

# Is Inequality a Latent Construct? An Assessment of Economic Inequality Indicators and Their Relation with Social Cohesion in Europe

Silke Goubin<sup>1</sup> 

Accepted: 4 December 2016 / Published online: 12 December 2016  
© Springer Science+Business Media Dordrecht 2016

**Abstract** In this article, we analyse the relation between different economic inequality indicators and social cohesion. Previous research usually narrows down economic inequality to income inequality, or distinguishes several types of economic inequality. Little attention has until now been given to how different aspects of economic inequality might be related to each other and can have an effect on social cohesion. This article analyses several indicators of economic inequality and makes a distinction between indicators measuring income inequality, poverty, economic strain and unequal distributions of wealth. Arguing that these indicators represent different aspects of inequality, we hypothesise that they cannot be reduced to one latent concept of inequality and have specific relations with social cohesion. In order to test this hypothesis, we conducted an exploratory factor analysis. This resulted in two different factors: one associated with economic hardship, and one associated with imbalances in market outcomes. This would imply that inequality indicators can be classified into two underlying concepts. Secondly, we related the factor scores of the two latent concepts to the social cohesion indicators via regression analyses. This paper focuses on European countries and uses pooled data from the European Social Survey (period 2006–2012), in combination with macro-level data drawn from the OECD, Eurostat and the World Bank. The results demonstrate that the strength of the link between inequality and citizens' attitudes depends on the type of inequality indicator we analyse: only the factor economic deprivation can be significantly linked to social cohesion.

**Keywords** Economic inequality · Social cohesion · Factor analysis

## 1 Introduction

Recently, some authors have argued rather forcefully that economic inequality, as measured by inequality of income or wealth, is rising (Inglehart 2016; Piketty 2015). Given the increased attention for the causes and consequences of inequality, a substantial body of

---

✉ Silke Goubin  
silke.goubin@kuleuven.be

<sup>1</sup> Centre for Citizenship and Democracy, KU Leuven, Parkstraat 45, 3000 Louvain, Belgium

research has investigated the relation between economic inequality on the one hand and social cohesion indicators on the other. Economic inequality has been related to lower levels of political and social trust (Olivera 2015; Zmerli and Castillo 2015), higher levels of corruption (Rothstein and Uslaner 2005), an imbalanced representation of interests (Schlozman et al. 2012) and lower levels of political participation (Lancee and Van de Werfhorst 2012).

Articles that assess the relation between economic inequality and social cohesion indicators use diverging operationalisations of the concept of inequality. Often, just one indicator of inequality (usually the Gini coefficient) is analysed (e.g. Alesina and La Ferrara 2002; Fairbrother and Martin 2013; Lancee and Van de Werfhorst 2012). Yet, economic research suggests a myriad of potential indices (Atkinson 2015; Cowell 2011; Milanovic 2016). These not only measure different dimensions of inequality (e.g. income inequality or wealth inequality), but also show different distributions of inequality within a society, depending on the definition and operationalisation of the indicator. Indicators of pre-tax income inequality for instance, measure a different spread of economic resources within a country, than post-tax income inequality indicators, which can lead to separate relations with regards to social cohesion (Stiglitz 2012). Several researchers already take into account that inequality is a multidimensional concept, by analysing a set of inequality indicators (e.g. Bergh and Bjørnskov 2014; Olivera 2015; Schmidt-Catran 2016; Wroe 2016). These indicators are associated with different dimensions of economic inequality, and therefore separate relations with political and social processes.

However, to what extent is economic inequality a multidimensional concept, and are the frequently applied inequality indicators in social sciences research actually covering different dimensions of it? The goal of this paper is to investigate whether these indicators are indeed measuring unique dimensions of economic inequality, or whether they all are pointing at a similar distribution of inequality. The major research question of this paper is in this regard a methodological one: can different aspects of economic inequality be reduced to a single latent construct? In addition, are these (different types of) economic inequality related to social cohesion in a similar way? We expect that economic inequality is a multidimensional concept, because it is the result of different socioeconomic forces. Therefore, different aspects of it will be coupled to social cohesion in distinct ways. In order to answer the research questions, we conducted an exploratory factor analyses, based on within-country inequality indicators, and couple economic inequality to social cohesion via regression analyses.

