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# Political Preferences of (Un)happy Voters: Evidence Based on New Ideological Measures

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# Political Preferences of (Un)happy Voters: Evidence based on new ideological measures

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## Abstract

We examine the relation between political preferences and happiness. We first examine the dimensionality of contemporary political ideology using survey data of a representative sample of Dutch citizens. We use factor-analysis, and identify and validate 4 relevant dimensions that capture 1) preferences for economic equality, 2) preferences for markets and efficiency, 3) preferences for personal and cultural freedom, and 4) nationalist and populist preferences. In subsequent regression analyses, we find that preferences for populism and economic equality are associated with lower levels of life-satisfaction, whereas preferences for more personal and cultural freedom are associated with higher levels of life-satisfaction.

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## 1. Introduction

Back in the 18<sup>th</sup> century in the French parliament, the political divide was clearly visible. Loyalists to the king were seated to the president's right, whereas supporters of the revolution were seated on the left-hand side of the legislative assembly. It was that context where the term left-wing politics versus right-wing politics found its origin. Nowadays, the left generally refers to political parties or politicians who are in favour of state intervention with respect to social security and income (re)distribution, whereas the right refers to those who favour minimal government involvement and market outcomes and emphasize tradition.

With recent events such as the British referendum on European Union membership, the 2016 American Presidential elections, and several other elections across the world, it has become clear that political campaigns are no longer focused on traditional left-wing versus right-wing topics. Popular media have even suggested the end of left- vs. right-wing ideology and claim the emergence of a new political divide between parties competing for protectionist (closed border) policies and globalist (open border) policies; and between the establishment and the anti-establishment.<sup>2</sup>

Despite (or maybe due to) the simplicity of a left-right one-dimensional scale, the left-right typology has become part of contemporary political journalist jargon and is used by researchers to develop and test comparative political economy theories - both on a macroeconomic and microeconomic level (Albright, 2010). Examples include the median voter theorem (Downs, 1957), the influence of partisan politics on macroeconomic outcomes (Hibbs, 1977) and the rational partisan theory of Alesina (1987). Besides theoretical merit, empirical constructs are developed to link the left-right scale to economic outcomes (e.g. Bjornskov, 2005; Di Tella and MacCullogh, 2005; Hessami and Uebelmesser, 2013; Tavares, 2004). Upon the availability of empirical constructs for political ideology, it is probably no surprise that researchers have started to explore the relation between political ideology and happiness too. This literature, by and large, finds that right-wing (conservatist) voters are happier than left-wing (liberalist) voters (see, e.g. Bixter, 2015; Carroll, 2007; Napier and Jost, 2008; Taylor, Funk and Craighill, 2006).

In this paper we aim to shed new light on the concept of political ideology and its relation with happiness. To examine the dimensionality of political ideology and its relation with happiness (i.e. life-satisfaction), we use data that is obtained from a survey of over 2400 Dutch citizens. The data collected by CentERdata represent a cross-section of the Dutch population. In the survey, respondents expressed their political preferences with respect to 40 political statements, their self-

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<sup>2</sup> A brief overview of examples can be found in the Economist, July 30<sup>th</sup>, 2016.

reported political position on a traditional left-right scale, their level of life-satisfaction, as well as various other social-demographic variables.

Our first objective is to challenge the idea that political ideology is a one-dimensional concept. Most certainly we are not the first to do so. Eysenck (1954) already suggested a two-dimensional framework, in which a distinction should be made between political views related to economic preferences and views with respect to the implementation of such policies. Ever since, many followed in his footsteps and aimed to classify political ideology using conceptual, discursive and quantitative approaches (see Maynard (2013) for an overview). This paper fits in with the tradition of the quantitative approach (see e.g. Albright, 2010; Achterberg and Houtman, 2009; Bakker, Jolly and Polk, 2012; Conover and Feldman, 1984; Feldman, 2013; Layman and Carsey, 2002; Treier and Hillygus, 2009). That is, we use (both exploratory and confirmatory) factor analysis to identify latent dimensions of contemporary political preferences. Yet, unlike previous approaches: 1) we have no a priori assumptions about the number of underlying dimensions to be observed in the data, 2) we use generally accepted statistical tests to decide about the appropriate number of dimensions to be identified in the data, 3) we do not place restrictions on the orthogonality of dimensions and allow for correlation between the identified dimensions, and 4) use a separate subset of our data to statistically validate the model structure obtained under 1-3.

Previewing our factor analyses results, we find evidence in favour of four dimensions: 1) preferences for economic equality, 2) preferences for markets and efficiency, 3) preferences for personal and cultural freedom, and 4) nationalist and populist preferences. We find that these dimensions are not mutually exclusive and only modestly correlate with a traditional left-right measure up until a value of  $r=0.5$ .

The second objective of this paper is to examine the relation between the identified dimensions of political ideology and life-satisfaction. As far as it is known to us, this is the first approach to link multidimensional political ideology measures to indicators of life-satisfaction. Our results suggest that preferences for populism and economic equality are associated with lower levels of life-satisfaction, whereas preferences for more personal and cultural freedom are associated with higher levels of life-satisfaction. In line with our argument that contemporary political ideology is not able to be captured on a simple left-right scale, we are, at first glance, not able to confirm the hypothesis that right-wing people are happier than left-wing people. However, when we control for the populist dimension, we are able to verify the classic hypothesis that right-wing (conservative) voters are happier than left-wing (liberalist) voters. We find evidence that this effect is largely due to the fact that right-wing voters are, generally speaking, less in favour of economic equality than left-wing voters.

The paper is organized as follows. In section 2, we describe the data and provide descriptive statistics. In this section, we also explain the exploratory factor analysis model and provide estimation results. Furthermore, we discuss the CFA model and provide estimation results. In section 3, we illustrate that the political ideology measures obtained from our analysis are substantially different from the traditional left-right measure. In section 4, we analyse the relation between multidimensional political ideology measures and happiness. Lastly, we conclude in section 5.

## 2. Data and Method

We held a survey in the spring of 2016 among 2465 respondents from 1981 households using the household panel of CentERdata. This panel consist of a representative sample of the Dutch population. The survey focused on political preferences and confronted respondents with 40 statements on contemporary political issues.<sup>3</sup> The topics of the statements are partly based on the issues registered in the Manifesto Project database, which covers electoral programs in over 50 countries (Volkens et al., 2013). These are supplemented with (validated) statements that are particularly relevant for the Dutch political landscape. Furthermore, we asked our respondents a broad set of questions concerning their socio-economic background, income expectations and life-satisfaction. We also asked them which political party they would vote for if elections were held the day after the survey, and whether they could place themselves on a 7-point left-wing vs. right-wing Likert scale.<sup>4</sup> Of the 2456 surveys, 2170 contained no missing values, and hence, are used for the subsequent analysis. Table 2.1 shows the characteristics of our sample of respondents.

Table 2.1. Characteristics of Respondents

	Mean	Std. Dev	N
<b>Age</b>	54	17	2453
<b>Net Household Income</b>	2820	1391	2449
<b>Life-satisfaction</b>	7.4	1.5	2453
<b>Women (in percentages)</b>	48.8	-	2453
<b>Employed (in percentages)</b>	50.5	-	2453
<b>Married (in percentages)</b>	76.7	-	2453
<b>Religious (in percentages)</b>	17.4	-	2442

The average age of the respondents is 54, the youngest respondent being 16 and the eldest 93. 48.8% of the sample is female and average monthly household income is 2820 (net), relatively close to the country's average.<sup>5</sup> Descriptive statistics of the statements can be found in the appendix.

