0.8 showed that the sample is adequate to perform a factor analysis, which resulted in one factor which explains 72% (2017) and 68% (2012) of the variance. The factor loadings of the four distances were all between 0.8 and 0.9. The factor scores were saved as a regression variable.

In addition, voter turnout at the municipality level can reflect local commitment and livability more broadly. We also include it as an important control variable due to its direct relevance to election outcomes. These were collected both for the municipality elections of 2010 and 2014, as well as for the national elections of 2012 and 2017. Since they are significantly highly correlated ($r = 0.796$ and $r = 0.518$, respectively), we included the turnout for the national elections due to our dependent variable, though the effects of both were similar.

Last, but not least, when the region performs better in for example, providing income (regional GDP), or jobs, we expect more satisfied people and lower levels of populist voting. As these conditions are expected to manifest themselves after a certain period of time, we take the change over the five years respective to the national election years. Taking on board growing attention to and research on wellbeing, we also include a broad welfare indicator that encompasses livability by capturing various factors reflecting quality of life at the regional level (also see subsection 2.3). We also include the logarithm of the distance to The Hague to control for spatial factors related to the distance between each neighbourhood and the Dutch political centre. We test whether this influences voting outcomes since many neighbourhoods in (near) The Hague vote for the PVV, while more northern neighbourhoods (e.g., in Groningen) tend to vote more for the SP.

³As an alternative to house prices, we also ran the models using average land rents at the four-digit postal code level for 1985–2007 (De Groot, 2012); the results were qualitatively similar and are available upon request.

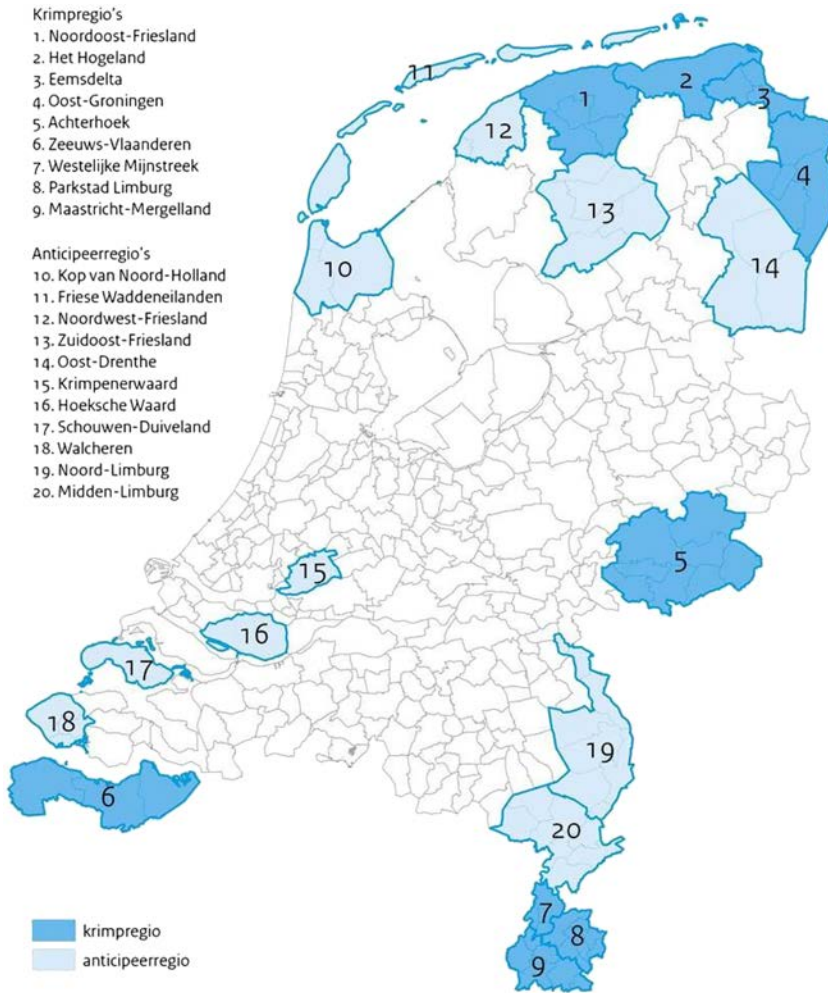


FIGURE 6 Shrinking (“krimpgebieden”) and anticipating (“anticipeergebieden”) regions in 2018
 Source: Rijksoverheid

4 | RESULTS

As the estimation results were quite similar for 2012 and 2017, we focus on the more recent national election outcomes. This period also covers more of the longer-lasting effects of the financial crisis of 2008, as well as more recent surges in especially right-wing populism. When there are significant differences, these will be pointed out (results for 2012 are reported in Appendix Table A3).

First, we look at the basic model results reported in Table 2, columns (1) and (3). For both the shrinking and anticipating indicators, at first glance the point estimates appear to be mostly significant in explaining higher levels of PVV and SP votes. So, when not controlling for any compositional or contextual effects, people in areas of (expected) population decline do vote more populist.