The article focuses on European countries, and conducts its analyses on the basis of European Social Survey (ESS) data (period 2006–2012<sup>1</sup>). The ESS database was extended with macro-level economic data from Eurostat, the Organisation of Economic Cooperation and Development (OECD) and World Bank sources on income inequality, poverty, economic strain and unequal distributions of wealth. We assume that these indicators indeed represent different aspects of economic inequality, that should not be considered as just one latent concept, as these rely on different definitions and patterns of distribution. Yet, the possibility of one latent concept of economic inequality cannot be lightly discarded. We measure social cohesion via a composite indicator, based on the research of Vergolini (2011a).

In this article we find two dimensions of economic inequality: one factor that is associated with economic deprivation, and one associated with imbalances in market outcomes. As such, the article shows that it is not sufficient to measure countrywide economic

<sup>1</sup> In this period, four ESS rounds were organised: in 2006, 2008, 2010 and 2012.

inequality via just one proxy indicator. We distinguish two distinct concepts, each connected to social cohesion in separate ways. The first factor is in this regard more linked to a population's actual economic deprivation, whereas the second is more linked to market processes leading towards inequality.

## 2 Undermining Social Cohesion: Economic Inequality

Both economic performance, and the unequal redistribution of economic opportunities and outcomes have been connected to social cohesion. These connections have been studied on a micro-level, i.e. between individuals or households, and on a macro-level, i.e. between countries or societies. In general, a negative relation has been found between economic inequality and social cohesion. In contrast, a positive correlation exists between objective economic performance and cohesion. Before elaborating the links between economic inequality and social cohesion further, defining the concept of economic inequality and social cohesion is in order.

The focus of this article lies on macro-level economic inequality indicators. We compare national measurements of within-country inequality only. The definition of economic within-country inequality—"or the unequal distribution of economic resources within a society, and the unequal distribution of opportunities to acquire such resources"—was mainly based on the work of Atkinson (2015), in extension with definitions of Barnes et al. (2002), Cowell (2011), Milanovic (2016), Piketty (2015), Stiglitz (2012) and the OECD (2015). As follows, the conceptualisation of equality refers to the equal distribution of economic resources within a given country. Yet, there are several ways in which these "economic resources" can be defined (Atkinson 2015; Cowell 2011). We can distinguish several dimensions of economic inequality. In this article, we focus on inequality of income, wealth and economic strain (Atkinson 2015). These dimensions are both caused by and drivers of specific socioeconomic forces (Barnes et al. 2002; OECD 2015; Piketty 2015, Stiglitz 2012). In addition, each dimension is connected to multiple indicators.

The most prevalent dimension of economic inequality, and one which is often used synonymously with inequality in general, is inequality of income (Cowell 2011; Milanovic 2016; Piketty 2015). Indicators of income inequality are popular because they not only look at the bottom of the society (the poor) or inequality of consumption patterns, but give a broader insight in the distribution of income as one of the most influential economic resources, and the power that stems from it (Atkinson 2015). High income inequality would in this regard lead to very imbalanced relations in terms of economic power, and therefore lower social cohesion. Nevertheless, indicators of income inequality often show different spreads of income, depending on their definition and operationalisation (Cowell 2011). Income inequality can be defined as the inequality of income as generated by the markets, yet, depending on the operationalisation of the concept, this does not necessarily take taxes, social transfers and benefits into account (Atkinson 2015; Stiglitz 2012). Market inequality might for instance undermine social cohesion, but, if government redistributes income, the relation between market inequality and social cohesion could be attenuated (Stiglitz 2012). In addition, some indicators are based on comparisons of the difference between the lowest and highest incomes within a society, such as the S90/S10 quintile share ratio, or calculate the average deviation from the mean income. These indicators reveal other aspects of the distribution of income within a given society. However, do these different aspects have the same implications for social cohesion? We might for instance

expect that estimations based on the incomes of every household will predict social cohesion better than estimates of differences in extremes of incomes (S90/10 quintile share ratio).

The unequal spread of economic resources is also measured by the concentration of wealth within a society. Inequality of household wealth points at the capital that is gathered over time (bonds, stocks, property etc.) by individuals or households. Indicators of wealth inequality usually show a more skewed distribution of resources because of the very high concentration of wealth by the richest echelons. Wealth inequality indicators therefore not only show a different distribution of inequality, but also point at longer-lasting processes: measurements of income inequality usually refer to shorter time periods (work and capital income generated in 1 year or month), wealth is built up across years. Indicators measuring imbalances of accumulation of wealth within a society or earnings of income mark in other words compatible, but different economic patterns. Countries that have relatively low levels of income inequality are in this sense not necessarily characterised by equally low wealth inequality levels (OECD 2015; Piketty 2015). Given the longer-lasting character of wealth inequality and the higher concentration of wealth at the top, we could expect that inequality of wealth is more strongly connected to structural imbalances within a society. Moreover, income can more easily be redistributed than capital. Therefore we expect that wealth inequality undermines social cohesion more strongly.

