

What shapes the dynamics of citizens' satisfaction of democracy?

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Abstract

Latent growth curve (LGC) models are a powerful and flexible approach to study individual-level developments of political attitudes and behaviour. They are especially useful whenever individuals are expected to differ in their trajectories. Despite their potential, latent growth curve models appear to be more popular in fields such as sociology or psychology than in political science. We provide an application of LGC models to the development of satisfaction with democracy in the Netherlands, over a period of nine years. We use data from the Dutch LISS Panel. This panel is based on a relatively large probability sample from the Dutch register of households and contains inter alia annually recurring modules on Politics and Values for the period 2007-2015. Using these high-quality data we show how the application of latent growth curve modelling to citizens' satisfaction with democracy can elicit substantial variation that is usually concealed in other studies. We then test to what extent this variation in trajectories can be explained by common theories on satisfaction with democracy related to socio-economic status, the economy, policy performance and electoral behaviour. The results highlight that socio-economic status matters, albeit not always in the expected way. They also show that individual-level satisfaction with democracy is most strongly influenced by economic evaluations and to a smaller degree by governmental policy performances. In addition, while most electoral victories do not seem to boost citizens' satisfaction with democracy above and beyond the general trajectory, electoral victory did play a role for voters of the 2010 minority government.

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Introduction

One finding of decades of research that continues to puzzle political scientists and their audience alike, is the absence of clear trends in people's satisfaction with democracy (Fuchs, 1995; Wagner et al., 2009; Van Ham and Thomassen, 2016). Despite recurring predictions of a decrease in citizens' evaluations of democracy since the 1950s, empirical research has so far failed in substantiating these predictions with convincing data (for an overview, see Thomassen and Van Ham, 2016). In light of persistent beliefs that political dissatisfaction is growing, these negative findings point to at least three different types of explanations.

First, the negative findings may simply reflect reality and thus mirror a real absence of trends in people's evaluations of democracy. This would imply that the various theories predicting a decline in satisfaction are wrong and need to be revised. Obviously, as long as no convincing evidence is found that shows the opposite, this first explanation is the best that we have.

Secondly, the absence of a negative trend in satisfaction with democracy might result from the poor quality of the measure. Satisfaction with democracy is almost universally measured with a single survey question, which impedes the reliability and validity of individual responses. Whereas this lack of reliability at the individual level may still be cancelled out in a large-scale survey of many individuals, the measure also suffers from a lack of validity. A lack of measurement validity can result in biased conclusions about overtime developments. Still, the concept and the related survey item of satisfaction with democracy continues to be one of the most widely used predictors of individual-level attitudes and behaviour.

Thirdly and last, the absence of a negative trend might be the result of countervailing tendencies among specific subgroups of citizens. A downward trend in satisfaction with democracy might be observed within a specific (socially, economically, or politically defined) group of people, but might at the same time be offset by a contrary trend in another subgroup. This possibility can be investigated by focusing on the overtime development of satisfaction with democracy within such subgroups. This is essentially the approach taken by Aarts, Van Ham and Thomassen (2016). They find that the gap in satisfaction with democracy between lower- and higher-educated persons has increased in Western Europe over the past 40 years – with the lower-educated becoming increasingly dissatisfied and the higher-educated becoming more satisfied.

In this paper we reassess trends in satisfaction with democracy with a focus on specifying the overall trend. In contrast with earlier work, in which the impact of variables like education was directly tested in causal models of cross-sectional survey data (see Aarts, Van Ham and Thomassen, 2016), we will use panel data on the Netherlands. It yields the benefit of holding many possible confounding contextual variables constant. We set up and test a latent growth curve model that enables us to clarify first to what extent there is individual variation in the development of satisfaction with democracy over a period of nine years. Thereafter, we test whether, and to which extent this individual variation can be attributed to social, economic, or political characteristics of these individuals, or to contextual characteristics.

In the next section the latent growth curve model is briefly explained. Thereafter we revisit the concept of satisfaction with democracy, and we introduce our data and measures. Subsequently the latent growth curve model is tested, and we finish with some conclusions.

Latent growth curve models in political science

Many important questions in political science concern change over time or the effects of specific events on developments over time. Such questions and accompanying theories can only be addressed and tested with longitudinal data. The increasing availability of longitudinal individual-level data of high quality enables the testing of new, dynamic theories that was previously not possible. However, it also allows re-visiting existing research from a different and more fine-grained perspective that focuses on change over time instead of on average effects. This is our aim in this paper with regard to trends in people's satisfaction with democracy. Latent growth curve modelling (LGC) presents a powerful and flexible statistical approach for the analysis of individual change over time. Typical research topics that can be addressed within the LGC framework include, for example, the development of party identification, party support over the course of a campaign, or the growth of governmental budgets over time. LGC models can be applied to a wide range of data with repeated observations per unit (panel data).

Based on the analysis of covariance structures, LGC incorporates elements of factor analysis and test theory imbedded into a general framework of hierarchical modelling (see Duncan et al., 2011; Hox and Stoel, 2005; Preacher et al., 2008; Singer and Willett, 2007). The level-1 part contains information on change over time whereas the level-2 part maps inter-individual differences in change over time. LGC assumes inter-individual differences in starting positions and in trajectories, represented by latent intercepts and slopes, respectively. Time is explicitly built into the factor loadings of the intercept and slope (Duncan et al., 2011). This allows investigating trends or developments over time as well as the causes and consequences of individuals' differences in trajectories.

To illustrate LGC models more formally, all linear growth models take on the following form of level-1 intra-subject change:

$$y_{ti} = \pi_{0i} + \pi_{1i}a_t + \varepsilon_{ti} \quad (1)$$

where a represents time, and π_{0i} and π_{1i} refer to the intercept and slope of the growth trajectories, respectively. Intercepts and slopes are allowed to vary across units i and their variance is captured in latent factors. Finally, ε_{ti} is an error term for unit i at time t (see Finkel et al., 2007). In a second step, inter-individual differences in intercepts and slopes can be explained by including level-2 variables that are either time-varying or time-invariant. It means that a second set of regression equations considers π_{0i} and π_{1i} as outcome variables. Due to this nested structure, ordinary least square estimation is inappropriate and instead maximum likelihood estimates are required (Finkel et al., 2007).

This formal illustration also highlights the similarities between LGC and structural equation modelling. In fact, LGC is a special case of structural equation modelling (Hox and Stoel, 2005; Singer and Willett, 2007), which implies that data requirements and statistical assumptions are largely the same. LGC requires multi-wave, individual-level panel data that are in the wide format (Singer and Willett, 2007). Especially the testing of more complex theories poses high demands on sample size and on the number of waves in order to facilitate model identification. Even though there is no minimum requirement for sample size, there is a relation between the required number of individual units and the required number of repeated observations for model estimation, identification and statistical power (Finkel, 1995; Munthén and Curran, 1997). As basic assumptions of LGC Duncan et al. (2011: 21) state that '(a) the

means of all latent variables, error terms, and factors have zero variance; (b) the variances of all latent variables have zero means; (c) the means and variances of latent variables do not covary; and (d) the error variances do not covary with each other or with any variables except the measured variables they directly affect'. Finally, repeated measures are generally assumed to be continuous and normally distributed, even though alternative estimates are also available to handle ordinal data. With these requirements in mind, LGC provides large modelling flexibility even beyond the mere estimation of growth patterns: it allows the modelling of causal paths, the inclusion of additional latent constructs as either exogenous or endogenous variables, and it presents many options to test model fit and constrain parameters (Hox and Stoel, 2005).