However, due to the intricate nature of population decline, it is indispensable to go beyond just this regional decline prognosis controlling for the related compositional and contextual effects. Besides conceptual motives for doing so, the proportion of the variance explained is quite low in the basic model, especially for the percentage share

**TABLE 2** Estimation results for national elections 2017

	(1)	(2)	(3)	
	PVV	PVV	SP	SP
Normal	ref.	ref.	ref.	ref.
Anticipating	1.535 (1.55)	-0.610 (-0.79)	2.387*** (3.70)	0.108 (0.18)
Shrinking	3.702*** (4.44)	0.162 (0.24)	4.614*** (6.82)	0.858 (1.52)
Population growth		0.192 (0.70)		-0.015 (-0.08)
Population ≤ 14 yr		0.267** (2.68)		-0.0004 (-0.01)
Population 15_24 yr		-0.214 (-1.57)		-0.061 (-1.13)
Population 25_44 yr		ref.		ref.
Population 45_64 yr		0.384*** (7.51)		0.234*** (7.12)
Population ≥ 65 yr		0.008 (0.10)		0.030 (1.04)
Unemployment benefits		0.048 (1.56)		0.094*** (5.34)
Normal income		ref.		ref.
High Income		-0.348*** (-6.71)		-0.156*** (-4.97)
Low Income		0.137 (1.82)		0.003 (0.09)
Accessibility services		-0.714** (-2.79)		-0.813*** (-5.53)
House prices		-0.006 (-1.09)		-0.005* (-2.13)
City centre		ref.		ref.
Suburban		0.859 (1.89)		0.256 (0.70)
Green urban		1.598** (2.60)		0.404 (1.47)
Village centre		1.436** (3.13)		0.705* (2.09)
Rural living		0.019 (0.04)		0.545 (1.24)
Industrial working area		-5.162 (-1.67)		-1.611* (-1.98)
Voter turnout		-0.208 (-1.68)		-0.347*** (-3.88)
Dutch		ref.		ref.
Western imm.		0.251*** (5.47)		0.094* (2.58)
Non-Western imm.		-0.105*** (-3.37)		-0.018 (-1.23)
Reg. Unemployment rate		-1.216 (-1.47)		0.227 (0.35)
Reg. GDP per capita		0.093*** (4.46)		-0.045* (-2.38)
Reg. Broad welfare		-0.481*** (-3.52)		-0.064 (-0.61)
Distance to the Hague		-1.186* (-2.38)		0.597 (1.75)
Constant	12.920*** (50.62)	51.860*** (4.08)	8.679*** (34.69)	33.550*** (3.44)
Observations	1901	1,366	1901	1,366
Adjusted R2	0.050	0.510	0.129	0.602

Notes: t-values are reported in parentheses (based on robust standard errors).

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Age is the share of the population 0–14 years old, 15–24, 25–44, 45–64, 65 and older.

Ethnicity is represented as the share of Western immigrants, non-Western immigrants and Dutch.

of votes for the PVV. This vastly improves (columns (2) and (4)) and a first striking observation is that the shrinking and anticipating population decline indicators are no longer statistically significant. The alternative population growth variable is insignificant as well.



4.1 | Compositional effects

We find that age composition effects are somewhat variable. Nevertheless, across all models, there is a positive relation between neighbourhoods with higher shares of people aged between 45 and 64 years old and populist votes for both the parties. For the PVV, this also holds for those with higher shares of population below 14 years old. For the 2012 results, there is a negative relation between areas with higher shares of people aged 15–24 and populist voting. An unexpected result is the insignificance of the ageing population, albeit for a negative effect on SP votes for the 2012 national elections.⁴ Turning to income distribution and unemployment benefits, impacts are similar in the case of the former albeit differ for the latter. Namely, the coefficient estimate of high income is negative and significant, but only positive and significant for the SP model.

4.2 | Contextual effects

Accessibility to services, based on the distance to reach them, shows a somehow unexpected negative effect: the further away services are, the lower the share of populist voting. Also, the next measure reflecting livability, average house prices, which was expected to have a negative relation with populist voting does not feature as a prominent explanatory factor compared to other local factors, with only the expected outcome being slightly significant and positive for share of votes for SP.⁵ When looking at the different living environment categories we do see relevant differences: PVV voters are most often found in town centres and neighbourhoods just outside the larger cities. SP voters also often reside in town centres. This result is slightly unexpected.

The national voter turnout is highly negative and significant in explaining the share of votes for SP, also for PVV in 2012. Finally, another key local variable is minority groups. It emerges that neighbourhoods with a greater number of non-Western immigrants has a negative impact on the share of votes for PVV. For those with a higher presence of Western immigrants, there is a positive effect for both PVV and SP.

It is also important to appraise more regional contextual effects which correspond to labour market administrative areas in the Netherlands. This is very appropriate, as it reflects commuting flows and as such the economic prosperity and employment opportunities in either the place of residence, working or searching for a job. (Un)employment developments do not come out to be a significant driver. Change in regional GDP *per capita* shows mixed results. It is positive and significant for the PVV in 2017, but negative and significant in 2012. Regional economic growth also has a negative impact in 2017 for the SP.⁶ The broader welfare measure on the other hand, shows more consistent effects: it is highly significant and negative in relation with share of votes for PVV in both 2017 and 2012, and insignificant for the SP votes. This provides an indication that a vote for PVV is more a signal of overall discontent, while this is not the case for SP. Finally, even after controlling for living environment, house prices and broader welfare, we still find that distance to the political centre of The Hague has a significant effect on populist voting for almost all specifications. If a neighbourhood is further away from The Hague, citizens tend to vote more for the SP (based on results for 2012), while it has a negative effect on shares of votes for PVV.