Whereas inequality of income or wealth indicators measure the spread of income in a society as a whole, there are other ways of analysing the unbalanced spread of economic resources. Drawing on the distribution of income, poverty indices measure the percentage of households that falls below a given poverty line, or do not enjoy a given set of economic resources. More in general, indicators of economic strain or insecurity point at the extent of economic disadvantage and exclusion within a society (Atkinson 2015; Barnes et al. 2002). This differs from the other dimensions of inequality that we discuss in this article: an unbalanced spread of income or wealth within a society does not necessarily imply that citizens at the bottom are faced with economic strain and exclusion. For instance, if two countries have an equally high income inequality rate, and one has a high rate of “Risk at Poverty and Social Exclusion”, we could expect that the latter would have lower levels of social cohesion than the first. By looking at measurements of economic strain and poverty, we might with other words uncover patterns of inequality and subsequent relations with social cohesion, that would otherwise have been cloaked by simply measuring the overall spread of resources. Summing up, we assume that each of the dimensions of economic inequality will undermine social cohesion, yet we don’t expect them to influence every aspect of social cohesion to the same extent.

Social cohesion refers to the linking mechanisms between citizens in a society, and to the values and structures that bind citizens in reciprocal relations (Botterman et al. 2011). In a cohesive society, people trust each other, and the political institutions that govern them. As such, social cohesion includes feelings of solidarity, a general sense of belonging to a community and sharing equal social and political rights (Jenson 2010). It depends on reciprocal relations between citizens, the quality of services and the equal representation of interests of all segments of society in political decision-making processes within a society (Helliwell 2001; Schlozman et al. 2012).

Departing from the work of Durkheim (1893), who distinguished a traditional form of solidarity and a modern linkage mechanism between citizens, a vivid academic debate has risen on the concept and measurement of social cohesion. The only consensus in the literature exists in this regard, that there is no generally agreed definition of the concept social cohesion, or how it can be measured (Dickes et al. 2010; Jenson 2010). Hence,

authors treat social cohesion as a multidimensional concept and couple it to several indicators. Usually, researchers make a difference between cohesive attitudes on the one hand, and behaviour on the other hand. Some measure social cohesion at the society level, others at the individual levels (Berger-Schmitt 2002; Dickes et al. 2010; Vergolini 2011a). An unequal distribution of welfare and economic opportunities among members of a society, is seen as detrimental to the social cohesion of a society (Berger-Schmitt 2002; Jenson 2010). Some researchers treat economic inequality as an inherent part of social cohesion, yet, this confuses factors that might influence social cohesion with its constitutive elements (Chan et al. 2006; Vergolini 2011a).

Previous research has distinguished sociocultural and political aspects of social cohesion, and subsequent attitudinal and behavioural elements (Chan et al. 2006; Dickes et al. 2010; Vergolini 2011a). When looking at attitudes, researchers have focused on trust in political institutions, generalised trust, perceptions of quality of political institutions and policies, sense of national identity and openness towards people with different backgrounds as some of the major constitutive elements of social cohesion. In terms of behaviour, researchers have focused on political and social participation in a broad sense, and interaction with friends, family and other members of society as constitutive factors (Berger-Schmitt 2002; Dickes et al. 2010; Vergolini 2011a).

When linking economic inequality to political and generalised trust, social sciences research usually focuses on inequality of income.<sup>2</sup> Several authors found in this regard that higher levels of income inequality are related to lower levels of social and political trust (Gustavsson and Jordahl 2008; Alesina and La Ferrara 2002; Zmerli and Castillo 2015). Authors designate several reasons why this might be the case. Income inequality is associated with less qualitative performance of government services and negative perceptions of economic policies in particular, tendencies towards corruption and disproportionate political power for the rich (Uslaner 2011). Therefore, political trust is lower. Higher levels of social and income inequality are moreover positively correlated with growing competition between people and the idea that people try to take advantage of one another. Citizens feel more insecure, and give prevalence to their immediate individual concerns, which makes them more isolated and demobilised (Loveless 2013). Hence, social trust declines when inequality rises.