Many empirical applications of LGC already exist, and most of them can be found in sociology, psychology and educational research. Existing examples in political science illustrate how powerful and promising the approach is for testing theories of change. Plutzer (2002: 41), for example, develops and tests a 'developmental theory of turnout' that models young citizens' electoral participation as a growth process using a student-parent survey covering three waves of data. In contrast, Finkel et al. (2007) use countries as units of observation and models trajectories of democratic development between 1990 and 2003 as a function of democratic assistance and economic and political factors. Similarly, Paxton et al. (2010) take on a country-level perspective and test theories related to electoral systems, national quotas and democratic growth to explain the development of women's legislative representation between 1975 and 2000. In one of the more recent political science applications, Neundorf et al. (2013) model the growth of political interest among young citizens between 1984 and 2007 and test common explanations related to parental socialisation as well as work- and family-related events. All of these studies share the use of panel data over several waves and the modelling of developmental processes and their causes.

These exemplary studies also illustrate the flexibility and potential of LGC for addressing research questions pertaining to change over time with the use of longitudinal data. Units of observations do not need to be individuals but can also be countries or even organisations and political parties. Moreover, the above studies' research interest rests on explaining a positive, upward development, be it political participation, democratic development, women's representation or political interest. Yet, this is not the only application of LGC; researchers' main interest can equally lie in processes of decline or in explaining inter-individual variation that does not accumulate to an average development of either growth or decline but one that represents stability over time. Further, research interests do not need to be restricted to explaining change over time. More complex theories that predict how developments over time influence a final outcome can be equally addressed within the framework of LGC. Finally, it is also possible to model so-called parallel processes where growth is no longer the function of individual variables but of an entire growth process (see Preacher et al., 2008).

The LGC model therefore seems particularly fit for an in-depth analysis of developments in satisfaction with democracy.

Dynamics of satisfaction with democracy

In the Introduction, we referred to the presumed failure of theoretical predictions of a decrease in trust in politics, satisfaction with democracy, and more generally the belief in democratic

legitimacy. These failed predictions are anything but interchangeable, but have been derived instead from different substantive theories on economic, social, and political transformations. For example, some expect that a decreasing civic engagement leads to legitimacy loss (Lipset, 1959) whereas others trace the same result back to an increasing civic engagement (Inglehart, 1977; see also Thomassen and van Ham, 2016).

In this paper we focus on people's expressed satisfaction with democracy (SWD) as an indicator of a more general democratic allegiance. In Easton's (1965) classic conceptual framework of specific and diffuse support for the political system, citizens' SWD is an ambiguous concept. It includes both elements of performance-related and non-performance-related evaluation (see, for example, Linde and Ekman, 2003; Norris, 1999). According to Norris (1999: 11), SWD 'taps both support for "democracy" as a value (which might be expected to be relatively stable over time), and also satisfaction with the incumbent government (which might be expected to fluctuate over time)'. With these features the concept ranks halfway in Norris' (1999: 11) reconceptualization of Easton's (1965) distinction between diffuse and specific support and is labelled an evaluation of 'regime performance'. It is neither solely about evaluating policy performance nor exclusively about evaluating democratic structures or principles. Yet, despite the ambiguity and recurring cautionary notes, SWD remains a popular and important concept pertaining to citizens' legitimacy beliefs (see also Blais and Gélinau, 2007; Kumlin and Esaiasson, 2012; Linde and Ekman, 2003).

On the aggregate level, Fuchs et al. (1995) identified considerable fluctuations yet no over-all trend in how satisfied people are with democracy. Likewise, Wagner et al. (2009: 32) report strong fluctuations across a large number of European countries between 1990 and 2001. What is more, when it comes to the employed Eurobarometer data, the fluctuations disappear almost altogether when certain countries are considered in isolation. In the Netherlands, for example, average levels of SWD range between 2 and 2.5 (on a 4-1 scale) for the period 1990-2001, where a score of one refers to the category 'very satisfied' and four to 'not at all satisfied'. This is not indicative of a strong fluctuation but rather suggests stability over time (Van Ham and Thomassen, 2016). In a similar longitudinal analysis of SWD, Ezrow and Xezonakis (2014: 4) observe a trend in the data. However, and analogous to the earlier study, the specific time-trend for the Netherlands, the United Kingdom, Belgium or Ireland only suggests a pattern of long-term stability.

Depending on the level of abstraction, political attitudes are more or less stable over time. In the past, numerous studies have argued for partisanship or political ideology as one of the most stable political attitudes (see, for example, Converse, 1964). In contrast, evaluations of incumbent authorities or evaluations of the economy capture much more the current performance of incumbents and one's personal situation in relation to that (see, for instance, Fiorina, 1981; Lewis-Beck and Stegmaier, 2000). Such evaluations are more susceptible to change over time yet will likely influence more abstract concepts. Önnudóttir and Harðarson (2011), for example, find that governmental policy performance is a strong predictor of SWD. Therefore, we also anticipate that citizens' evaluations of governmental policy as well as economic evaluations are systematically related to SWD. More positive evaluations of the economy and greater approval of current governmental policy should positively affect citizens' SWD in particular years and over and above the general trend in SWD.

Additionally, other individual-level research has shown that holding elections empowers citizens and spurs optimism (Adam, 2014). It means that electoral results or the electoral context affect how satisfied citizens are with democracy. This suggests that citizens report different levels of SWD not only in response to every-day politics, or to politics in the long run, but also in response to important and defining moments in the life of a citizen, like elections. While elections generally increase SWD, especially electoral winners are boosted in their levels of satisfaction (for example Adam, 2014; Anderson et al., 2005; Blais and Gélinau, 2007; Blais et al., 2015; Curini et al., 2012; Singh et al., 2012). These studies argue that voting increases contentment with democracy because it promises the chance of getting one's preferred policies implemented and that electoral winners experience this effect more strongly than electoral losers. Hence, winners and losers differ in systematic ways in how satisfied they are with the way democracy works. On the basis of these studies, we expect that electoral outcomes affect individual-level SWD. Specifically, we expect to find winners to be systematically more satisfied than losers above and beyond the general trend in SWD. In addition to the electoral, economic and political context, we follow existing research (for example, Aarts, Van Ham and Thomassen, 2016; Norris, 2011; Önnudóttir and Harðarson, 2011) and expect that people's socio-economic status is also important for SWD but only for their levels of SWD and not for the dynamics. Generally speaking, people with a higher socio-economic status tend to be more satisfied with democracy than people with lower levels of socio-economic status. We expect that higher levels of education and income and being employed have positive effects on people's levels of SWD.