⁴We checked the robustness of the results, among which using alternative specifications dropping (combinations) of variables (considering VIF values), as well as testing for non-linear effects and examining potentially significant interaction effects. We also thank an anonymous reviewer for suggestions in this respect. Results remained quite similar across different specifications, albeit for few differences (e.g., when dropping 'High income,' in the 2017 SP model, the point estimate of 'Population 15_24 yr' is negative and significant, as expected). Since most alternative specifications suffer from multicollinearity, they are not reported, but are available upon request.

⁵In the alternative specifications (e.g., dropping 'High income'), we also find a similar result for the PVV model.

⁶We also checked the robustness of these mixed results, and they also hold in the alternative specifications.



5 | DISCUSSION

The main thesis of this paper is that people in areas of (expected) population decline vote more populist to express their discontent about the current and future state of their place of residence. In many ways a “populist voting mark-up” could be expected, as declining areas often are associated with being forgotten, fomenting societal discontent and mistrust in established political parties ultimately expected to lead to more populist votes. Notably, this (expected) population decline measure pertains to mostly peripheral and/or rural areas (Figure 6). Hence, this also reflects that urban and rural municipalities differ in terms of educational and job opportunities (de Jong, Bontekoning, & van Dam, 2015; Haartsen & Venhorst, 2010; Manting & Huisman, 2015). Furthermore, these declining areas often face budget constraints, resulting in increasing isolation and contributing to the feeling of being left behind by the national government, as well as knock-on effects such as constraints on the housing market and provision of local services (Franklin & Van Leeuwen, 2018; Hospers & Reverda, 2014; Kabisch, Haase, & Haase, 2006).

Although we do find higher levels of populist voting in our basic model without any controls for compositional or contextual effects, this vanishes as soon as we do include more socio-economic variables. This can reflect that (expected) population decline so far does not enforce motivations for populist voting encompassing attitudinal factors, compositional or more contextual factors. The insignificant estimate for population growth also reinforces that population decline, in itself, is either limited or all-together non-existent. This could partly have to do with the relatively low levels of population decline we face in the Netherlands.

Recent related literature has also found mixed results. In a study of electoral districts in the EU-28, Dijkstra, Poelman, and Rodríguez-Pose (2020), for example, find that longer-term economic decline drives votes for anti-EU parties much more than other prominent factors such as age composition and population decline. Although not on actual voting, Dabrowski, Stead, and Mashhoodi (2019) find that the effects of shrinking and/or peripheral regional conditions did not play a significant role in shaping EU image, which could partly be due to the role of Cohesion Policy. In contrast, they find that declining regional economic conditions negatively impacts citizens' views on the EU.

However, several of the related demographic, local and regional factors come out to be strongly significant. When looking at compositional effects, we find mixed effects of the age variables. Also, in the EU-wide study, Dijkstra, Poelman, and Rodríguez-Pose (2020) find the coefficient estimates for areas with a high share of an elderly population to be inconclusive. Though unexpected at first glance, it appears that ageing is a marginal factor of the populist vote compared to other factors (Dijkstra et al., 2020). In the Netherlands, although care should be taken with generalizing, nonetheless it emerges (for 2012 results and see also footnote 4) that areas with higher shares of younger generations (with voting age 18 and over) tend to vote less for populist parties, and *vice versa* for people between 45 and 64 years old.

For income distribution and unemployment benefits, it is particularly important to consider the parties separately due to their very different ideologies. As expected, neighbourhoods with a relatively higher income population (indicative also of higher educational attainment) tend to vote less for populist parties at both sides of the spectrum. However, the lower income category is not significant; this could be an indication that more micro-level conjectures connecting more blue-collar workers to anti-establishment sentiments might be oversimplified.⁷ For neighbourhoods receiving more unemployment benefits, this represents lack of available jobs which can be due to longer-term structural unemployment problems. Indeed, the highly significant positive impact found on the share of SP votes can be expected since (un)employment and social welfare are among the core issues. Notably, this factor does not appear significant in driving votes for the PVV.

For the other key local factors, the results largely are in line with expectations. The negative effect of voter turnout on the share of populist voting for most models, confirms expectations of larger turnout providing an indication

⁷In an alternative specification dropping high income, low income is positive and significant in both models and years. This suggests high income is picking up this compositional effect (like mirror images). Yet, our original results could also be a reflection that high income is a relatively more significant factor; there are inherent challenges with making generalizations, but this could reflect also higher educational attainment.



that citizens feel involved and trust the national politics. The results for minority groups have more nuanced findings reflecting also the intricate nature of this factor. Although ethnicity is not considered to be as significant when controlling for income and education (cf. Bevelander & Pendakur, 2014), in the context of populist voting, it can be more so especially in right-wing parties with jingoist leaders.

It is important to note that the ethnicity mix of the neighbourhoods can have multiple effects. Voters with anti-immigrant sentiments are more prone to vote for PVV than minority groups, but it can also be the former live in areas with a higher share of minorities and that this serves as a catalyst for voting for Geert Wilders. It can also be that neighbourhoods where minorities represent a larger share of the population vote less for parties such as the PVV. This came through in our results, as neighbourhoods with a greater number of non-Western immigrants has a negative impact on the share of votes for PVV. For those with a higher presence of Western immigrants, there is a positive effect for both PVV and SP, but much more significant for the former which is understandable given the distinctive party lines.