However, not all authors agree that objective levels income inequality can statistically be linked to social or political trust (Boda and Medve-Bálint 2014; Fairbrother and Martin 2013; Olivera 2015). Bergh and Bjørnskov (2014: 194) make a difference between pre-tax and post-tax income inequality<sup>3</sup> and “find evidence that market inequality affects social trust while we see no support for the claim that net inequality has any causal effect on trust”. Several authors note in this regard that perceptions of inequality, rather than actual inequality levels, explain lower levels of trust (e.g. Boda and Medve-Bálint 2014; Gustavsson and Jordahl 2008; Loveless 2013).

Income inequality has furthermore been connected to lower levels of political and civic participation (Lancee and Van de Werfhorst 2012; Solt 2015). When income inequality is higher, citizens' individual income position becomes more important in determining the extent to which they participate in social and political life and are able to build up a network of social contacts. In addition, groups with diverging socioeconomic status interact less with each other (Lancee and Van de Werfhorst 2012). Causal factors in this

<sup>2</sup> Most of the studies discussed in this section use the Gini coefficient of disposable income to measure income inequality.

<sup>3</sup> In contrast to the Gini of disposable income (which is the spread of income after taxes and transfers).

sense are a lack of resources to participate, or psychological processes such as the sense of not being heard or feelings of inferiority by people with a lower socioeconomic status (Lancee and van de Werfhorst 2012; Solt 2015). Income inequality has also been coupled to less solidarity with others (Paskov and Dewilde 2012).

Other research goes beyond the influence of income when assessing the link between economic inequality and social cohesion. Poverty for instance is negatively related to social trust (Rothstein and Uslaner 2005). At the micro-level Schoon and Cheng (2011) demonstrate how continued experiences of economic disadvantage across lifetime can increase cynicism and lower levels of political trust. Cammett et al. (2015) were able to show how an individual's exposure to market risks decreases trust in institutions. Vergolini (2011b) found that economic deprivation leads to more tensions within society, individual isolation, and lowers perceptions of the quality of public services.

What is particularly striking with regards to the operationalisation of these researches is that most articles only analyse inequality of income and its effect on or specific relation with a social cohesion indicator, whilst generalising this to the relation with or effect of inequality in general. Rothstein and Uslaner (2005) for instance make a difference between economic inequality, i.e. the actual market outcomes, and inequality of opportunity, i.e. the opportunities to enhance an individual's status, yet they only operationalise economic inequality of outcomes<sup>4</sup> in their analyses on social trust. There are articles that look at a set of economic inequality indicators. Nevertheless, most articles do not or only briefly dwell on whether economic inequality should be measured in a multi-dimensional way in relation with social cohesion, and if so, which diverging aspects and respective indicators matter.

We hypothesise that there are several aspects of economic inequality, that cannot be reduced to a single factor (Hypothesis 1). More concretely, we expect that market imbalances in terms of income, economic strain and wealth, measure different dimensions of inequality, because they point at different distributions of economic inequality. These indicators cannot, when combining them in a factor analysis, be reduced to one factor. Secondly, we expect that—in line with the literature—the economic inequality indicators will be negatively related to social cohesion (Hypothesis 2).

### 3 Data and Methods

The analyses of this paper will be conducted in two phases. First, in order to assess whether a latent concept of economic inequality exists, we conduct an exploratory factor analysis. Second, in order to relate (the different types of) economic inequality with social cohesion indicators, we set up Ordinary Least Squares (OLS) regression models. For both phases, we rely on a pooled dataset of the European Social Survey, ranging from 2006 to 2012. We extended this dataset, by adding macro-level economic inequality data for each country and each year from Eurostat, OECD and World Bank sources. We analyse this specific period, because we have the most extensive country level information for it. Note in this regard that we do not have macro-level data for each country or each year. Eurostat for instance does not provide data for Israel, Russia, Switzerland or Ukraine. We therefore excluded these countries from further analyses. An overview of the set of countries that we included in the final analyses can be found in Table 1. The final dataset comprised 27 countries, and 130,113 respondents.

---

<sup>4</sup> Via the Gini coefficient.