Political context, data and measurements

Political context: the Netherlands 2006-2015

During the period 2006-2015, elections to the Dutch national parliament (Tweede Kamer) were held in November 2006, June 2010, and September 2012. These three general elections were all snap elections; each of them brought about unexpected electoral outcomes and (importantly) no single party was in office throughout the entire period. Figure 1 summarises the parties' vote shares across the three elections (see Döring and Manow, 2015).

(Figure 1 about here)

Following the 2006 election, the Christian-democratic CDA formed a coalition with the social democratic PvdA and the Calvinist CU under the leadership of CDA's Jan Peter Balkenende (Balkenende-IV). The new government took over office in February 2007. The government reacted to the financial crisis of 2008 with quick and effective measures to aid the sizeable Dutch financial sector. According to polling results, the public ascribed much of this successful reaction to the social-democratic Finance Minister Wouter Bos and rewarded PvdA with renewed support. The coalition was forced to change or even put aside a number of their policy plans in favour of austerity measures. The coalition eventually broke down over an unrelated issue (participation in the ISAF mission in Afghanistan) in February 2010.

The elections of June 9, 2010 considerably changed the political landscape. CDA suffered a huge loss, and most of the former opposition parties gained support. The liberal VVD became the largest party in parliament, though with only little over 20 per cent of the vote share. The

VVD formed a minority coalition with the CDA under the leadership of Mark Rutte, and supported in parliament by Geert Wilders' populist PVV (Rutte-I).

The minority government's actions were largely dominated by concerns over the country's economic debt and further austerity measures. When the PVV refused to support further financial cutbacks the governing parties VVD and CDA were forced to call for early elections in April 2012. These were held on September 12, 2012, and the VVD further increased its electoral support and emerged once again as the largest parliamentary party. Also the social democratic PvdA recovered from its 2010 electoral loss and successfully formed a two-party coalition with the VVD under the leadership again of VVD's Mark Rutte (Rutte-II). The electoral losers of 2012 were the CDA, whose electoral support successively dropped from 26.5 per cent in 2006 to only 8.5 per cent in 2012. Additionally, Wilders' PVV was not able to maintain its electoral victory of 2010 but remained still the third largest party in the Tweede Kamer. The Rutte-II coalition is still in office in 2016.

In sum, the Dutch electoral landscape showed important fluctuations during the period 2006-2015. Until 2015, no coalition has been able to complete its term. Parties lost and won, and new parties emerged on the scene. During the period under consideration, no single party was in government coalitions throughout.

Data: the LISS panel

Our panel data have been collected in the Longitudinal Internet Studies for the Social Sciences, or LISS Panel study (refer to lissdata.nl). The LISS Panel study, conducted by the institute for data collection and research CentERdata (Tilburg University, Netherlands), started in October 2007 and continues until the present day. The panel is based on a probability sample from the Dutch administrative registers of households and individuals (GBA – *Gemeentelijke Basis Administratie*) maintained at Statistics Netherlands. In the summer of 2007, all members of more than 10,000 Dutch-speaking private households were approached through a (personalized) letter, followed by a short telephone or face-to-face recruitment interview. At the end of this interview, the respondent was asked to participate in the web-based panel. In case respondents did not have a computer with internet access themselves, CentERdata provided a simple personal computer and (ADSL) internet access for them.

The initial response in 2007 was 48 per cent of 9,844 usable household addresses, resulting in close to 5,000 participating households and almost 10,000 participating individuals. The figures are not precise, as the participation rate varies with the monthly waves of short (15-30 minutes) web-based interviews. Details can be found on the website lissdata.nl and in Scherpenzeel and Das (2011).

The monthly interviews are completed by an average response of over 70 per cent of the respondents. CentERdata has set up a package of measures in order to stimulate the continued participation of respondents, including financial stimuli. Panel mortality has been counteracted with (probability-based) refreshment samples, which have been recruited in 2009, 2011-12, and 2013-14.

The survey consists of household information (updated annually by a senior household member), regularly recurring core modules on ten topics, and around 150 project, single-wave and longitudinal studies proposed by interested researchers from all over the world (and

conducted at no cost for these researchers). By using identifying variables all panel waves, including the core modules as well as additional studies, can be merged. By 2014 the initial funding of the LISS panel expired, and pending a search for new funding the core surveys and the household information are continued but other studies can only be conducted with external funding.

The documentation and data are freely available (after registration) from lissdata.nl and from surveydata.nl. The latter website is a collaborative project which offers possibilities to search for data from various sources at the same time.

One of the recurring core modules of the LISS panel is the Politics and Values module. Since December 2007, this module has been administered to the respondents each year except 2014 (for budget reasons), so that by the end of 2015 eight waves were available. The Politics and Values module contains a basic set of questions into political attitudes, opinions and behaviour, including voting behaviour, confidence in and satisfaction with institutions, satisfaction with government policies, and SWD.

Measurements

In the LISS panel, SWD is a direct question posed to respondents ('How satisfied are you with the way in which the following institutions operate in the Netherlands? Democracy'). It is measured on a continuous 11-point scale ranging from 'very dissatisfied' (= 0) to 'very satisfied' (= 10).

To test the substantive hypotheses, we operationalize each of the explanatory predictors (socio-economic status, economic evaluations, policy performance and electoral victory) through survey items. We measure respondents' socio-economic status with three variables: education, income, and employment. Education is an ordinal variable that contains information on respondents' highest level of education with a diploma. It ranges from primary school (= 1) to university (= 6). Income is also an ordinal measure that reports respondents' self-declared personal net monthly income starting with no income (= 0) and ending with 'more than EUR 7500' (= 12). Except for second to last category, 'EUR 5001 to EUR 7500' all categories represent intervals of EUR 500. We measure employment with a variable that asked respondents to indicate what best describes their primary occupation. The variable was recoded into a binary measure, where responses to 'paid employment', 'work or assist in family business', and 'autonomous professional, freelance, or self-employed' take on a value of 1 and all other responses a value of 0.

We operationalize all other concepts with a single indicator each. Evaluations of the economy are measured through a survey item asking respondents to indicate their level of satisfaction with 'the economy' on a scale from 0 to 10. Policy performance is operationalized through the survey question 'How satisfied or dissatisfied are you, generally speaking, about what the government has done lately?' with response options ranging from 'very dissatisfied' (= 1) to 'very satisfied' (= 5). Finally, a measure of electoral victory is inferred from respondents' reported vote choice in previous elections. For our analysis we only use the re-call questions in waves immediately following the three national elections in 2006, 2010 and 2012, which means that we use re-call items in wave 0 (2007), wave 3 (2010), and wave 5 (2012). It means that electoral victory is measured on three occasions, each time with a different variable.