<sup>3</sup> The statements are shown in table A1 in the appendix.

<sup>4</sup> The survey (in Dutch) is available upon request.

<sup>5</sup> Dutch net household income per year is 34,200 euro, resulting in 2,850 euro per month. This is household income in 2014, the most recently available year. Source: Central Bureau of Statistics Netherlands.

Below, we analyse whether there is a latent structure underlying the responses to the 40 political statements of the survey. That is, we propose a factor analytic model that assumes that one or more underlying dimensions are able to predict the answers to each of the statements. We proceed in two steps. In the first step we use 75% of the dataset for an Exploratory Factor Analysis (EFA). This 75% of the data was selected by generating a pseudorandom number from a uniform distribution for each observation. Subsequently, the data was sorted by this pseudorandom sequence and the first 75% forms the sample for the EFA. The aim of the EFA is to separate the information contained in the statements that is common to all statements from the information that is unique to individual statements. More specifically, we impose a model structure on the covariance matrix of all political statements in which a small number of so-called factors approximate the observed variance in the sample covariance matrix. To decide about the appropriate model structure, it is important to note that we do not impose a priori restrictions on the outcome (i.e., the number of factors). The goal of the EFA is to examine whether the observed variables can be approximated by a smaller number of latent factors and to decide about this number we use conventional statistical tests.

In the second step, we use the remaining 25% of the observations to validate the identified dimensions of political ideology using a Confirmatory Factor Analysis (CFAs). In the CFA we test the hypothesized relations between the observed statements and the underlying dimensions by restricting them to those found in the EFA. As such, we compare factor models in terms of how well they fit the underlying data and validate the dimensionality of political ideology (see Wansbeek and Meijer (2000) for an exhaustive discussion on EFA vs. CFA).

## 2.1 Exploratory Factor Analysis

The calibration sample consists of approximately 1840 observations. We restrict the analysis to only those observations for which none of the indicators contains missing values. In all, we have 40 indicators (i.e. statements) of an unknown number of unobserved factors. As the number of factors is a priori unclear, we need a factor model that is capable of estimating multiple factors. The multiple factor model with  $m$  indicators and  $k$  factors is:

$$\begin{aligned} \mathbf{y}_n &= \mathbf{B}\xi_n + \boldsymbol{\varepsilon}_n \\ \xi_n &\sim N(0, \boldsymbol{\Phi}) \\ \boldsymbol{\varepsilon}_n &\sim N_M(0, \boldsymbol{\Omega}) \end{aligned}$$

where  $\mathbf{y}_n$ ,  $\xi_n$  and  $\boldsymbol{\varepsilon}_n$  are vectors with  $M$  elements and  $\mathbf{B}$  is a  $M \times k$  matrix. It is assumed that  $\xi_n$  and  $\boldsymbol{\varepsilon}_n$  are independent and that  $\boldsymbol{\Omega}$  is an  $M \times M$  matrix of diagonals. This leads to the following



distribution for  $y$ :  $\mathbf{y}_n \sim N_M(0, \Sigma)$  with covariance matrix  $\Sigma = \mathbf{B}\Phi\mathbf{B}' + \Omega$ .<sup>6</sup> Together these equations form the multiple factor model, where  $\mathbf{B}$  is a matrix of factor loadings,  $\xi_n$  is a vector of factor scores and  $\mathbf{y}_n$  represents the indicators for  $\xi$ , the latent variables. We estimate the multiple factor model with maximum likelihood and predict factor scores using the Bartlett predictor, as this predictor is known to produce unbiased estimates, and is more likely to generate the actual factor scores compared to other predictors. Interpretation of the factors is based on rotated factor loadings. We use the oblique rotation, as this method allows for correlation between factors and does not restrict them to be orthogonal (Wansbeek and Meijer, 2000).

We use several statistical tests to determine the appropriate number of factors. First, we use Cattell's scree-test, which graphs the number of factors against the eigenvalues of these factors (Cattell, 1966). Based on this criterion, we should retain all factors before the 'elbow' or kink in the plot. Second, we use the Kaiser-criterion, which states that all factors with an eigenvalue larger than 1 should be retained. Third, we consider the Bayesian Information Criterion (BIC); the lower the BIC, the better the model fit. Fourth, we rely on the Root Mean Squared Error of Approximation (RMSEA). The rule of thumb for selecting the optimal amount of factors based on the RMSEA is to retain the smallest number of factors for which this statistic falls below 0.05 (Preacher et al, 2013). Both the BIC and the RMSEA give a penalty for adding parameters to the model, and thus, favour a more parsimonious model. Apart from statistical properties of the model, it is equally important that the extracted factors can be interpreted as the unobservable latent variables you intend to capture, in our case dimensions of political ideology. Interpretation of the factors is done on the basis of conceptual similarity of those statements with high (generally > 0.3) estimated factor loadings.

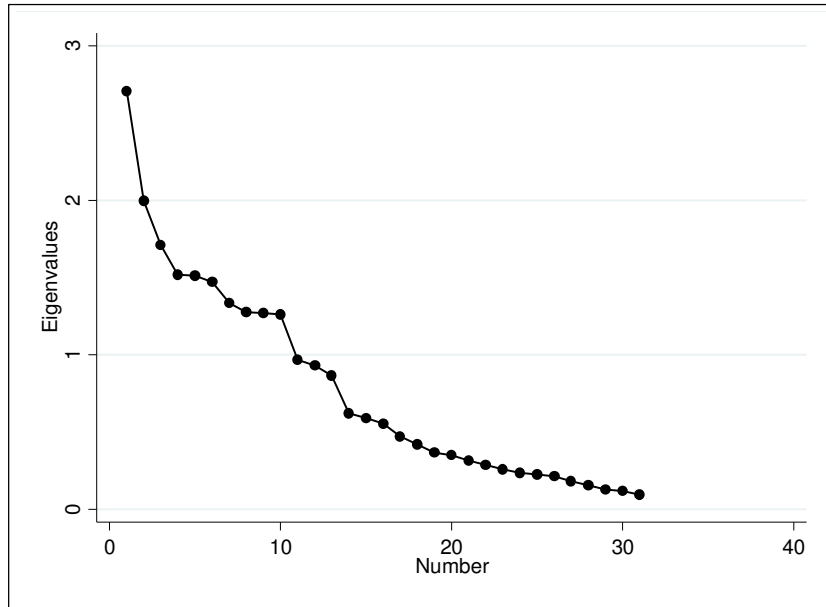
Figure 2.1 shows the scree-plot of the EFA on the statements. Based on this criterion alone, the number of factors to be retained is ambiguous. Several kinks, or 'elbows', are observed. The clearest kink is found at factor 4, indicating that we should retain 3 factors. However, the 'elbow' at factor 11, suggesting 10 factors, would also give a plausible outcome. In cases of double or triple 'elbows' as observed here, Cattell (1966) argues that (as an empirical rule) the lowest number of factors should be retained. However, without any ulterior base for choosing between a lower or higher number of factors more investigation is warranted. The Kaiser criterion suggests that 10 factors should be retained. The BIC, however, is in favour of 8 factors. The RMSEA for the 3-factor model is 0.052 and for the 4-factor model is 0.044; increasing the number of factors to 5 or more reduces the RMSEA further. Based on this criterion, we should retain 4 factors.