**Table 1** Overview of European Social Survey participant countries *Source:* European Social Survey

	2006	2008	2010	2012	Total
Austria	x				1
Belgium	x	x	x	x	4
Bulgaria	x	x	x	x	4
Croatia			x		1
Cyprus	x	x	x	x	4
Czech Republic		x	x	x	3
Denmark	x	x	x	x	4
Estonia	x	x	x	x	4
Finland	x	x	x	x	4
France	x	x	x	x	4
Germany	x	x	x	x	4
Greece		x	x		2
Hungary	x	x	x	x	4
Iceland				x	1
Ireland	x	x	x	x	4
Italy				x	1
Lithuania			x	x	2
Netherlands	x	x	x	x	4
Norway	x	x	x	x	4
Poland	x	x	x	x	4
Portugal	x	x	x	x	4
Slovak Republic	x	x	x	x	4
Slovenia	x	x	x	x	4
Spain	x	x	x	x	4
Sweden	x	x	x	x	4
Turkey		x			1
United Kingdom	x	x	x	x	4
N	20	23	23	23	88

Pooled dataset 2006–2012

### 3.1 Economic Inequality

The operationalisation of the different dimensions of economic inequality (income inequality, wealth inequality, poverty and economic strain) was mainly based on the EU Statistics on Income and Living Condition initiative and the indicators applied by the OECD report “In it together: why less inequality benefits all” (OECD 2015). The selected indicators are, of course, not the only indicators available for measuring the conceptualised dimensions of economic inequality. The databases of the EU and the OECD were preferred because they provided a wide coverage of data on European Social Survey participant countries.

This article analyses three income inequality indicators: the Gini coefficient of disposable income, the Gini coefficient of market income and the S80/S20 income quintile share ratio. The Gini coefficient of disposable income and of market income are closely related with each other. The latter indicates the market distribution of income, before social transfers and taxes, the former measures the spread of income after social transfers and taxes. Both coefficients measure perfect equality as 0 (every household has an equal income), and perfect inequality as 100 (one household holds the entire national income).

The S80/S20 income quintile share ratio<sup>5</sup> measures the distribution of income via the share of national income that is held by the richest 20% of the population, to the share of national income that is in the possession of the poorest 20%.

This paper selected seven indicators to measure poverty and economic strain. We look at the broad ratio “People at risk of poverty or social exclusion”, and its three subcomponents “At-risk-of-poverty rate”, “People living in households with very low work intensity” and “Severe material deprivation rate”.<sup>6</sup> In addition, we also include the indicator “Inability to make ends meet”. An unequal distribution of debts among households within a society can also be a measurement of economic strain. However, interpreting debt indicators is not always very straightforward. Higher household debts might for instance be a sign that households are capable to carry higher loans, or that more families invest in private property (and become therefore indebted). Therefore we limit our analysis to one debt indicator: “Arrears”. This is the percentage of the population which is unable to pay for its mortgage or rent, utility bills or hire purchase. Lastly we also look at the unequal distribution of jobs in a society, i.e. the percentage of the population that is unemployed, but available and actively looking for a job.<sup>7</sup>

Only very limited data on household wealth concentration exists.<sup>8</sup> The OECD provides some information on inequalities in terms of share of wealth within a population, e.g. via its indicator “Share of national wealth by wealthiest 10%”. This was unfortunately only available for 2010, and in the case of the United Kingdom only for 2012 (OECD 2015) (Table 2).

### 3.2 Social Cohesion

Social cohesion is a multi-dimensional concept, and is usually measured via a battery of items. We draw on the research of Vergolini (2011a) to construct two composite indicator of social cohesion. Vergolini designed a social cohesion indicator based on European Social Survey questions that was equivalent across countries. He distinguishes two types of social cohesion, i.e. civic integration and network density. Civic integration relies on institutional trust, social trust and the perceived quality of public services. Network density loads on variables measuring willingness to participate, participation in associations and isolation.

<sup>5</sup> Next to the S80/S20 ration, the S90/S10 ratio is also prevalent in income inequality research (the S90/S10 calculates the ratio of income held by the richest 10% to the income held by the poorest 10%). The S90/S10 focuses more on the extremes of the income distribution, the S80/S20 ratio comprises a broader view of income imbalances and was therefore preferred by the authors. Other ways of measuring within-country income inequality are, amongst others, measuring the absolute range of income, assessing the relative mean deviation, the variance of income etc. (Cowell 2011).

<sup>6</sup> These indicators indeed correlate with each other and their composite ratio (Pearson’s correlation coefficients range from 0.143 to 0.728), but the correlation only becomes problematic in the case of the correlation between material deprivation and the at-risk-of-poverty and social exclusion ratio ( $\rho$  0.951).