As with other surveys, voter turnout is over-reported also in the LISS panel by about 10 percentage points in each election (see Selb and Munzert, 2013). However, re-called voting behaviour is remarkably accurate: across the three elections the average absolute deviation ranges between .63 (2010) and .83 (2006) percentage points with the highest party-vote deviations recorded, as expected, for the populist PVV (between 2.3 and 2.6 percentage points). For the re-call question in 2007 voters of the Balkende-IV cabinet – PvdA, CDA and CU – are coded as electoral winners (= 1). The Rutte-I cabinet (2010-2012) consisted of the governing parties VVD and CDA and so respondents who indicated in 2010 having voted for either of them were coded as electoral winners (= 1). In addition, we do not treat PVV as a winning party, although it was officially supporting the minority government and also caused the falling of the government in 2012. Finally, the Rutte-II cabinet (2012-present) includes the VVD and PvdA as the governing parties. Respondents who re-called a vote choice for either of them in 2012 were coded as electoral winners (= 1) in the same year.

According to the socio-economic hypotheses, individuals differ in their level of SWD depending on their socio-economic status: citizens with larger income, higher levels of education and those who are employed are more satisfied with democracy. Yet, we have no theoretical reason to assume that socio-economic status also affects the trajectory of SWD and thus can explain why individuals differ in their rate of change. From the perspective of LGC models, socio-economic status is a time-invariant variable. Here it is assumed to only affect individuals' initial status in SWD, yet not their slopes. Therefore, we include the three variables measuring socio-economic status as predictors of the latent intercept to test whether respondents with a higher socio-economic status have a higher initial status in SWD than those with a lower socio-economic status.

In contrast to socio-economic status, we do not expect that economic evaluations and policy performance affect the average initial status. Instead, we expect that these concurrent evaluations of the political and economic context push individuals off their general development in SWD in particular years. In other words, in addition to the general dynamics of SWD, citizens' economic and governmental performance evaluations influences SWD in each year. Economic evaluations and policy performance are therefore included in the model as predictors of SWD in particular years. Both variables are rescaled to have a mean of zero and a variance of 1.

Finally, the three electoral victory variables are also time-varying covariates that are assumed to influence individuals' level of SWD in those years above and beyond the general development. Therefore, they are also included as time-specific predictors of SWD in relevant years only, i.e. 2007, 2010, and 2012.

Empirical results

Building the Latent Growth Curve of satisfaction with democracy

In a first step of the analysis we estimate an unconditional latent growth model for the development of SWD over time. Across panel waves the variable is roughly normally distributed, albeit with a slight negative skew. The variables fulfil the basic requirements for LGC.

To estimate the latent growth curve we constrain all parameters related to the latent intercept to a value of 1 to denote initial status and all parameters related to the slope to known values of time to represent the progression over time. In the case of the LISS panel eight waves of data are available that were all collected each year at the same time. However, no data collection took place in 2014. That means the LISS panel contains eight waves, running consecutively from 0 through 6, 7 being missing and continuing with wave 8. This spacing or timing of survey waves is also reflected in the constraints on the loadings of the latent slope.

(Table 1 about here)

We begin by assuming a linear growth curve and fix parameters according to the above procedure. We estimate all models in R (package *lavaan*, version 0.5-20 [Rosseel, 2012]) with maximum likelihood estimates. The results of estimating an unconditional linear growth curve are reported in Table 1.¹ They show that the estimated average intercept is 6.23 ($p < .05$) and the estimated average slope is $-.03$ ($p < .05$). This means that respondents participating in all eight panel-waves had an average level of SWD of 6.23; and on average this level declined by $.03$ each year. The average dynamics in SWD are not stable and follow a (slightly negative) trend. The results also show substantial population heterogeneity in the intercept (1.84 , $p < .05$) and slope ($.02$, $p < .05$). Both variance components are significantly different from zero, implying that respondents vary in both their starting positions and their slopes. Common model fit indices suggest an acceptable fit. However, according to model fit indices, the results of assuming a quadratic growth curve represent the data significantly better (see column two in Table 1).

(Figure 2 about here)

To model quadratic growth a second latent slope factor was assumed whose factor loadings are constraint to represent the presumed quadratic structure, i.e. 0, 1, 4, 9, 16, 25, 36, 64. Figure 2 illustrates the resulting assumed growth structure. According to the results (column two in Table 1), respondents' average level of SWD is 6.31 ($p < .05$). The curvilinear parameters suggest a trajectory of first declining values before moving upwards again. Figure 3 graphically depicts this average development and how it compares to the linear latent growth curve. Both estimated latent growth curves illustrate that SWD amongst the Dutch population was not static between 2007 and 2015. While these average growth parameters also underline average stability of SWD ranging between values of 6 and 6.5, they conceal substantial inter- and intra-individual variation. To graphically illustrate some of this variation, Figure 4 depicts 20 random individuals' trajectories in SWD between 2007 and 2015. As can be seen, there is substantial intra-individual and inter-individual variation in individuals that would be concealed, if we only assessed average levels over time.

(Figure 3 about here)

(Figure 4 about here)

The estimated variance components quantify this variation. According to the results of the unconditional quadratic LGC in Table 1, there is substantial variation between respondents in their initial status (1.85 , $p < .05$) and rate of change (linear: $.09$, $p < .05$; quadratic: $.001$, $p < .05$). This means that a latent growth curve that considers individuals' differences in SWD

¹ Information on panel respondents' background characteristics can be found in Table A.1 in the Appendix.

starting positions and rates of change is an adequate and meaningful representation of the dynamics of SWD between 2007 and 2015. Finally, there is no statistically significant relationship between respondents' initial status and the linear change rate; only the estimates for the average linear and quadratic slopes share a very small negative relationship of $-.01$ ($p < .05$).

Further inspections of the variance components suggest some heteroskedasticity, especially from 2011 to 2012 where the error variances increase from 1.16 to 1.30. Using all error variances to calculate reliability score shows that the reliability of SWD is moderate to high with values ranging between .64 and .75. It means that the proportion of observed variance in SWD that is true variance in each year varies between 64 and 75 per cent.

These first results mean that citizens' SWD during the period under consideration was not static but showed a curvilinear pattern. Additionally, individuals' differed significantly in their initial status and growth trajectory. Now we turn to the substantive variables that may contribute to the explanation of intra- and inter-individual differences in SWD.

Building a conditional Latent Growth Curve to predict SWD over time

The estimation of the complete model is presented in Table 2. The table is structured with latent factors and dependent variables in columns and independent variables and growth parameters in rows. To address some of the heteroskedasticity and autocorrelation, the model includes autocorrelated disturbances to allow the error terms to influence its successive value. Model fit indices show that the data fit the assumed structure well. Common fit indices such as CFI, TLI, and RMSEA are all within the acceptable range. In addition, the p-value associated with RMSEA fit index of .991 also indicates a close-fitting model.

(Table 2 about here)

Turning first to the dependent variables, the first column reports the predicted increase in the intercept for a one-unit increase in the three variables related to socio-economic status. All three have a statistically significant effect on the general initial status of respondents' SWD. Education and employment have a positive effect, where every additional educational diploma increases the predicted initial status in SWD by $.12$ ($p < .05$); being in employment has a slightly larger independent and positive effect. This is in line with our expectation that citizens with higher socio-economic status have a higher level of SWD. However, contrary to our hypothesis, income has a statistically significant negative, yet admittedly small, effect on respondents' initial status of SWD: basically, every additional EUR 500 in net personal monthly income decreases the predicted initial level of SWD by $.03$. Comparing the intercept variance in this conditional model with the intercept variance in the unconditional model shows a substantial reduction. In the unconditional model the variance on the intercept was 1.85 whereas in the conditional model where time-invariant predictors are included to explain some of this variance, the estimated variance is $.65$. This means that socio-economic status explains a substantial portion of the variance in respondents' initial status of SWD. Socio-economic status is thus an important explanatory factor for inter-individual differences in SWD.