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<sup>6</sup> As the distribution for  $y$  reveals, the indicators are assumed to have a multivariate normal distribution. Even though our statements are ordinal variables, the consistency of the estimators are not affected by this non-normality of our variables (see Wansbeek and Meijer, 2000).

Overall it is clear that the different decision rules do not give consistent information on the appropriate number of factors to extract. In short, they direct us towards a model structure with 3, 4, 8 or 10 factors. We investigate the interpretability of these models to find a conclusive answer on the underlying factor structure.

Figure 2.1. Scree-plot of Eigenvalues against the Number of Extracted Factors - 75% of Sample



The interpretability of the 3- and 4-factor models is very clear. Statements that load on the factors are evidently related to each to each other, factor loadings are high and the factor are interpretable as measuring elements of ideology. However for the 8- and 10-factor models this is not the case. Due to several reasons the extracted factors are difficult to interpret. First, seemingly unrelated statements load on the same factors. Moreover, factor loadings are low, especially compared to those of the 3- and 4-factor outcome. This makes distinguishing what the factors represent in terms of political beliefs unclear. Taking this and the factor retention criteria into account, we believe the 3 and 4 factor models best represent the underlying structure of political ideology. As such, we predict factor scores for both factor structures. Before turning to the interpretation of the factors, we first examine their correlations.

Tables 2.2 and 2.3 show the correlations between factors for both factor structures. Correlations are never higher than 0.2, which indicates that each factor is capturing a different element of ideology. Table 2.4 shows correlations between the factors of the 3- and 4-factor solutions. These correlations suggest that the factors retained in the 3-factor structure are well determined in the 4-factor solution, since these correlations are close to one. Furthermore, correlations between the additional factor of the 4-factor solution and the factors in the 3-factor

model are relatively low. This suggests that the fourth factor captures a distinctly separate element of ideology. We continue with the interpretation of the factors as dimensions of political ideology and conduct confirmatory factor analyses of the 3-factor and 4-factor solutions using the validation sample. We aim to verify the factor structure underlying the data and test how these models perform in terms of cross-validation and generalizability.

Table 2.2. Correlation between Factors - 3 Factor Solution EFA

	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>
<b>Factor 1</b>	1.00		
<b>Factor 2</b>	-0.02	1.00	
<b>Factor 3</b>	-0.13	0.17	1.00

Table 2.3. Correlation between Factors - 4 Factor Solution EFA

	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>
<b>Factor 1</b>	1.00			
<b>Factor 2</b>	0.00	1.00		
<b>Factor 3</b>	-0.12	0.13	1.00	
<b>Factor 4</b>	0.10	-0.04	-0.01	1.00

Table 2.4. Correlation between Factors from 3 and 4 Factor Solutions - EFA

	<b>Factor 1 - 3 Factor Solution</b>	<b>Factor 2 - 3 Factor Solution</b>	<b>Factor 3 - 3 Factor Solution</b>
<b>Factor 1 - 4 Factor Solution</b>	0.99	-0.06	-0.14
<b>Factor 2 - 4 Factor Solution</b>	0.03	0.97	0.12
<b>Factor 3 - 4 Factor Solution</b>	-0.11	0.15	0.99
<b>Factor 4 - 4 Factor Solution</b>	0.08	-0.27	-0.13

Table 2.5 contains an overview of which statements load on what factor for the 3- and 4-factor solution. We take into account those statements with a factor loading higher than 0.30 and search for similarity between these loadings to interpret the factors as dimensions of ideology. The first three dimensions are represented in both factor models, and therefore, their interpretation does not differ between the factor structures. The additional fourth dimension is only represented in the 4-factor model.

We label the first factor *Populism*. Statements that are related to this dimension are of a nationalist nature. They deal with a negative attitude towards immigrants and harsher sentences for criminals. It captures a preference for more national sovereignty and protection of the domestic economy. This dimension is associated with the belief that the will of the (native) ‘people’ should go before that of the establishment or some elite group (Mudde and Kaltwasser, 2013). Furthermore, it is also associated with support for more direct democracy and for the exclusion of certain (minority) groups, which have values and attitudes viewed as not in the interest of the ‘people’ (Jagers and

Walgrave, 2007). Nativism is a characterizing feature of this populist dimension and forms the basis for arguing to treat part of the citizens in a country unequally. A negative association with this dimension would imply support for a multi-cultural society, where all citizens are treated equally, demand for international cooperation and trust in supranational organizations. The *Populism* dimension, in short, captures nationalist and populist political preferences. This dimension is very robust in all factor solutions, which suggests that it is a very influential element of contemporary political ideology.

The second factor we label: *Equality*. Statements that deal with income inequality, the rights of the working class, and nationalization and regulation of markets form this economic dimension. This dimension constitutes of the belief that redistribution and economic equality should be strived for by society. It is in line with the ideology of social democracy, which encompasses that democratic collective action should be used to extend economic equality and oppose injustice created by unregulated markets with too much power. Collective action may occur via different channels such as political parties, trade unions or other institutions that represent the interests of the working class. An egalitarian society should be achieved through (labour market) regulation, economic policies, social welfare, and, if necessary, nationalization of some markets (Jackson, 2013). In brief, this dimension captures a political preference for economic equality.

The statements that load high on the third factor deal with freedom and equal rights regardless of sexual orientation, gender, and decision-making power in an individual's life choice. Therefore, we name this factor *Self-determination*. This dimension associates with liberal ideological views. It, as does liberalism, places high value on rights, justice, individuality, equality and liberty for everyone regardless of gender or sexual orientation. People should have a high level of autonomy and intervention of political power in social life should be limited. Every individual should be able to choose his or her own life plan. This dimension is a social one in the sense that it encompasses views on how life should be organized. The counterpart of this dimension can be described as the belief in traditional morality, authority and established order (Freeden and Stears, 2013). In sum, this dimension *Self-determination* measures political beliefs in personal and cultural freedom.

Lastly, we label the fourth factor *Efficiency*. This second economic dimension captures the beliefs that the government has a disparaging role and the economy should be deregulated, taxes cut, markets and companies privatized, and the welfare system reformed. Statements that load high on this dimension deal with spending cuts on social security, more decentralization of government tasks, emphasis on market forces in health care, and a European constitution replacing the Dutch one. It is related to the ideology of economic libertarianism, which prioritizes the economy and approaches any political issue from an economic view. There is a focus on efficiency, not only in economics, but also in politics. The role of the government should be small, solely to protect

property rights, enforce contracts and clear markets from cartels or anything that prevents free markets. Other government functions should be taken over by the market, which should be deregulated as much as possible. According to economic libertarianism, there is a role for democracy, but this should be as rule-based, i.e. constitutional-based, as possible. Democracy's role should be one of indirect representation (Gamble, 2013). Altogether, this economic dimension captures preferences for markets and efficiency.