Moving to the contextual effects, although we expected lower accessibility to services to have a positive impact on populist voting, our findings can be explained in line with the results of Gieling and Haartsen (2017). In their study on livability and volunteering they also find a negative relationship between provision of services and livability, indicating that for these residents the level of satisfaction with service provision does not make a positive contribution to their perceived level of livability. For the other livability-related measure, house prices, the result for SP makes sense since in the case of lower average house values, especially in areas where SP has a strong local presence (e.g., neighbourhoods in Groningen) there would be more motivation to vote for SP. Apart from low unemployment levels this region faced a strong discontent about the decrease of house prices due to earthquakes related to gas drilling.

A plausible explanation for the insignificant result of unemployment at the regional scale, is that unemployment benefits better capture structural unemployment problems in a closer vicinity to the place of residence. Areas with higher poverty levels and inequality are often those receiving more support from social protection systems (if they are in place). In line with job search theory, due to lower search intensity, a rise in unemployment benefits increases unemployment duration and thus reduces the likelihood of migration (Heijdra & van der Ploeg, 2002). Thus, the local scale in this case seems to link more to societal discontent.

Regarding regional economic growth, for the SP, the outcome could be related to the negative relationship often observed between economic growth and unemployment (Okun's law). For PVV, the positive coefficient is more of a conundrum for 2017, but could partly reflect the focus of the party which unlike the SP, is not on (un)employment of the working class. Furthermore, and importantly, it is increasingly recognized that GDP is a limited measure of welfare. This is also reflected in the Dutch government's commissioning of a yearly evaluation of wellbeing in the Netherlands since 2018, considering other indicators besides GDP including the environment, health, education, labour, security, trust and inequality. In fact, the broader welfare measure is highly significant and negative in relation with share of votes for PVV in both 2017 and 2012, and insignificant for the SP votes. This provides an indication that a vote for PVV is more a signal of overall discontent, while this is not the case for SP.

Finally, an interesting finding was outcome of the point estimate for the distance to the political centre. The negative and significant result for PVV reflects that several neighbourhoods in and close to The Hague tend to vote for this populist party, while the regional support bases of SP are concentrated in other areas such as the North (e.g., Groningen). This is thus an important spatial control variable.

6 | CONCLUSIONS

The main question this research aimed to answer is: "To what extent do regions in decline face higher levels of populist voting when controlling for 'compositional effects' (e.g., demographic factors) and 'contextual effects' (e.g., regional economic conditions)?" The answer is simple and clear: these regions do not face higher levels of



populist voting when taking into account compositional and contextual affect. Apparently, there is no such thing as a “populist voting mark-up” in these regions. As aforementioned, this could also partly be due to the relatively low levels of population decline faced in the Netherlands compared to other countries such as Italy.

However, when only distinguishing between normal, shrinking and anticipating regions, the shrinking regions come out as winners in terms of populist voting. This implies that both the compositional and contextual circumstances are in such a way that they provoke discontent expressed in voting. In regions of decline, income is often lower, as are house prices while unemployment levels are higher. The simultaneous occurrence of these negative factors in regions of population decline can help explain the higher shares of populist votes. In other words, although we do not find a “populist voting mark-up,” people in these regions do express a feeling of discontent which need to be taken seriously by local, regional and national governments. A central policy implication in this respect is to not interpret populist voting as simply anti-establishment voting.

There can be a myriad of reasons as to why people vote for populist parties. It is germane to sedulously examine more in-depth what the message means. This relates to a second conclusion that we can draw from the results: it is very important to distinguish between different parties. This is particularly relevant when their party programmes are as contrasting as in the case of the PVV and SP. Their different focus on immigration (PVV) and jobs (SP) is clearly visible in the results. Neighbourhoods with more Western immigrants vote more for the PVV, areas with non-Western immigrants vote less for the PVV, while neighbourhoods with more people on unemployment benefits vote more often in favour of SP.

Another interesting difference between the two parties is that the regional context plays a more important role in the case of the PVV: in regions where GDP growth is relatively high, and broader welfare is low, as well as regions closer to the political centre of The Hague, people vote more in favour of the PVV. This suggests that PVV votes indicate more a general feeling of discontent of people that feel they do not benefit from overall (regional) growth and that indeed face lower levels of broad welfare, while people voting for the SP particularly do so because of their concern about the availability of jobs.

An important direction for further research, both by academics and policy-makers, is to focus more on explicit messages of discontent. As highlighted in the introduction, voting is only an implicit message, as it might be based on several factors, which do not all relate to local socio-economic circumstances as we find in this paper. Therefore, defining and subsequently measuring the most relevant direct objective and subjective factors are key to better understand regional discontent and to act upon it.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the editor Tomaz Dentinho, the regional editor Emmanouil Tranos, and the anonymous reviewers for very useful comments and suggestions that have helped to improve the paper. The authors would also like to thank the participants, especially Andres Rodriguez-Pose, Evert Meijers, Lewis Dijkstra, Maria Abreu and Thomas de Graaff, of the special session on the geography of discontent at the ERSO Congress, Lyon 2019 for insightful comments. They are also thankful to Jaap Boter for geo-referencing the voting data.