The remainder of the columns in Table 2 report findings on the extent to which economic evaluations, governmental policy performance and electoral victories affect SWD above and beyond the general development. According to the results, economic evaluations consistently

have a significant positive effect on SWD. A one-unit increase in economic evaluations pushes respondents' SWD upward and off the general development in SWD with a magnitude of between 1.6 and 2.1. This almost corresponds to a two-unit increase in SWD. This effect is also the strongest amongst the three tested predictors of SWD in particular years. It means that levels of SWD are consistently heavily influenced by economic evaluations. Comparisons of individual coefficients over the 9-year period do not provide much indication that the economic crisis strengthened this relationship. Coefficients are largely comparable in size across time and do not seem to follow much of a pattern.

According to the results on policy performance, concurrent government evaluations consistently have a much weaker effect on SWD of magnitudes between .22 and .48. Nonetheless, in all years, except for in 2010, evaluations of governmental policy performance had an independent positive effect on SWD above and beyond the general trajectory and after controlling for economic evaluations. It means that specific support of governmental output is directly and consistently related to general support for democracy.

Finally, we also tested to what extent electoral victories affect SWD over and above the general dynamics. Previous studies have already found in post-election surveys and two-wave panel-studies that electoral winners are more satisfied with democracy. Testing this hypothesis within a framework of LGC and a timeframe stretching over three national elections allows a comparison of effect sizes across elections while controlling for the general trajectory of SWD and important confounders such as economic and policy performance evaluations. The reported results in Table 2 offer some interesting insights. While electoral victory in the 2006 and 2012 national elections did not have any effects on SWD above and beyond the general dynamics, winning the 2010 election did make a difference. It pushed respondents upwards in their level of SWD, and after controlling for economic evaluations and policy performance. Respondents who voted for the subsequent winners of the 2010 election, VVD or CDA, have a predicted increase in their level of SWD in 2010 of .23, which corresponds to almost a quarter of a unit.

This is not a small effect, and it is even more remarkable given the circumstances. Elections were held in June 2010 and the minority government (Rutte-I) was only formed after long negotiations in October and with the support of Wilders' party, the PVV.² For the first time in 92 years a Christian democratic or socialist party did not lead a coalition government. Moreover, for the first time in modern Dutch history, a liberal party led the government and provided the Prime Minister. According to the results of the conditional LGC, the 2010 election was also a special event for the electoral winners: compared to the previous or subsequent election, winning the 2010 election boosted SWD above and beyond the general trajectory and after controlling for important confounders. This can be further substantiated by a comparison of average individual-level change in levels of SWD between 2009 and 2010 by voting decisions in the 2010-election. Figure 5 shows the results. As can be seen, only voters of the CDA, PvdA, PVV and VVD have a statistically significant increase in their SWD from 2009 to 2010. However, both – voters of the surprise winner and kingmaker PVV and the first-time governmental leader VVD – show to have the highest change scores in SWD. It means that party-specific circumstances increased levels of SWD for voters of those two parties in the 2010 above and beyond the general trend.

(Figure 5 about here)

² The effects are also robust to a coding that considers voters of the PVV as winners.

In sum, the results show support for the idea that socio-economic status explains differences in initial status of SWD, yet not always in the expected direction. Further, the results do indeed show positive effects of economic evaluations and policy performance above and beyond the general dynamics. Finally, while most electoral winners were not boosted in their levels of SWD, voters of the minority government showed a positive and sizeable push upwards in their levels of SWD. This indicates that not only social, economic or political factors explain the dynamics in SWD but also, on occasion, electoral or rather party-specific aspects. It should also be mentioned that R-squared values for the individual SWD levels all range between .65 and .8, indicating good explanatory power of the three tested predictors.

Conclusion

In contrast with the predictions of several influential social theories, people's satisfaction with democracy in Western Europe over the past 40 years does not follow a clear (downward) trend. This finding has puzzled political scientists, and has given rise to doubt about the concept of satisfaction with democracy, as well as about the appropriateness of the analytical methods used.

The present paper attempted to shed light on these doubts, first by conceptualizing satisfaction with democracy as being influenced by both long-term, relatively stable evaluations of the democratic system in one's country (which in turn depend on one's socio-economic position), and short- to medium-term evaluations. The latter include evaluations of the economy and of government performance. Also, whether someone has voted for a political party that won government office is likely to affect their satisfaction with democracy.

Secondly, we applied latent growth curve modelling (LGC) as method of analysis, to be applied to individual-level panel data. LGC allows the estimation of both general levels and trends in satisfaction with democracy and individual variation in these levels and trends. Using data from the LISS panel for the Netherlands, with eight annual waves of interviews over the 2007-15 period, we first showed that the global trend in satisfaction with democracy was weakly negative over this period, with substantial individual variance in both intercepts and slopes.

Consequently we then estimated the impact of socio-economic status (educational level, income, employment status), economic evaluations, government policy performance evaluation, and voting for a government or opposition party on the (quadratic) latent growth curve model.

We found that all these explanatory variables have a significant impact on the variation in intercepts and slopes of the latent growth curve model. Both educational level and employment status (measured in the first wave of the panel) positively affect satisfaction with democracy, whereas income has a small negative impact. The strongest influence on satisfaction with democracy is exerted by people's (annual) economic evaluations. The better they judge the state of the economy, the more satisfied they are with democracy in their country. Thus, it appears to be the economy all over again. In addition, approval of the government has a weak positive impact on satisfaction with democracy.

Whether one has voted for a party that eventually became part of the government coalition, rather than for one of the other parties, had a significant positive impact on satisfaction with democracy only after the 2010 election. A closer inspection of this result shows that the strongest rise in satisfaction with democracy in that year occurred among the voters of VVD and PVV. Both parties not only won seats, but they also considerably strengthened their position in Dutch politics in this particular year, respectively by becoming the largest party and providing the new Prime Minister (VVD) and by obtaining a powerful role as broker for the new minority government (PVV).

Some more general lessons may be learned from our results. First, even though our empirical domain was limited to the Netherlands over a period of nine years, it seems clear that satisfaction with democracy as it is commonly measured in international survey research has a strong short-term evaluative component in addition to its long-term evaluative content. We should therefore be cautious in using this measure as an (or even: *the*) indicator of democratic legitimacy, which is thought to be more immune to short-term external influences. This point has been made before but is worth reiterating. Secondly, people tend to be more satisfied with democracy when their obtained educational level is higher and when they have work. Thirdly and finally, we have found that economic evaluations have a clearly stronger impact on (variations in) satisfaction with democracy than government policy evaluations. Voting for a 'winning' or 'losing' party in terms of government participation appears to affect satisfaction with democracy only in special circumstances, once we control for other factors.