Table 2.5. Factor Loadings - 3 and 4 Factor Solution

3 Factors	4 Factors	
<i>Factor 1 - Populism</i>		
0.812	0.810	Borders should be closed for asylum-seekers.
0.790	0.796	The government should cut spending on development aid.
0.668	0.668	The Netherlands should leave the European Union.
-0.660	-0.685	Immigrants are entitled to social security.
0.609	0.619	National sovereignty is more important than international relations.
0.537	0.531	The death penalty should be reintroduced in the Netherlands.
0.485	0.476	Outcomes of referenda should be binding for the government.
-0.421	-0.419	Everyone residing in the Netherlands should be treated equally, irrespective of religion, race or gender.
0.421	0.403	Governors, such as the Prime Minister and mayors, should be chosen in direct elections.
0.392	0.391	Freedom of expression is more important than protection against discrimination.
0.382	0.381	Nuclear energy is the best alternative when fossil fuels are depleted.
0.378	0.367	The government should protect the domestic economy, for example by taxing imports.
-0.345	-0.361	Sustainable development is more important than economic growth.
0.345	0.337	To protect the Dutch state, it is allowed to restrict certain freedom, such as the right to privacy or freedom of religion.
0.339	0.333	To encourage entrepreneurship, income taxes should be reduced.
0.314	0.308	The government should cut spending on unemployment benefits.
-0.300	-0.300	A European constitution should be created, which will replace the Dutch constitution.
x	0.307	The government should invest in education, even during recessions.
<i>Factor 2 - Equality</i>		
0.618	0.642	Income inequality is more important than economic growth.
0.514	0.508	In order to protect the rights of workers, trade unions should be given more power.
0.452	0.476	To better protect the rights of consumers, the government must regulate markets more.
0.451	0.431	All utilities, such as gas, water and electricity, should be nationalized.
-0.373	x	Reducing the government deficit should be given a higher priority than investments in the social security system.
-0.366	x	Dismissal law should become more flexible.
0.365	0.392	Access to museums should be free for all Dutch.
-0.362	x	The government should cut spending on unemployment benefits.
0.322	0.312	Outcomes of referenda should be binding for the government.
0.301	x	During recessions the government should not cut spending, but stimulate the economy by investing more.
x	0.305	Governors, such as the Prime Minister and mayors, should be chosen in direct elections.
<i>Factor 3 - Self-determination</i>		
0.743	0.734	It should be possible for same-sex couples to adopt children.
-0.669	-0.656	Civil servants may refuse to marry same-sex partners.
0.548	0.558	Euthanasia should be allowed to all.
-0.379	-0.363	When a mother has a paid job, it will be at the expense of her children.
x	0.314	Soft-drugs should be legalized.

<i>Factor 4 - Efficiency</i>		
x	0.499	Insurance companies should have access to individual medical records, so they can better determine the height of insurance premiums.
x	0.478	A European constitution should be created, which will replace the Dutch constitution.
x	0.397	It is a good thing that municipalities have more responsibilities, for example for youth care.
x	0.359	The government should cut spending on unemployment benefits.
x	0.357	Dismissal law should become more flexible.
x	0.332	Reducing the government deficit should be given a higher priority than investments in the social security system.
x	0.312	The minimum wage should be abandoned.

Note: the first column gives factor loadings for the 3 factor solution; the second column for the 4 factor solution. An 'x' indicates no load of that statement on the factor.

## 2.2 Confirmatory Factor Analysis

Using confirmatory factor analyses, we test the model fit of the 3-factor and 4-factor solutions obtained from the EFA. To this end we use the validation sample. Our goal is to cross-validate the factor structure, and find which model best balances fit to the underlying data structure, in terms of the optimal number of factors, and generalizability (see Preacher et al, 2013).

CFA is based on the same multiple factor model as EFA; however, in CFA there are restrictions on the matrix of factor loadings,  $\mathbf{B}$ , and on the covariance matrix,  $\Phi$ .<sup>7</sup> These restrictions are either based on theoretical considerations or based on an EFA-implied factor structure. The latter is the case for us. We cross-validate the 3-factor and 4-factor structures by estimating a fully constrained model for each factor structure. In such a model the parameters are restricted to be equal to the estimated coefficients of the EFA, the variance of the latent dimensions restricted to 1 and their covariance constrained to be equal to their correlation coefficient after rotation and prediction in the EFA (van Prooijen and van der Kloot (2001), Preacher et al. (2013)).

In order to determine which of the 2 factor structures is superior in terms of generalizability, we present 5 goodness-of-fit statistics. We compute a Likelihood Ratio (LR) test of the hypothesized model versus the saturated model. The null-hypothesis of this test is that the hypothesized model fits as well as the saturated model. Accepting the null indicates good model fit. We also present the Comparative Fit Index (CFI), a relative fit index, and the RMSEA, here used as a measure of absolute fit. The CFI should be higher than 0.95 for good fit, and across models a higher CFI indicates a better fit. The RMSEA has a cut-off value of 0.06 to indicate good model fit. We also compute the standardized root mean squared residual (SRMR), which is based on the covariance of the residuals. For this measure, values closer to 0 are considered to be better, but a SRMR lower than 0.08 can be

<sup>7</sup> All variables in a CFA model are distributed as in the EFA model. As mentioned in footnote 1, the indicators are assumed to have a multivariate normal distribution, which is unlikely to hold; however, the estimators remain to be consistent. Nevertheless, we adapt standard errors and chi-square tests using the Satorra-Bentler adjustment, which is robust to non-normality. Since many goodness-of-fit statistics are based on chi-square tests, this adjustment makes these also robust to non-normality (Satorra and Bentler, 1994)

interpreted as adequate model fit. Lastly, we calculate the BIC. The smaller the BIC, the better the fit of the model compared to a different model that includes the same variables (Hu and Bentler, 1999).

Table 2.6 gives an overview of the goodness-of-fit statistics for the 3-factor and 4-factor solutions. The likelihood ratio test is rejected for both factor structures and the CFI is lower than the threshold value for good fit. However, the latter fit index is higher for the 4-factor model, indicating that this model fits better than the 3-factor model. On the other hand, the RMSEA is lower than 0.06 and the SRMR lower than 0.08 for both models. However, the BIC is lowest for the 4-factor model, indicating that this model has superior fit. Based on these indices we conclude that, the model with 4 factors fits (slightly) better than the 3-factor model. Therefore, we prefer a 4-dimensional representation of political ideology. Nevertheless, in subsequent analysis, we will use the 3-factor model for robustness checks.

Table 2.6. Goodness of Fit Statistics - Parameters constrained to Factor Loadings of EFA

	LR		CFI	RMSEA	SRMR	BIC
	Chi2	p-value				
<b>3-Factor solution</b>	1843.04	0.00	0.738	0.050	0.073	57441.74
<b>4-Factor solution</b>	1550.41	0.00	0.810	0.042	0.067	57101.75

### 3. The New Dimensions vs. the Left-right Dimension

Based on our results above, we proceed and predict factor scores for each subject in our dataset by conducting a CFA on all observations. Scores for both the 4-dimensional outcome and the 3-dimensional outcome are predicted. We use the former as main predictors and the latter for robustness checks.

To examine the difference between the new dimensions and left-right ideology, we report simple correlations in table 3.1. Left-right ideology is positively correlated with *Populism* and *Efficiency* indicating that people that self-reported to be right are more likely to have beliefs that are associated with these dimensions. Left-right ideology is negatively related to *Equality* and *Self-determination* suggesting that beliefs associated with these dimensions are more likely to be associated to a left-wing self-report. These relations are in line with expectations. Moreover, as none of the correlations are near perfect, we are capturing not the same aspects of ideology with these dimensions than left-right ideology encompasses. Perhaps surprisingly, the relation between the populist dimension and left-right ideology is strongest. It suggests that the left-right scale might nowadays be interpreted on populist grounds, whereas this scale was first associated with economic issues (de Vries, Hakhverdian, and Lancee, 2013). As argued by these authors, a change in the interpretation of left-right ideology shows the volatility of left-right ideology and its dependency on

the dynamics of the political landscape. Furthermore, our belief that *Populism* is a very dominant dimension in contemporary politics is strengthened by these correlations.