ORCID

Eveline S. van Leeuwen  <https://orcid.org/0000-0002-3262-7030>

Solmaria Halleck Vega  <https://orcid.org/0000-0001-8354-0026>

REFERENCES

- Ashworth, S. (2012). Electoral accountability: Recent theoretical and empirical work. *Annual Review of Political Science*, 15, 183–201.
- Badir, M., Van Bavel, B., Hardeman, S., & Rijpma, A. (2017). Brede Welvaartsindicator 2017 (Rabobank & Universiteit Utrecht). URL: <https://economie.rabobank.com/contentassets/4fc4b7f888bc4d5980dd176be506c9c2/rabobank-uu-2017-brede-welvaartsindicator-nederland.pdf>



- Becker, S. O., Fetzner, T., & Novy, D. (2017). Who voted for Brexit? A comprehensive district-level analysis. *Economic Policy*, 32(92), 601–650.
- Belanger, E., & Aarts, K. (2006). Explaining the rise of the LPF: Issues, discontent, and the 2002 Dutch election. *Acta Politica*, 41(1), 4–20.
- Bevelander, P., & Pendakur, R. (2014). The labor market integration of refugee and family reunion immigrants: A comparison of outcomes in Canada and Sweden. *Journal of Ethnic and Migration Studies*, 40(5), 689–709.
- Canovan, M. (1999). Trust the people! Populism and the two faces of democracy. *Political Studies*, 47(1), 2–16.
- CBS, Kadaster. (2017). URL: <https://www.clo.nl/indicatoren/nl2115-verkooprij-woningen>
- CBS, PBL, RIVM, & WUR. (2016). Bevolkingsgroei, 2011–2016 (indicator 2102, version 06, 29 August 2016). www.clo.nl. Centraal Bureau voor de Statistiek (CBS), Den Haag; PBL Planbureau voor de Leefomgeving, Den Haag; RIVM Rijksinstituut voor Volksgezondheid en Milieu, Bilthoven; en Wageningen University & Research, Wageningen.
- Dabrowski, M., Stead, D., & Mashhoodi, B. (2019). EU Cohesion Policy can't buy me love? Exploring the regional determinants of EU image. *Regional Science Policy and Practice*, 11(4), 695–711.
- De Groot, H. L. F. (2012). *Determination of land rents: A simple approach*. Amsterdam: Vrije Universiteit.
- de Jong, A., Bontekoning, R., & van Dam, F. (2015). De stad als roltrap. In G. Beets F. van Dam A. de Jong & D. Manting (Eds.), *De stad: Magneet, roltrap en spons; bevolkingsontwikkelingen in stad en stadsgewest* (pp. 74–85). Den Haag: Planbureau voor de Leefomgeving.
- Delken, E. (2008). Happiness in shrinking cities in Germany. *Journal of Happiness Studies*, 9(2), 213–218.
- Dijkstra, L., Poelman, H., & Rodriguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies*, 54(6), 737–753.
- Flavin, P., & Keane, M. J. (2012). Life satisfaction and political participation: Evidence from the United States. *Journal of Happiness Studies*, 13(1), 63–78.
- Franklin, R. S., & van Leeuwen, E. S. (2018). For whom the bells toll: Alonso and a regional science of decline. *International Regional Science Review*, 41(2), 134–151. <https://doi.org/10.1177/0160017616675917>
- Garretsen, H., Stoker, J. I., Soudis, D., Martin, R. L., & Rentfrow, P. J. (2018). Brexit and the relevance of regional personality traits: More psychological openness could have swung the regional vote. *Cambridge Journal of Regions, Economy and Society*, 11(1), 165–175.
- Gieling, J., & Haartsen, T. (2017). Liveable villages: the relationship between volunteering and liveability in the perceptions of rural residents. *Sociologia Ruralis*, 57, 576–597.
- Gordon, I. R. (2018). In what sense left behind by globalisation? Looking for a less reductionist geography of the populist surge in Europe. *Cambridge Journal of Regions, Economy and Society*, 11(1), 95–113.
- Haartsen, T., & Venhorst, V. (2010). Planning for decline: Anticipating on population decline in the Netherlands. *Tijdschrift voor Economische en Sociale Geografie*, 101(2), 218–227.
- Haase, D., Seppelt, R., & Haase, A. (2008). Land use impacts of demographic change—lessons from eastern German urban regions. In *Use of landscape sciences for the assessment of environmental security* (pp. 329–344). Dordrecht: Springer.
- Harder, J., & Krosnick, J. A. (2008). Why do people vote? A psychological analysis of the causes of voter turnout. *Journal of Social Issues*, 64(3), 525–549.
- Heijdra, B., & van der Ploeg, F. J. (2002). *Foundations of modern macroeconomics*. Oxford: Oxford University Press.
- Hoffmann-Martinet, V. (1994). *Local elections in Europe*. Barcelona: ICPS.
- Hospers, G. J., & Reverda, N. (2014). *Managing population decline in Europe's urban and rural areas*. London: Springer.
- Immerzeel, T., & Pickup, M. (2015). Populist radical right parties mobilizing “the people”? The role of populist radical right success in voter turnout. *Electoral Studies*, 40, 347–360.
- Kabisch, S., Haase, A., & Haase, D. (2006). Beyond growth—urban development in shrinking cities as a challenge for modeling approaches. In A. Voinov, A. Jakeman, & A. Rizzoli (Eds.), *Proceedings of the iEMSs third biennial meeting: “Summit on environmental modelling and software”*. Burlington, USA, July 2006: International Environmental Modelling and Software Society. <http://www.iemss.org/iemss2006/sessions/all.html>
- Laclau, E. (2005). *On populist reason*. New York: Verso.
- Leidelmeijer, K., & Marlet, G. (2011). Leefbaarheid in Krimpgebieden, een verkenning van de relatie tussen bevolkingskrimp en leefbaarheid. RIGO, P19700, Amsterdam
- Los, B., McCann, P., Springford, J., & Thissen, M. (2017). The mismatch between local voting and the local economic consequences of Brexit. *Regional Studies*, 51(5), 786–799.
- Lucardie, P. (2010). Tussen establishment en extremisme: Populistische partijen in Nederland en Vlaanderen. *Res Publica*, 52, 149–172.
- Manting, D., & Huisman, C. (2015). De stad als magneet. In G. Beets, F. van Dam, A. de Jong, & D. Manting (Eds.), *De stad, magneet, roltrap en spons; Bevolkingsontwikkelingen in stad en stadsgewest* (pp. 64–73). Den Haag: Planbureau voor de Leefomgeving.
- McCann, P. (2018). The trade, geography and regional implications of Brexit. *Papers in Regional Science*, 97(1), 3–8.