Figures

Figure 1. Election results for the Dutch parliament per party, 2006-2012.

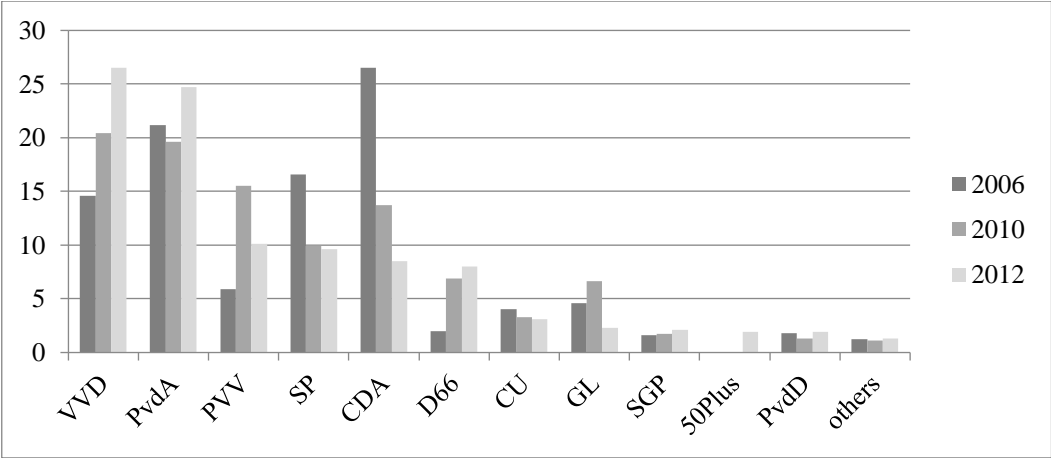


Figure 2. Assumed structure for Latent Growth Curve estimating satisfaction with democracy, linear and quadratic slopes.

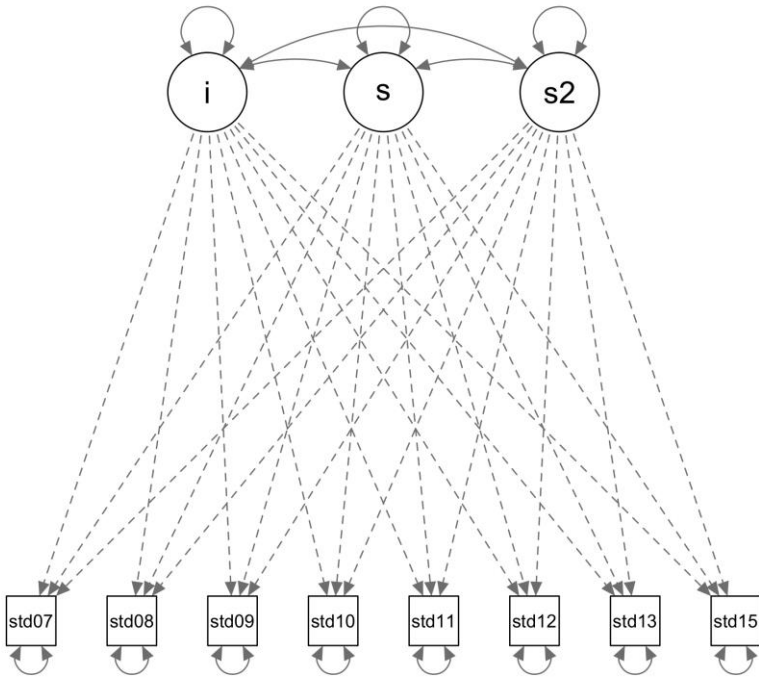


Figure 3. Unconditional Latent Growth Curves: linear and quadratic.

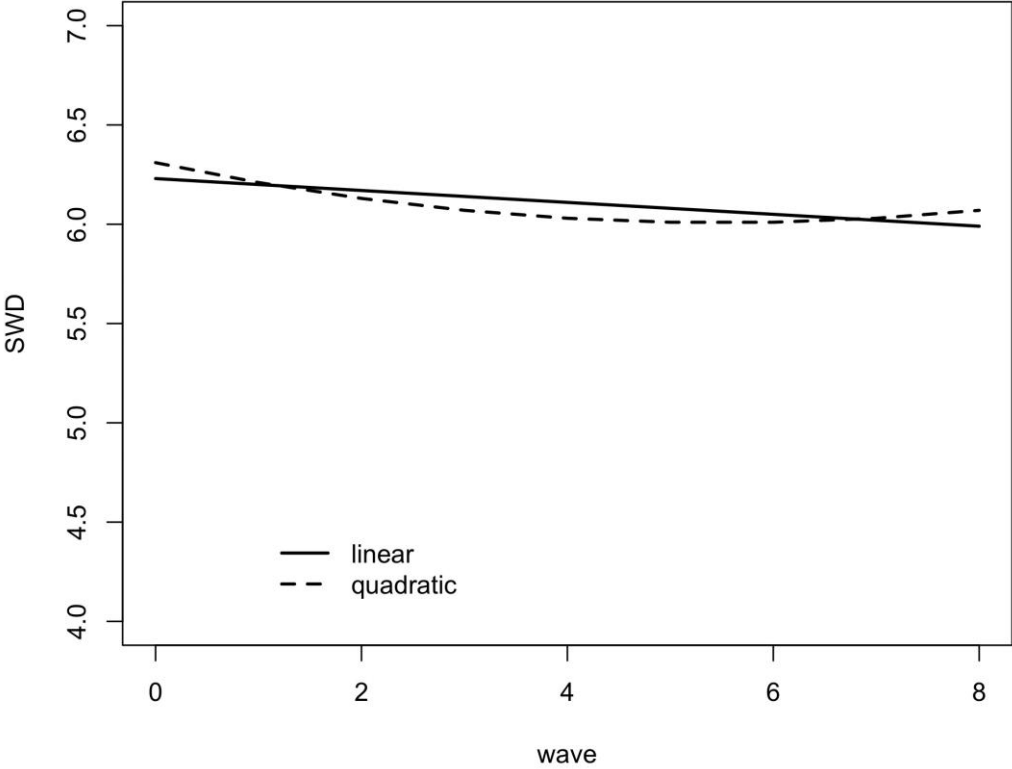


Figure 4. Satisfaction with democracy, 2007-2015: random sample, individual scores of SWD.