Table 3.1. Correlation between Dimensions of Ideology and Self-reported Left-Right Ideology - 4 Factor Solution

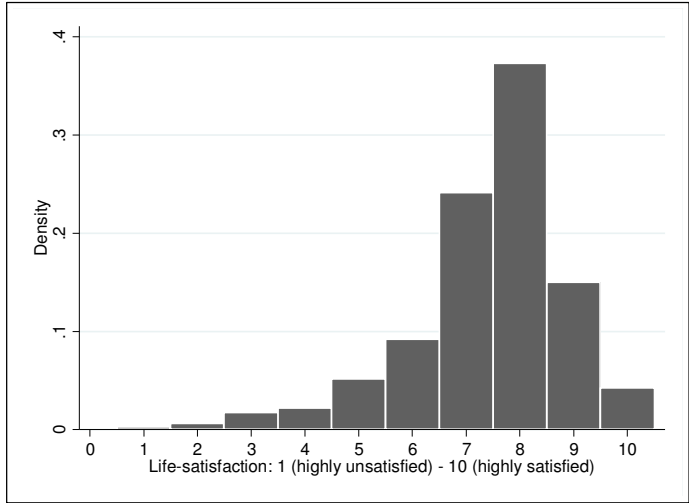
	Left-Right Ideology
<b>Populism</b>	0.50
<b>Equality</b>	-0.36
<b>Self-determination</b>	-0.28
<b>Efficiency</b>	0.15

To investigate whether the 4 dimensions also capture more variance contained in the survey statements than left-right ideology does, we have regressed all 40 statements on the 4 dimensions and calculated the average R-squared from these regressions. We did the same for the 40 statements and the left-right ideology index. The average R-squared for the regressions containing the 4 dimensions is 0.33, whereas the average R-squared for the regressions containing left-right ideology is 0.05.

#### 4. Political Ideology and Happiness

We use the new measures for political ideology to re-examine the relation between political ideology and life-satisfaction. We use all respondents from our survey to examine the relation. Earlier studies have found that right-wing/conservative people are happier in life than left-wing/liberal people (e.g. Bixter, 2015; Carroll, 2007; Napier and Jost, 2008; Taylor, Funk and Craighill, 2006). Figure 4.1 shows a histogram of the distribution of life-satisfaction data.

Figure 4.1. Histogram of Life-satisfaction





In figure 4.2 we show the distribution of the dimensions by life-satisfaction using boxplots. In each graph the boxplots are ranked by life-satisfaction scores from 1 (highly unsatisfied) to 10 (highly satisfied).

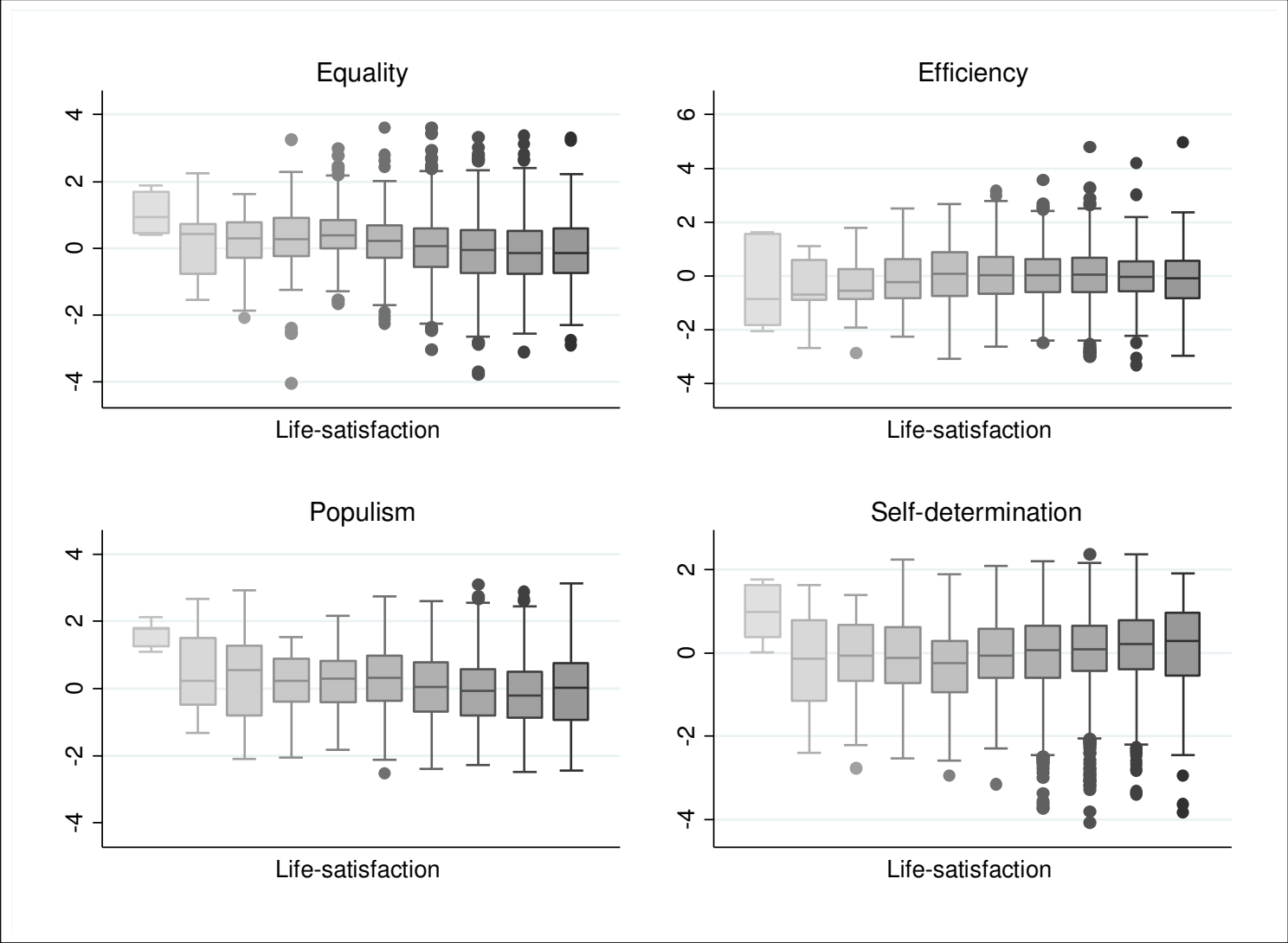
Eyeballing the relation between the dimensions and life-satisfaction, we see a negative trend in life-satisfaction the higher the score on *Equality*. This suggests that individuals with preference for redistribution and economic equality are less happy than those preferring the opposite. We observe a similar negative relation between *Populism* and life-satisfaction. Looking at the graph for *Efficiency*, there does not seem to be a clear relation between this dimension and life-satisfaction. The relation between preferences for personal freedom and life-satisfaction seems to be positive, when the first boxplot of highly unsatisfied individuals (7 respondents) is not taken into account. However, the positive trend is not very clear. Furthermore, there is a group of individuals (indicated by the dots in the lower-left of the graph) that score relatively low on *Self-determination* and high on life-satisfaction. Based on existing literature's findings that religious people report to be happier on average (e.g. Bixter, 2015; Carroll, 2007), these are most probably our Christian respondents. Surely, uncovering these trends are solely the fruits of eyeballing these graphs, thus, we continue with multivariate regression analyses to see whether the trends can be confirmed.