<sup>7</sup> There is a debate on whether unemployment rates are a causal factor of economic inequality or an inherent part of it (Atkinson 2015; Stiglitz 2012). Conceptualising it as a measurement of economic strain and an unequal distribution of employment opportunities (and hence, the economic resources that emanate from it), we would like to test whether it is indeed part of (one of the) dimensions of economic inequality.

<sup>8</sup> Currently several scientific initiatives are working on providing more specific information on the concentration of wealth, such as the World Wealth and Income Database (Alvaredo et al. 2016). Piketty (2015) does provide information on some European countries (such as France, Sweden and the United Kingdom), yet this dataset provides too limited information on the different European Social Survey Participants to add this as a variable in the subsequent analyses.



**Table 2** Measuring inequality

Type of inequality	Indicators
Poverty and economic strain	People at risk of poverty or social exclusion (source: Eurostat) At-risk-of-poverty rate (source: Eurostat) In-work at-risk-of-poverty rate (source: Eurostat) People living in households with very low work intensity (source: Eurostat) Inability to make ends meet (source: Eurostat) Severe material deprivation rate (source: Eurostat) Arrears (i.e. mortgage or rent, utility bills or hire purchase) (source: Eurostat)
Income	S80/S20 income quintile share ratio (source: Eurostat) Gini coefficient of market income (source: Eurostat) Gini coefficient of disposable income (source: Eurostat)
Wealth	Wealth Share richest 10% (source: OECD) (only available for 2010)
Employment	Unemployment rates (source: World Bank)

An overview of indicators

In this paper, we also make a distinction between civic integration on the one hand and network density on the other. In line with Vergolini, we built up the two factors, based on a second-order confirmatory factor analysis, using weighted least squares estimation to analyse the model. A full list of first- and second order variables can be found in Table 3. It contains all questions of Vergolini's study that were available in the pooled dataset of the European Social Survey.

**Table 3** Descriptive information on social cohesion indicators based on Vergolini (2011a) *Source:* European Social Survey, pooled dataset 2006–2012

Variables	Minimum	Maximum	Mean	SD
Second-order factor: civic integration				
First-order factors				
Institutional trust				
Trust in country's parliament	0	10	4.13	2.63
Trust in the legal system	0	10	4.85	2.74
Trust in the police	0	10	5.64	2.71
Trust in politicians	0	10	3.32	2.41
Trust in political parties	0	10	3.33	2.38
Perceived quality of public services				
How satisfied with present state of economy in country	0	10	4.17	2.56
How satisfied with the national government	0	10	4.04	2.52
How satisfied with the way democracy works in country	0	10	5.03	2.56
State of education in country nowadays	0	10	5.43	2.41
State of health services in country nowadays	0	10	5.10	2.61
Generalised trust				
Most people can be trusted or you can't be too careful	0	10	4.90	2.50
Most people try to take advantage of you. or try to be fair	0	10	5.48	2.36

**Table 3** continued

Variables	Minimum	Maximum	Mean	SD
Most of the time people helpful or mostly looking out for themselves	0	10	4.77	2.38
Second-order factor: network density				
First-order factors				
Willigness to participate				
Signed petition last 12 months	0	1	0.81	0.40
Taken part in lawful public demonstration last 12 months	0	1	0.94	0.24
Boycotted certain products last 12 months	0	1	0.86	0.35
Participation in associations				
Worked in another organisation or association last 12 months	0	1	0.87	0.33
Worked in political party or action group last 12 months	0	1	0.96	0.19
Isolation				
How often socially meet with friends, relatives or colleagues	1	7	4.87	1.62
Take part in social activities compared to others of same age	1	5	2.71	0.95

We found the first-order factors to be significantly loading on their respective ESS questions. The second-order constructs moreover loaded significantly on the first-order factors. The model fit of this analysis is acceptable. It has a Standardised Root Mean Square Residual value of 0.051 and a Comparative Fit Index of 0.89. In a next phase, we calculate the individual factor scores for civic integration and network density. Afterwards, aggregate country level scores per ESS round were calculated, based on the individual factor scores, given the assumption in this article that social cohesion is a characteristic of a given social and political system as a whole.