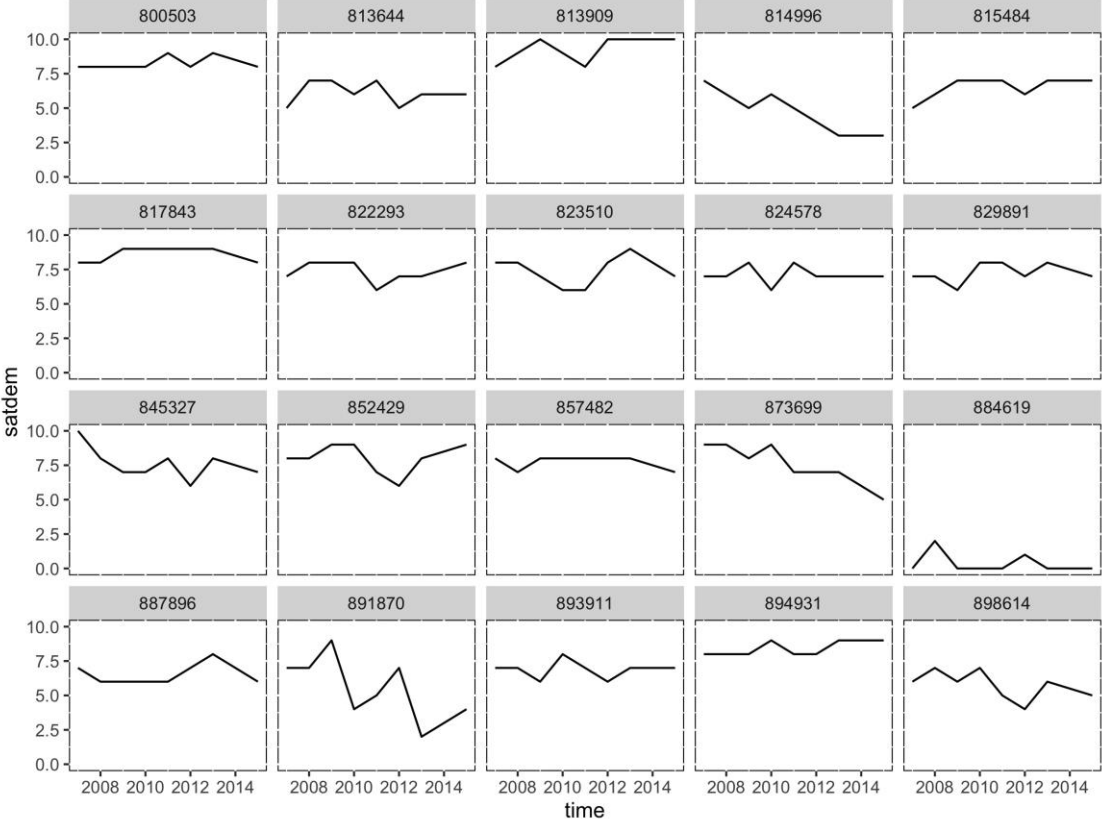
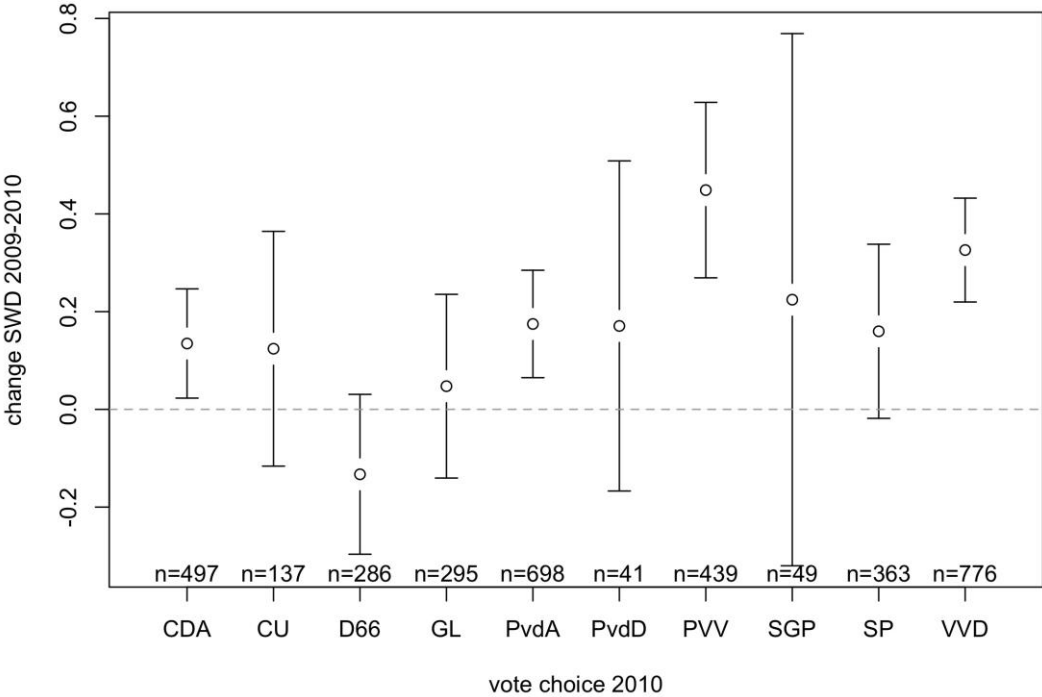


Figure 5. Change in satisfaction with democracy, 2009-2010 by 2010-vote choice.



Tables

Table 1. Unconditional Latent Growth Model predicting satisfaction with democracy (N = 1,785); standard errors in parentheses.

	linear	quadratic
mean intercept	6.23* (.04)	6.31* (.04)
mean slope	-.03* (.01)	-.11* (.01)
mean quadratic slope		.01* (.00)
variance intercept	1.84* (.08)	1.85* (.09)
variance slope	.02* (.00)	.09* (.01)
variance quadratic slope		.001* (.00)
CFI	.975	.984
TLI	.977	.983
RMSEA [90% CI]	.066 [.059; .073]	.057 [.049; .065]

Significance code: '*' $p < .05$.

Table 2. Results nonlinear latent growth model predicting satisfaction with democracy, 2007-2015 (N = 1,108); standard errors in parentheses.

	<i>latent factors</i>	<i>dependent variables</i>								
		mean intercept	SWD 07	SWD 08	SWD 09	SWD 10	SWD 11	SWD 12	SWD 13	SWD 15
education 07		.12* (.02)								
income 07		-.03* (.02)								
employment 07		.15* (.06)								
economic evaluation			1.81* (.07)	1.60* (.07)	1.72* (.07)	1.87* (.07)	1.70* (.07)	1.88* (.08)	1.96* (.08)	2.13* (.08)
policy performance			.38* (.06)	.32* (.06)	.48* (.06)	.01 n.s. (.06)	.36* (.06)	.31* (.07)	.22* (.07)	.28* (.07)
electoral victory			-.01 n.s. (.05)			.23 (.05)		-.01 n.s. (.05)		
mean intercept	5.91* (.05)									
mean slope	-.09* (.02)									
mean quadratic slope	.01* (.00)									
variance intercept	.65* (.04)									
variance slope	.05* (.01)									
variance quadratic slope	.01* (.00)									

Model fit: CFI = .958; TLI = .951; RMSEA [90% CI] = .044 [.040; .048].