The model we estimate is a linear regression model in which we include several control variables that are identified in the literature as robust determinants of happiness. These control variables relate to individual and socio-economic characteristics of the respondents. We include age measured as the actual age at the time of the survey. Furthermore, we include a proxy for the level of education. We also include dummies for the respondents' gender (Female=1;Male=0); whether the respondent is employed (Yes=1;No=0), whether the respondent is religious (Yes=1;No=0), and whether the respondent is married (Yes=1;No=0). To further control for the composition of the household, we also include the number of children in the regression. Lastly, we include an index for net household income and measures of the density of the place of residence.<sup>8</sup>

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<sup>8</sup> The education variable is denoted in the amount of years needed (on average) to obtain a specific educational degree, i.e. the higher this variable, the higher level of obtained education. The religion dummy is a proxy based on whether a respondent has voted for a Christian political party during the last governmental election. The income index categories are 1) lower than 1150 euro, 2) between 1151-1800 euro, 3) between 1801-2600 and 4) more than 2600 euro.

Figure 4.2. Distribution of Dimensions of Ideology by Life-satisfaction



Note: These panels shows boxplots of the four dimensions for voters that are very unhappy (life-satisfaction = 1, most left of x-axes) to voters that are very happy (life-satisfaction = 10, most right of x-axes). The scores on the dimensions are standardized.

To evaluate whether political ideology is a determinant of life-satisfaction, we proceed as follows. First, we estimate models in which we include each of the four identified political dimensions separately. Subsequently, we estimate a model in which we include all four ideological dimensions simultaneously. We present the outcome of OLS regressions in table 4.1. However, we have additionally estimated ordered probit models and specifications with dummy control variables instead of linear controls. The former can be found in the appendix (table A4); the latter results are available on request. Furthermore, we tested the sensitivity of our results by including the 3 dimensions of the 3-factor model; these are available on request. The results are not dependent on the used specification or the factor-solution.

We find that there is a relation between political preferences and life-satisfaction, and that this relation differs over the four dimensions of political ideology. Firstly, as we inferred from the distributional plot, we find that individuals with preferences for economic equality are significantly less satisfied with their lives than those with opposing political beliefs. Having a preference for markets does not have any impact on your happiness. The estimated coefficient for *Efficiency* is not significant. Thirdly, having populist and nationalist political preferences influences people's life-satisfaction negatively and significantly. Lastly, *Self-determination* has a positive and significant coefficient. This suggests that individuals with a political preference for personal freedom and decision-making power indicate to be happier than those with the opposite preferences. Controlling for religion (Christianity), thus, confirms the positive relation we inferred from Figure 4.2. In line with existing literature (e.g. Bixter, 2015; Carroll, 2007; Napier and Jost, 2008; Taylor, Funk and Craighill, 2006), we also find that married, religious and employed people are more satisfied with life. With age, people become happier as well. Our results also suggest that money can buy you happiness. The respondents with net monthly household income higher than 1800 euro are significantly more satisfied with life.<sup>9</sup> Furthermore, we find that people living in low urbanized, rural areas are less happy. Surprisingly, people living in areas with very low or no urbanization are then again significantly happier than others. However, these latter results are not very robust over different specifications.

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<sup>9</sup> In different specifications, we control for relative income instead of absolute income using a survey question in which we asked how high respondents judged their income to be compared to others. Relative income has a significant and positive effect on happiness. The higher you believe your income to be compared to others, the more satisfied you are with life.

Table 4.1. OLS Estimation Results

Dependent variable: Life-satisfaction	(1)	(2)	(3)	(4)	(5)
<b>Equality</b>	-0.130*** (0.033)				-0.170*** (0.032)
<b>Efficiency</b>		0.035 (0.032)			0.047 (0.032)
<b>Populism</b>			-0.188*** (0.036)		-0.179*** (0.037)
<b>Self-determination</b>				0.173*** (0.036)	0.173*** (0.037)
<b>Dummy Gender</b>	0.117* (0.062)	0.105* (0.062)	0.084 (0.061)	0.079 (0.062)	0.074 (0.061)
<b>Age</b>	0.013*** (0.002)	0.012*** (0.002)	0.011*** (0.002)	0.012*** (0.002)	0.013*** (0.002)
<b>Education</b>	0.026** (0.010)	0.033*** (0.011)	0.010 (0.011)	0.027** (0.010)	-0.003 (0.011)
<b>Dummy employed</b>	0.195*** (0.072)	0.209*** (0.073)	0.213*** (0.072)	0.187*** (0.073)	0.178** (0.072)
<b>Dummy Religious</b>	0.241*** (0.077)	0.301*** (0.075)	0.257*** (0.075)	0.476*** (0.083)	0.348*** (0.085)
<b>Dummy Married</b>	0.305*** (0.084)	0.301*** (0.085)	0.327*** (0.084)	0.295*** (0.084)	0.345*** (0.083)
<b>Number of Kids</b>	-0.022 (0.033)	-0.030 (0.033)	-0.019 (0.032)	-0.012 (0.033)	0.003 (0.032)
<b>Net Household Income Category 2</b>	0.232 (0.167)	0.236 (0.166)	0.253 (0.164)	0.211 (0.163)	0.210 (0.161)
<b>Net Household Income Category 3</b>	0.499*** (0.155)	0.527*** (0.154)	0.537*** (0.152)	0.518*** (0.151)	0.478*** (0.150)
<b>Net Household Income Category 4</b>	0.658*** (0.155)	0.714*** (0.153)	0.701*** (0.151)	0.683*** (0.149)	0.567*** (0.149)
<b>Density Place of Residence = High</b>	-0.040 (0.095)	-0.046 (0.095)	-0.022 (0.095)	-0.020 (0.095)	0.032 (0.094)
<b>Density Place of Residence = Moderate</b>	-0.160 (0.101)	-0.162 (0.102)	-0.130 (0.102)	-0.134 (0.101)	-0.098 (0.100)
<b>Density Place of Residence = Low</b>	-0.276*** (0.104)	-0.258** (0.105)	-0.231** (0.104)	-0.215** (0.106)	-0.199* (0.103)
<b>Density Place of Residence = Very Low</b>	0.152 (0.101)	0.166 (0.101)	0.190* (0.100)	0.206** (0.101)	0.213** (0.099)
<b>Constant</b>	5.603*** (0.265)	5.515*** (0.266)	5.793*** (0.268)	5.536*** (0.265)	5.889*** (0.267)
<b>Observations</b>	2,416	2,416	2,416	2,416	2,416
<b>Adj. R-squared</b>	0.076	0.070	0.082	0.080	0.101
<b>F-statistic</b>	11.923	11.194	12.698	12.985	13.710
<b>Prob &gt; F</b>	0.000	0.000	0.000	0.000	0.000

Note: OLS regression results are displayed with robust standard errors. Significance is indicated as follows: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . See footnote 8 for a description of the education variable, the religious dummy and the income categories. In columns 1-4 each dimension is added separately; in column 5 all dimensions are included in the regression.