- McCann, P. (2020). Perceptions of regional inequality and the geography of discontent: Insights from the UK. *Regional Studies*, 54(2), 256–267.
- Mény, Y., & Surel, Y. (2002). The constitutive ambiguity of populism. In Y. Mény & Y. Surel (Eds.), *Democracies and the Populist Challenge* (1–2). London: Palgrave Macmillan. https://doi.org/10.1057/9781403920072_1
- Moerkamp, J. (2012). Dorp kan zonder voorzieningen. *Het binnenlands bestuur*, 27 juli 2012. <https://www.binnenlandsbestuur.nl/ruimte-en-milieu/achtergrond/achtergrond/dorp-kan-zonder-voorzieningen.8499524.lynkx>
- Mudde, C. (2007). *Populist radical right parties in Europe* (Vol. 22, no. 8). Cambridge: Cambridge University Press.
- Obbink, H. (2016). Stedelingen en buitenlui groeien verder uit elkaar. *Trouw*, 17 Juni 2016. <https://www.trouw.nl/nieuws/stedelingen-en-buitenlui-groeien-verder-uit-elkaar-b68d1107?referrer=https%3A%2F%2Fwww.google.com%2F>
- Out, N. (2011). Bewoners maken zelf de leefbaarheid. *AGORA Magazine*, 27(4), 18–21.
- Rijksoverheid. (2018). Indeling gemeenten krimpregio's en anticipeerregio's. URL: <https://www.rijksoverheid.nl/onderwerpen/bevolkingsdaling/krimpgebieden-en-anticipeergebieden>
- Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189–209.
- Schumacher, G., & Rooduijn, M. (2013). Sympathy for the “devil”? Voting for populists in the 2006 and 2010 Dutch general elections. *Electoral Studies*, 32(1), 124–133.
- Shields, T. G., & Goidel, R. K. (1997). Participation rates, socio-economic class biases, and congressional elections: A crossvalidation. *American Journal of Political Science*, 41(2), 683–691.
- Smeets, I. (1995). Facing another gap: An exploration of the discrepancies between voting turnout in survey research and official statistics. *Acta Politica*, 30, 307–334.
- Ubarevicienė, R., Van Ham, M., & Burneika, D. (2016). Shrinking regions in a shrinking country: The geography of population decline in Lithuania 2001–2011. *Urban Studies Research*, 2016, 1–18. <https://doi.org/10.1155/2016/5395379>
- Van Dalen, H. P., & Henkens, K. (2011). Who fears and who welcomes population decline? *Demographic Research*, 25, 437–464.
- Van de Kaa, D. J. (1987). Europe's second demographic transition. *Population Bulletin*, 42(1), 1–59.
- Van Weezel, T. G. (2017). We zijn met 17,1 miljoen: waarom onze bevolking zo snel groeit. *De Volkskrant*, 3 Januari 2017.
- Verwest, F., Sorel, N., & Buitelaar, E. E. (2009). Krimp vraagt om veranderingen woningvoorraad. *Demos*, 25(1), 7–9.
- Voerman, G. (2009). Van Mao tot marketing: Over het populisme van de SP. *Socialisme en Democratie*, 9, 26–31.
- Vossen, K. (2012). Van marginaal naar mainstream? Populisme in de Nederlandse geschiedenis. *BMGN-Low Countries Historical Review*, 127(2), 28–54.
- Wiechmann, T. (2008). Errors expected—Aligning urban strategy with demographic uncertainty in shrinking cities. *International Planning Studies*, 13(4), 431–446.

How to cite this article: van Leeuwen ES, Halleck Vega S, Hogenboom V. Does population decline lead to a “populist voting mark-up”? A case study of the Netherlands. *Reg Sci Policy Pract.* 2020;1–23. <https://doi.org/10.1111/rsp3.12361>

APPENDIX A

TABLE A1 Descriptive statistics

2017					
Variable	Obs	Mean	Std.Dev.	Min	Max
PVV	1,901	13.53	5.377	1.3	58.467
SP	1,901	9.49	4.330	0.62	31.4
Normal	1,901	0.762	0.426	0	1
Anticipating	1,901	0.126	0.332	0	1
Shrinking	1,901	0.112	0.316	0	1
Population growth	1,394	00.391	0.776	–.205	6.477
Access. services	1,897	–.12	0.88	–1.044	9.314

(Continues)