Table 4 presents in this regard some descriptive information on the levels of social cohesion within each ESS participant country. In line with other research, we find that

**Table 4** Social cohesion in European Social Survey participant countries *Source*: ESS pooled dataset 2006–2012

Country	Social cohesion	Minimum	Maximum	Mean	SD
Austria	Civic integration			0.21	
	Network density			0.26	
Belgium	Civic integration	0.14	0.36	0.26	0.12
	Network density	0.09	0.26	0.14	0.08
Bulgaria	Civic integration	-1.05	-0.78	-0.92	0.11
	Network density	-0.44	-0.39	-0.42	0.02
Croatia	Civic integration			-0.74	
	Network density			-0.27	
Cyprus	Civic integration	-0.46	0.44	0.11	0.42
	Network density	-0.30	-0.06	-0.17	0.11
Czech Republic	Civic integration	-0.38	-0.32	-0.34	0.03
	Network density	-0.26	-0.23	-0.25	0.02
Denmark	Civic integration	0.73	1.04	0.90	0.14
	Network density	0.39	0.52	0.45	0.06

**Table 4** continued

Country	Social cohesion	Minimum	Maximum	Mean	SD
Estonia	Civic integration	-0.10	0.09	0.00	0.09
	Network density	-0.29	-0.24	-0.26	0.02
Finland	Civic integration	0.66	0.86	0.78	0.09
	Network density	0.49	0.53	0.52	0.02
France	Civic integration	-0.21	-0.08	-0.13	0.05
	Network density	0.07	0.15	0.11	0.03
Germany	Civic integration	-0.12	0.24	0.04	0.15
	Network density	0.10	0.38	0.23	0.11
Greece	Civic integration	-1.04	-0.56	-0.80	0.33
	Network density	-0.49	-0.35	-0.42	0.10
Hungary	Civic integration	-0.80	-0.21	-0.43	0.28
	Network density	-0.47	-0.36	-0.43	0.05
Iceland	Civic integration			0.20	
	Network density			0.70	
Ireland	Civic integration	-0.24	0.25	0.10	0.23
	Network density	-0.20	0.05	-0.06	0.11
Italy	Civic integration			-0.54	
	Network density			-0.12	
Lithuania	Civic integration	-0.66	-0.26	-0.46	0.28
	Network density	-0.42	-0.36	-0.39	0.04
Netherlands	Civic integration	0.59	0.63	0.61	0.02
	Network density	0.28	0.30	0.29	0.00
Norway	Civic integration	0.60	0.89	0.73	0.13
	Network density	0.44	0.58	0.50	0.05
Poland	Civic integration	-0.58	-0.29	-0.45	0.12
	Network density	-0.42	-0.26	-0.34	0.06
Portugal	Civic integration	-0.71	-0.38	-0.57	0.16
	Network density	-0.38	-0.29	-0.34	0.04
Slovakia	Civic integration	-0.41	-0.02	-0.21	0.22
	Network density	-0.30	-0.16	-0.23	0.07
Slovenia	Civic integration	-0.58	-0.09	-0.34	0.27
	Network density	-0.41	-0.26	-0.34	0.07
Spain	Civic integration	-0.62	0.15	-0.19	0.33
	Network density	-0.03	0.12	0.07	0.07
Sweden	Civic integration	0.54	0.79	0.65	0.11
	Network density	0.51	0.64	0.55	0.06
Turkey	Civic integration			-0.21	
	Network density			0.35	
United Kingdom	Civic integration	-0.05	0.07	0.01	0.05
	Network density	-0.05	0.05	0.00	0.04
Total	Civic integration	-1.18	1.04	-0.02	0.53
	Network density	-0.51	0.91	-0.02	0.34

No standard deviation, minimum or maximum are provided for countries with information available for 1 timeslot only

former communist countries and southern European countries tend to show lower levels of social cohesion. Scandinavian and Western European countries such as Luxemburg or Belgium are characterised by higher levels of civic integration and network density.

#### 4 Is Economic Inequality a Latent Concept?

In order to test whether inequality is a latent concept, we conducted an exploratory factor analysis. We rotated the factors, and opted for an oblique rotation, as we assume that the independent variables are correlated. Our rotation method consisted of a direct Oblimin factor rotation.

Before starting the exploratory factor analyses, we controlled for the direction of the variables, and multicollinearity or singularity between the set of indicators. Indicators which had a Pearson's correlation coefficient above 0.850 were not included together in order to prevent biased results. More concretely, the Gini coefficient of disposable income and the S80/S20 ratio are not analysed together ( $\rho$  0.973). In addition, because the at-risk-of-poverty rate was correlated too strongly with both the Gini coefficient of disposable income ( $\rho$  0.883) and the S80/S20 rate ( $\rho$  0.899), and the at-risk-of-poverty and social exclusion indicator correlated too strongly with material deprivation ( $\rho$  0.951). These variables are also not analysed together.