To reconcile our results with the findings of previous studies focusing on the relation between political ideology and happiness, we report in table 4.2 regressions including the traditional left-right scale as an explanatory variable. Existing literature has found robust evidence that right-wing (conservative) voters are happier than left-wing (liberalist) voters. If we examine the impact of the left-right index on happiness (column 1), we cannot confirm the finding of earlier studies. However, as argued above (see section 3), contemporary ideology is not well measured on a one-dimensional scale. In fact, the research by De Vries et al. (2013) suggests that right-wing ideology is nowadays is dominated by anti-immigrant (populist) sentiment. If this hypothesis is true, then we expect that, if we control for the populist dimension (as identified) in our regression, we would be able to uncover the original relation between ‘right-wing ideology’ and happiness. In column 2, we examine this hypothesis, and indeed find that controlling for populism leads to a positive and significantly estimated coefficient for left-right ideology. Yet, a religion dummy in our baseline model captures part of conservative ideology. To ensure consistency, this dummy has also been added in columns 1 and 2 of table 4.2. It is to be expected that the omission of the religion dummy would further increase the impact of right-wing ideology on happiness. As column 3 shows, the exclusion of the religion dummy increases the size of the estimated effect, even though the additional impact is small.

Table 4.2 Life satisfaction and the left-right scale

<b>Dependent variable: Life-satisfaction</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
<b>Left-Right scale</b>	-0.011 (0.017)	0.050*** (0.019)	0.063*** (0.018)
<b>Populism</b>		-0.239*** (0.041)	-0.260*** (0.040)
<b>Dummy Religious</b>	0.321*** (0.078)	0.200** (0.079)	
<b>Observations</b>	2,384	2,384	2,384
<b>Controls?</b>	YES	YES	YES
<b>Adj. R-squared</b>	0.070	0.085	0.083
<b>F-statistic</b>	10.958	12.108	12.446
<b>Prob &gt; F</b>	0.000	0.000	0.000

Note: OLS regression results are displayed with robust standard errors. Significance is indicated as follows: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The same controls are included as in table 4.1. See footnote 8 for a description of the education variable, the religious dummy and the income categories.

Our identified dimensions allow us to further assess why right-wing voters are found to be happier than left-wing voters. To this end, we continue with the specification in column 2 of table 4.2 and add the other dimensions of political ideology to the regression model. The estimation results are reported in table 4.3. In column 1, we add the efficiency dimension; in column 2, the self-

determination dimension; in column 3, the equality dimension; and in column 4, we add all four dimensions alongside the left-right scale. It can be seen that the estimation results with regards to the dimensions are not affected by the presence of the left-right scale in the specification. Likewise, we find that the efficiency and the self-determination dimensions do not affect the size and significance of the estimated coefficient of the left-right scale. However, when we add the equality dimension to the model, the estimated coefficient of the left-right turns insignificant. This finding suggests that the happiness of right-wing voters is likely to be driven by their (lack of) preference towards economic equality.

Table 4.3. What drives the Impact of Left-right Ideology on Happiness?

<b>Dependent variable: Life-satisfaction</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
<b>Left-Right scale</b>	0.048** (0.019)	0.064*** (0.019)	0.021 (0.021)	0.029 (0.021)
<b>Populism</b>	-0.240*** (0.041)	-0.225*** (0.041)	-0.221*** (0.041)	-0.203*** (0.042)
<b>Efficiency</b>	0.033 (0.032)			0.032 (0.032)
<b>Self-determination</b>		0.159*** (0.038)		0.178*** (0.038)
<b>Equality</b>			-0.137*** (0.036)	-0.155*** (0.036)
<b>Observations</b>	2,384	2,384	2,384	2,384
<b>Controls?</b>	YES	YES	YES	YES
<b>Adj. R-squared</b>	0.085	0.093	0.091	0.101
<b>F-statistic</b>	11.447	12.992	12.212	12.925
<b>Prob &gt; F</b>	0.000	0.000	0.000	0.000

Note: OLS regression results are displayed with robust standard errors. Significance is indicated as follows: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . The same controls are included as in table 4.1. See footnote 8 for a description of the education variable, the religious dummy and the income categories.

## 5. Conclusion

In this paper we have investigated the dimensionality of political ideology and its impact on political ideology. Based on exploratory factor analyses as well as confirmatory factor analyses, we identify four dimensions of political ideology. These dimensions capture 1) preferences for economic equality, 2) preferences for markets/efficiency, 3) preferences for personal and cultural freedom and 4) nationalist and populist preferences. We have shown that the newly obtained measures differ from the traditional left-right measure. Based on simple correlations, we find that the four dimensions are not mutually exclusive and only modestly correlate with a traditional left-right measure (max.  $r=0.5$ ). In the second part of the paper, we have re-examined the relation between

political ideology and happiness. This literature, by and large, finds that conservative right-wing individuals are happier than their liberal left-wing counterparts. Our approach has allowed us to offer a more refined view on the matter. In particular, we show that preferences for populism and economic equality are associated with lower levels of life satisfaction, whereas preferences for more personal and cultural freedom are associated with higher levels of life-satisfaction. In further analyses, we show that the classic result that right-wing voters are happier than left-wing voters is largely driven by the preference for economic equality.

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## Appendices

Table A1 - List of Statements in the Order they appeared in Survey (translated from Dutch)

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1	Euthanasia should be allowed to all.
2	The government should cut spending on defence.
3	During recessions the government should not cut spending, but stimulate the economy by investing more.
4	Access to museums should be free for all Dutch.
5	Landlords should be able to determine the height of the rent freely.
6	National sovereignty is more important than international relations.
7	The minimum wage should be abandoned.
8	Civil servants may refuse to marry same-sex partners.
9	In order to protect the rights of workers, trade unions should be given more power.
10	The Netherlands should leave the European Union.
11	All utilities, such as gas, water and electricity, should be nationalized.
12	Freedom of expression is more important than protection against discrimination.
13	The government should protect the domestic economy, for example by taxing imports.
14	The government should cut spending on development aid.
15	Nuclear energy is the best alternative when fossil fuels are depleted.
16	Insurance companies should have access to individual medical records, so they can better determine the height of insurance premiums.
17	Immigrants are entitled to social security.
18	Reducing the government deficit should be given a higher priority than investments in the social security system.
19	The constitutional monarchy should be replaced by a ceremonial monarchy.
20	A person that refuses to work should not receive any benefits.
21	To protect the Dutch state, it is allowed to restrict certain freedom, such as the right to privacy or freedom of religion.
22	The government should invest in education, even during recessions.

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23	Governors, such as the Prime Minister and mayors, should be chosen in direct elections.
24	It is a good thing that municipalities have more responsibilities, for example for youth care.
25	To encourage entrepreneurship, income taxes should be reduced.
26	Intellectual property rights, such as copyright, should be protected.
27	To better protect the rights of consumers, the government must regulate markets more.
28	Borders should be closed for asylum-seekers.
29	When a mother has a paid job, it will be at the expense of her children.
30	Income inequality is more important than economic growth.
31	Outcomes of referenda should be binding for the government.
32	Dismissal law should become more flexible.
33	Everyone residing in the Netherlands should be treated equally, irrespective of religion, race or gender.
34	The death penalty should be reintroduced in the Netherlands.
35	Soft-drugs should be legalized.
36	Sustainable development is more important than economic growth.
37	It should be possible for same-sex couples to adopt children.
38	Healthcare benefits should be income-dependent.
39	A European constitution should be created, which will replace the Dutch constitution.
40	The government should cut spending on unemployment benefits.