**TABLE A1** (Continued)

2017					
Variable	Obs	Mean	Std.Dev.	Min	Max
House prices	1,841	228.948	73.974	71	910
Village centre	1,901	0.328	0.47	0	1
Green urban	1,901	0.179	0.383	0	1
Suburban	1,901	0.079	0.27	0	1
Rural living	1,901	0.342	0.475	0	1
Ind. working area	1,901	0.004	0.061	0	1
Voter turnout N	1,901	82.229	4.306	53.292	94.615
Voter turnout M	1,901	55.212	6.786	35.45	84.79
P_14 yr and under	1,894	15.832	3.36	1	37
P_15_24_yr	1,894	11.902	2.95	2	44
P_25_44_yr	1,894	22.189	4.964	7	54
P_45_64_yr	1,894	30.165	4.285	13	49
P_65 yr and over	1,894	19.899	5.422	1	65
Western imm.	1,894	8.395	5.505	0	63
Non-western imm.	1,894	6.844	8.58	0	84
Unemp.benefits	1,901	24.918	7.862	0	58
Unemp.rate change	1,901	-0.92	0.283	-01.5	-0.3
GDP pc change	1,901	7.494	7.324	-29.959	15.215
High income	1,901	19.555	6.527	0	54.6
Low income	1,901	39.257	6.866	0	68.1
Broad welfare	1,901	66.91	2.13	62	71
LNdistdh	1,901	4.371	0.864	-0.524	5.443
2012					
Variable	Obs	Mean	Std.Dev.	Min	Max
PVV	1,996	10.22	4.722	1.069	40.661
SP	1,996	9.80	4.505	.644	39.522
Normal	1,996	0.759	0.428	0	1
Anticipating	1,996	0.121	0.326	0	1
Shrinking	1,996	0.12	0.325	0	1
Population growth	1,546	0.334	0.669	-1.67	6.453
Access. services	1,990	-0.111	0.928	-1.151	10.769
House prices	1,987	255.905	86.418	88	1,385
Village centre	1,996	0.309	0.462	0	1
Green urban	1,996	0.178	0.382	0	1
Suburban	1,996	0.096	0.294	0	1
Rural living	1,996	0.341	0.474	0	1
Ind. working area	1,996	0.009	.095	0	1
Voter turnout N	1,996	75.779	4.45	62.63	89.38
Voter turnout M	1,996	55.628	6.111	43.1	80.08

(Continues)

**TABLE A1** (Continued)

2012					
Variable	Obs	Mean	Std.Dev.	Min	Max
P_14 yr and under	1,996	17.285	3.745	0	37
P_15_24 yr	1,996	11.684	2.852	0	43
P_25_44 yr	1,996	24.007	5.085	0	49
P_45_64 yr	1,996	29.802	4.587	0	47
P_65 yr and over	1,996	17.018	5.602	0	62
Western imm.	1,996	7.983	5.146	0	61
Non-western imm.	1,996	6.236	8.605	0	85
Unemp. benefits	1,996	24.763	8.378	0	57
Unemp.rate change	1,996	1.518	0.488	0.7	2.8
GDP pc change	1,996	3.139	5.543	-16.59	21.192
High income	1,996	19.795	6.771	0	57
Low income	1,996	39.974	6.219	0	72
Broad welfare	1,996	67.039	2.008	62	71
LNdistdh	1,996	4.412	0.829	-0.524	5.444

TABLE A2 Descriptive statistics for the three types of municipalities, 2017

Normal.					
Variable	Obs	Mean	Std.Dev.	Min	Max
PVV	1,448	12.921	4.972	1.3	58.467
SP	1,448	8.679	3.963	0.62	31.4
Population growth	1,101	0.405	0.786	-0.065	6.477
Access. services	1,445	-0.191	0.85	-1.044	9.314
House prices	1,395	239.7	77.76	71	910
Village centre	1,448	0.317	0.465	0	1
Green urban	1,448	0.218	0.413	0	1
Suburban	1,448	0.077	0.267	0	1
Rural living	1,448	0.306	0.461	0	1
Ind. working area	1,448	0.005	0.069	0	1
Voter turnout N	1,448	82.716	4.405	53.292	94.615
Voter turnout M	1,448	54.969	7.144	35.45	84.79
P_14 yr and under	1,443	16.169	3.468	1	37
P_15_24 yr	1,443	12.165	3.128	2	44
P_25_44 yr	1,443	22.746	5.335	7	54
P_45_64 yr	1,443	29.658	4.384	13	49
P_65 yr and over	1,443	19.24	5.458	1	65
Western imm.	1,443	8.08	4.736	0	40
Non-western imm.	1,443	7.787	9.343	0	84
Unemp. benefits	1,448	23.93	7.363	0	54

(Continues)