Significance code: '*' $p < .05$; 'n.s.' $p > .05$

References

- Aarts, K., van Ham, C. & Thomassen, J. (2016). Modernization, Globalization and Satisfaction with Democracy. In C. van Ham, J. Thomassen, K. Aarts and R. Andeweg eds. *Myth and Reality of the Legitimacy Crisis: Explaining trends and cross-national differences in established democracies*. Oxford: Oxford University Press.
- Adam, A. (2014). Do elections bring optimism? *Electoral Studies*, 33, 137–143.
- Anderson, C.J. et al. (2005). *Losers' Consent: Elections and Democratic Legitimacy*, Oxford: Oxford University Press.
- Blais, A. & Gélinau, F. (2007). Winning, losing and satisfaction with democracy. *Political Studies*, 55(2), 425–441.
- Blais, A., Morin-Chasse, A. & Singh, S.P. (2015). Election outcomes, legislative representation, and satisfaction with democracy. *Party Politics*, (online first). Available at: <http://ppq.sagepub.com/cgi/doi/10.1177/1354068815583200>.
- Converse, P.E. (1964). The nature of belief systems in mass publics. In D. Apter, ed. *Ideology and Discontent*. New York: Free Press.
- Curini, L., Jou, W. & Memoli, V. (2012). Satisfaction with Democracy and the Winner/Loser Debate: The Role of Policy Preferences and Past Experience. *British Journal of Political Science*, 42(02), 241–261.
- Döring, H. & Philip M. (2015). Parliaments and governments database (ParlGov): Information on parties, elections and cabinets in modern democracies. Development version.
- Duncan, T. E., Duncan, S. C., & Strycker, L. A. (2011). *An Introduction to Latent Variable Growth Curve Modeling* (2nd ed.). New York: Psychology Press, Taylor & Francis.
- Easton, D., 1965. *A Systems Analysis of Political Life*, New York: Wiley.
- Ezrow, L. & Xezonakis, G. (2014). Satisfaction with democracy and voter turnout: A temporal perspective. *Party Politics*, (online first). Available at: <http://ppq.sagepub.com/cgi/doi/10.1177/1354068814549335>.
- Finkel, S. E. (1995). *Causal Analysis with Panel Data*. Thousand Oaks: SAGE Publications.
- Finkel, S. E., Pérez-liñán, A., & Seligson, M. A. (2007). The Effects of U.S. Foreign Assistance on Democracy Building, 1990-2003. *World Politics*, 59(3), 404–438.
- Fiorina, M.P. (1981). *Retrospective Voting in American National Elections*, New Haven, CT: Yale University Press.
- Fuchs, D., Guidorossi, G. & Svensson, P. (1995). Support for the Democratic System. In H.-D. Klingemann, ed. *Citizens and the State*. Oxford: Oxford University Press, 323–353.
- Hox, J., & Stoel, R. D. (2005). Multilevel and SEM Approaches to Growth Curve Modeling. In B. S. Everitt & D. C. Howell (Eds.), *Encyclopedia of Statistics in Behavioral Science* (pp. 1296–1305). Chichester: John Wiley & Sons, Ltd.

- Inglehart, R. (1977). *The silent revolution: changing values and political styles among Western publics*. Princeton: Princeton University Press.
- Kumlin, S. & Esaiasson, P. (2012). Scandal Fatigue? Scandal Elections and Satisfaction with Democracy in Western Europe, 1977–2007. *British Journal of Political Science*, 42(02), 263–282.
- Linde, J. & Ekman, J. (2003). Satisfaction with democracy: A note on a frequently used indicator in comparative politics. *European Journal of Political Research*, 42(3), 391–408.
- Lipset, S.M. (1959). Some social requisites of democracy – Economic development and political legitimacy. *American Political Science Review* 53 (1), 69-105.
- Muthén, B. O., & Curran, P. J. (1997). General longitudinal modeling of individual differences in experimental designs: A latent variable framework for analysis and power estimation. *Psychological Methods*, 2(4), 371–402.
- Neundorf, A., Smets, K., & Garcia-Albacete, G. M. (2013). Homemade citizens: The development of political interest during adolescence and young adulthood. *Acta Politica*, 48(1), 92–116.
- Norris, P. (1999). Introduction: The Growth of Critical Citizens? In P. Norris, ed. *Critical Citizens: Global Support for Democratic Governance*. Oxford: Oxford University Press, 1–27.
- Norris, P. (2011). Does Democratic Satisfaction Reflect Regime Performance? In M. Rosema, B. Denters, & K. Aarts (Eds.), *How Democracy Works: Political Representation and Policy Congruence in Modern Societies* (pp. 115–136). Amsterdam: Pallas Publications.
- Önnudóttir, E. H., & Harðarson, Ó. Þ. (2011). Policy performance and satisfaction with democracy. *Stjórnsmál & Stjórnslýsla*, 2(7), 411–429.
- Paxton, P., Hughes, M. M., & Painter, M. A. (2010). Growth in women’s political representation: A longitudinal exploration of democracy, electoral system and gender quotas. *European Journal of Political Research*, 49(1), 25–52.
- Plutzer, E. (2002). Becoming a Habitual Voter: Inertia, Resources, and Growth in Young Adulthood. *American Political Science Review*, 96(1), 41–56.
- Preacher, Kristopher J, Wichman, Aaron L, MacCullum, R. C., & Briggs, N. E. (2008). *Latent Growth Curve Modeling*. London: SAGE Publication.
- Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1–36.
- Scherpenzeel, Annette, and Marcel Das (2011). “True” longitudinal and probability-based internet panels: Evidence from the Netherlands. In: Marcel Das, Peter Ester, and Lars Kaczmirek (eds.) *Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies*. New York/London: Routledge, 77-104.
- Singer, J. D., & Willett, J. B. (2003). *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. Oxford: Oxford University Press.

Singh, S., Karakoç, E. & Blais, A. (2012). Differentiating winners: How elections affect satisfaction with democracy. *Electoral Studies*, 31(1), 201–211.

Thomassen, J. & van Ham, C. (2016). A legitimacy crisis of representative democracy? Introductory chapter. In C. van Ham, J. Thomassen, K. Aarts and R. Andeweg eds. *Myth and Reality of the Legitimacy Crisis: Explaining trends and cross-national differences in established democracies*. Oxford: Oxford University Press.

van Ham, C. & Thomassen, J. (2016). The myth of legitimacy decline: An empirical evaluation of trends in political support in established democracies. In C. van Ham, J. Thomassen, K. Aarts and R. Andeweg eds. *Myth and Reality of the Legitimacy Crisis: Explaining trends and cross-national differences in established democracies*. Oxford: Oxford University Press.

Wagner, A.F., Schneider, F. & Halla, M. (2009). The quality of institutions and satisfaction with democracy in Western Europe - A panel analysis. *European Journal of Political Economy*, 25(1), 30–41.

Appendix

Table A.1. Demographics of respondents in 2007 with reported SWD in all eight waves.

	mean	sd	min	max
Female (= 1)	0.46	0.5	0	1
Age	50.91	13.42	16	86
Education (highest level with diploma)	3.7	1.41	1	6
Employed	0.58	0.49	0	1
Income (net personal monthly, in categories)	3.56	2.01	0	12
Political Interest	2.1	0.55	1	3
Left-Right Placement	5.14	2.13	0	10