Table A2 - Descriptive Statistics of Statements (complete sample)

Statement	Mean	SD	Min	Max	Statement	Mean	SD	Min	Max
<b>1</b>	3.66	1.12	1	5	<b>21</b>	2.64	1.08	1	5
<b>2</b>	2.59	0.95	1	5	<b>22</b>	4.15	0.64	1	5
<b>3</b>	3.43	0.82	1	5	<b>23</b>	3.34	1.02	1	5
<b>4</b>	3.01	1.07	1	5	<b>24</b>	2.83	0.99	1	5
<b>5</b>	2.30	0.93	1	5	<b>25</b>	3.40	0.80	1	5
<b>6</b>	2.82	0.95	1	5	<b>26</b>	3.74	0.66	1	5
<b>7</b>	2.21	0.92	1	5	<b>27</b>	3.17	0.78	1	5
<b>8</b>	2.07	1.17	1	5	<b>28</b>	2.78	1.21	1	5
<b>9</b>	3.07	0.92	1	5	<b>29</b>	2.27	1.03	1	5
<b>10</b>	2.38	1.18	1	5	<b>30</b>	2.61	0.91	1	5
<b>11</b>	3.30	1.04	1	5	<b>31</b>	3.20	1.02	1	5
<b>12</b>	3.18	0.97	1	5	<b>32</b>	2.68	0.95	1	5
<b>13</b>	2.97	0.84	1	5	<b>33</b>	4.03	0.93	1	5
<b>14</b>	3.08	1.12	1	5	<b>34</b>	2.01	1.17	1	5
<b>15</b>	2.58	1.05	1	5	<b>35</b>	3.15	1.17	1	5
<b>16</b>	1.69	0.81	1	5	<b>36</b>	3.50	0.84	1	5
<b>17</b>	2.56	1.03	1	5	<b>37</b>	3.82	1.04	1	5
<b>18</b>	2.60	0.87	1	5	<b>38</b>	3.86	0.89	1	5
<b>19</b>	2.78	1.08	1	5	<b>39</b>	2.04	0.92	1	5
<b>20</b>	3.85	0.94	1	5	<b>40</b>	2.58	0.93	1	5

Note: The mean, standard deviation and the range of answers is given for each statement. (Dis)agreement with the statements is given on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

Table A3. Correlation between Dimensions of Ideology and Self-reported Left-Right Ideology - 3 Factor Solution

	Left-Right Ideology
<b>Populism</b>	0.49

Equality	-0.39
Self-determination	-0.29

Table A4. Ordered Probit Estimation Results

Dependent variable: Life-satisfaction	(1)	(2)	(3)	(4)	(5)
Equality	-0.092*** (0.024)				-0.124*** (0.024)
Efficiency		0.008 (0.023)			0.017 (0.023)
Populism			-0.127*** (0.025)		-0.118*** (0.026)
Self-determination				0.131*** (0.026)	0.134*** (0.027)
Dummy Gender	0.087** (0.044)	0.078* (0.044)	0.064 (0.044)	0.059 (0.044)	0.057 (0.044)
Age	0.009*** (0.002)	0.009*** (0.002)	0.008*** (0.002)	0.009*** (0.002)	0.010*** (0.002)
Education	0.017** (0.008)	0.022*** (0.008)	0.007 (0.008)	0.018** (0.008)	-0.002 (0.008)
Dummy employed: 1=EMPLOYED	0.131** (0.052)	0.139*** (0.052)	0.143*** (0.052)	0.124** (0.052)	0.118** (0.052)
Dummy Religious	0.178*** (0.058)	0.221*** (0.057)	0.191*** (0.057)	0.353*** (0.061)	0.268*** (0.063)
Dummy Married	0.229*** (0.058)	0.223*** (0.059)	0.246*** (0.059)	0.223*** (0.059)	0.258*** (0.059)
Number of Kids	-0.024 (0.024)	-0.029 (0.024)	-0.023 (0.023)	-0.016 (0.024)	-0.005 (0.024)
Net Household Income Category 2	0.128 (0.109)	0.132 (0.109)	0.143 (0.108)	0.112 (0.107)	0.114 (0.108)
Net Household Income Category 3	0.292*** (0.104)	0.312*** (0.103)	0.320*** (0.103)	0.305*** (0.102)	0.282*** (0.102)
Net Household Income Category 4	0.423*** (0.105)	0.464*** (0.104)	0.455*** (0.103)	0.439*** (0.102)	0.366*** (0.103)
Density Place of Residence = High	-0.033 (0.069)	-0.040 (0.069)	-0.022 (0.069)	-0.017 (0.069)	0.016 (0.070)
Density Place of Residence = Moderate	-0.110 (0.073)	-0.111 (0.073)	-0.090 (0.074)	-0.091 (0.073)	-0.068 (0.074)
Density Place of Residence = Low	-0.204*** (0.073)	-0.193*** (0.074)	-0.174** (0.073)	-0.160** (0.074)	-0.153** (0.074)
Density Place of Residence = Very Low	0.105 (0.076)	0.114 (0.076)	0.131* (0.076)	0.145* (0.076)	0.150** (0.076)
Threshold (category 1)	-1.639*** (0.213)	-1.572*** (0.214)	-1.783*** (0.215)	-1.577*** (0.216)	-1.860*** (0.215)
Threshold (category 2)	-1.217*** (0.189)	-1.155*** (0.189)	-1.352*** (0.192)	-1.169*** (0.190)	-1.434*** (0.192)
Threshold (category 3)	-0.765*** (0.185)	-0.703*** (0.184)	-0.893*** (0.187)	-0.720*** (0.185)	-0.974*** (0.189)
Threshold (category 4)	-0.475*** (0.185)	-0.414** (0.185)	-0.601*** (0.185)	-0.430** (0.185)	-0.681*** (0.185)

	(0.183)	(0.183)	(0.186)	(0.183)	(0.188)
<b>Threshold (category 5)</b>	-0.085	-0.025	-0.209	-0.039	-0.284
	(0.182)	(0.182)	(0.185)	(0.182)	(0.186)
<b>Threshold (category 6)</b>	0.350*	0.408**	0.228	0.398**	0.161
	(0.183)	(0.183)	(0.185)	(0.183)	(0.187)
<b>Threshold (category 7)</b>	1.091***	1.144***	0.971***	1.141***	0.915***
	(0.185)	(0.185)	(0.187)	(0.185)	(0.189)
<b>Threshold (category 8)</b>	2.167***	2.218***	2.049***	2.222***	2.005***
	(0.189)	(0.189)	(0.191)	(0.189)	(0.193)
<b>Threshold (category 9)</b>	3.038***	3.087***	2.922***	3.096***	2.883***
	(0.195)	(0.194)	(0.196)	(0.195)	(0.199)
<b>Observations</b>	2,416	2,416	2,416	2,416	2,416
<b>Pseudo R-squared</b>	0.024	0.022	0.026	0.026	0.032
<b>Chi-squared</b>	175.4	164.2	186.1	189.1	237.8
<b>Prob &gt; Chi2</b>	0.000	0.000	0.000	0.000	0.000

Note: Ordered probit results are displayed with robust standard errors. Significance is indicated as follows: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . See footnote 8 for a description of the education variable, the religious dummy and the income categories. In columns 1-4 each dimension is added separately; in column 5 all dimensions are included in the regression.



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