**TABLE A2** (Continued)

Normal.					
Variable	Obs	Mean	Std.Dev.	Min	Max
Unemp.rate change	1,448	-0.928	0.285	-1.5	-.3
GDP pc change	1,448	7.334	7.463	-29.959	15.215
High income	1,448	20.355	6.841	0	54.6
Low income	1,448	38.666	7.254	0	68.1
Broad welfare	1,448	66.996	2.16	62	71
LNdistdh	1,448	4.208	0	-0.524	5.38
Shrinking					
Variable	Obs	Mean	Std.Dev.	Min	Max
PVV	213	16.623	6.23	5.1	36.367
SP	213	13.293	4.344	4.2	25.9
Population growth	139	0.091	0.226	-0.205	0.56
Access. services	213	0.105	0.936	-0.917	3.594
House prices	207	176.913	41.24	91	328
Village centre	213	0.366	0.483	0	1
Green urban	213	0.047	0.212	0	1
Suburban	213	0.103	0.305	0	1
Rural living	213	0.432	0.497	0	1
Ind. working area	213	0	0	0	0
Voter turnout N	213	79.464	3.351	72.336	84.625
Voter turnout M	213	55.908	5.075	46.25	65.18
P_14 yr and under	211	14.393	2.58	4	21
P_15_24 yr	211	10.953	2.382	8	33
P_25_44 yr	211	20.521	2.452	14	29
P_45_64 yr	211	31.806	3.243	17	46
P_65 yr and over	211	22.351	4.359	10	34
Western imm.	211	11.536	9.368	2	63
Non-western imm.	211	3.64	3.209	0	19
Unemp. benefits	213	28.014	7.491	0	51
Unemp.rate change	213	-0.879	0.243	-1.1	-0.4
GDP pc change	213	7.437	9.185	-29.959	14.04
High income	213	15.899	4.32	0	33.3
Low income	213	41.609	5.552	0	52.9
Broad welfare	213	66.069	2.178	63.5	69.2
LNdistdh	213	5.056	0.316	2.711	5.443
Anticipating					
Variable	Obs	Mean	Std.Dev.	Min	Max
PVV	240	14.455	5.846	3.3	33.55
SP	240	11.066	4.225	2.5	25.5
Population growth	154	0.56	0.939	-0.024	3.483

(Continues)

**TABLE A2** (Continued)

Anticipating					
Variable	Obs	Mean	Std.Dev.	Min	Max
Access. services	239	0.109	0.936	-0.9	3.602
House prices	239	211.255	45.498	125	345
Village centre	240	0.362	0.482	0	1
Green urban	240	0.058	0.235	0	1
Suburban	240	0.067	0.25	0	1
Rural living	240	0.483	0.501	0	1
Ind. working area	240	0	0	0	0
Voter turnout N	240	81.744	3.388	75.001	87.545
Voter turnout M	240	56.056	5.717	45.83	69.22
P_14 yr and under	240	15.067	2.808	4	24
P_15_24 yr	240	11.158	1.774	7	17
P_25_44 yr	240	20.304	3.204	10	33
P_45_64 yr	240	31.767	3.702	20	43
P_65 yr and over	240	21.704	5.018	10	54
Western imm.	240	7.529	4.188	1	21
Non-western imm.	240	3.992	4.974	0	35
Unemp. benefits	240	28.133	9.411	5	58
Unemp.rate change	240	-0.913	0.304	-1.4	-0.6
GDP pc change	240	8.51	3.623	-284	11.579
High income	240	17.976	4.53	0	33.4
Low income	240	40.734	4.424	0	50.7
Broad welfare	240	67.14	1.703	62.5	70.3
LNdistdh	240	4.746	0.543	3.333	5.314

TABLE A3 Estimation results for national elections 2012

	(1)	(2)	(3)	(4)
	PVV	PVV	SP	SP
Normal	ref.	ref.	ref.	ref.
Anticipating	2.476* (2.02)	0.331 (0.56)	1.452* (2.10)	-0.690 (-1.01)
Shrinking	3.199*** (3.57)	-0.890 (-1.38)	3.320*** (3.68)	0.182 (0.31)
Population growth		0.506** (3.07)		0.112 (0.54)
Population ≤ 14 yr		0.202* (2.43)		-0.205*** (-3.99)
Population 15_24 yr		-0.245* (-2.59)		-0.253*** (-4.48)
Population 25_44 yr		ref.		ref.
Population 45_64 yr		0.211*** (5.60)		0.188** (3.20)
Population ≥ 65 yr		-0.089 (-1.53)		-0.212*** (-6.00)
Unemployment benefits		0.010 (0.50)		0.067** (3.03)
Normal income		ref.		ref.

(Continues)

**TABLE A3** (Continued)

	(1)	(2)	(3)	(4)
	PVV	PVV	SP	SP
High Income		-0.332*** (-6.11)		-0.180*** (-3.59)
Low Income		0.076 (1.29)		0.056 (1.21)
Accessibility services		-0.476* (-2.51)		-1.268*** (-4.24)
House prices		0.003 (1.71)		0.004 (1.68)
City centre		ref.		ref.
Suburban		0.497 (1.21)		0.769* (2.55)
Green urban		0.998* (2.18)		0.691* (2.45)
Village centre		0.483 (1.13)		0.558 (1.46)
Rural living		-0.705 (-1.46)		0.783 (1.37)
Industrial working area		-0.894 (-0.67)		-0.341 (-0.36)
Voter turnout		-0.371*** (-9.42)		-0.202** (-3.07)
Dutch		ref.		ref.
Western imm.		0.140** (2.93)		0.126* (2.42)
Non-Western imm.		-0.089*** (-4.22)		0.009 (0.57)
Reg. Unemployment rate		-2.452*** (-5.88)		-0.084 (-0.16)
Reg. GDP <i>per capita</i>		-0.102** (-3.05)		0.027 (0.87)
Reg. Broad welfare		-0.649*** (-5.86)		0.013 (0.10)
Distance to the Hague		-1.163* (-2.51)		1.317*** (5.57)
Constant	9.536*** (45.21)	87.060*** (9.94)	9.230*** (32.42)	19.790 (1.52)
Observations	1,996	1,535	1,996	1,535
Adjusted R2	0.067	0.574	0.061	0.466

Note: See notes to Table 2.