In a first phase we included the following set of indicators in our extraction method: "People at risk of poverty or social exclusion", "People living in households with very low work intensity" and "Inability to make ends meet" (to measure poverty); the income inequality indicators, the Gini coefficient of market income and the Gini coefficient of disposable income; the household debt indicator "Arrears", and the unemployment rate. We did not include the S80/S20 ratio, the material deprivation rate and the "At-risk-of-poverty" rate in this model, given the above-mentioned possibility of bias. In addition, also the OECD indicator on wealth shares was not included, because we only have data for 2010. To assess whether the covariance matrix of the indicators can be factored, we conducted a Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy. The value of the KMO test was 0.712, which suggests that our data is factorable (Table 5).

From the exploratory factor analysis we can derive two factors which load on inequality indicators. Factor 1 (Cronbach's  $\alpha = 0.812$ ) loads on concepts measuring poverty, income inequality, economic strain and unemployment. This factor indicates therefore economic deprivation, in a broad sense. This is in contrast to hypothesis 1, which expected that these indicators would be distinct factors. Factor 2 (Cronbach's  $\alpha = 0.682$ ) loads on pre-tax -and transfers market inequality, and is also related to the indicator "People living in households with a very low work intensity". As such this factor points less at economic deprivation, but to objective market outcomes. Both factors are able to explain 62.12% of the overall variance.

In order to check the consistency of these factors we conducted a second exploratory factor analysis, in which we replace the Gini coefficient of disposable income with the S80/S20 ratio; the "At-risk-of-poverty and social exclusion" indicator with the material deprivation ratio. These indicators cannot be analysed together, due to multicollinearity issues, but given their high correlations, we would expect a similar factor structure.<sup>9</sup> The results of this analysis can be found in Table 6.

---

<sup>9</sup> The KMO test value was 0.722.

**Table 5** Factor analysis I—exploratory factor analysis on inequality indicators

Variable	Factor	
	1	2
Gini coefficient of disposable income	<b>0.57</b>	0.28
Unemployment rate	<b>0.40</b>	0.20
Gini coefficient of market income	-0.12	<b>0.93</b>
People living in households with very low work intensity	0.11	<b>0.57</b>
Arrears (mortgage or rent, utility bills or hire purchase)	<b>0.86</b>	-0.17
People at risk of poverty or social exclusion	<b>0.92</b>	0.07
Inability to make ends meet	<b>0.95</b>	-0.15
Eigenvalue	3.47	1.50
Percentage of explained variance	45.24	16.88

Factor loadings above 0.4 are indicated in bold

Extraction method: principal axis factoring

Rotation method: Oblimin with Kaiser normalization; pattern matrix

**Table 6** Factor analysis II—exploratory factor analysis on inequality indicators

	Factor	
	1	2
S80/S20 income quintile share ratio	<b>0.59</b>	0.24
Unemployment	0.37	0.28
Severe material deprivation rate	<b>0.88</b>	-0.07
Gini coefficient of market income	-0.10	<b>0.80</b>
People living in households with very low work intensity	0.05	<b>0.67</b>
Arrears (mortgage or rent, utility bills or hire purchase)	<b>0.87</b>	-0.12
Inability to make ends meet	<b>0.94</b>	-0.09
Eigenvalue	3.34	1.56
Percentage of explained variance	43.01	16.04

Factor loadings above 0.4 are indicated in bold

Extraction method: principal axis factoring

Rotation method: Oblimin with Kaiser normalization; pattern matrix

As we can derive from Table 6, a similar factor structure holds: we find one factor related to broader economic deprivation (Cronbach's  $\alpha = 0.862$ ), and one factor related to market outcomes. The unemployment rate does not achieve the minimal factor loading of 0.40. In this model, the two factors are able to explain 59.05% of total variance.

Both the unrotated and structure matrix of the two conducted factor analyses point at similar factors. In order to further control for the robustness of the factors, we replaced the Gini coefficient of disposable income (Eurostat) by the Gini of the coefficient as calculated by the World Bank and the Standardized World Income Inequality Database<sup>10</sup> (Solt 2016). A similar factor structure emerged. The factor structure also holds when deleting one or

<sup>10</sup> A similar approach was taken with regards to the Gini coefficient of market income. Replacing the Gini index of Eurostat with the coefficient of the Standardized World Income Inequality Database did not change the factor structure.

several of the economic deprivation indicators on the one hand, or one of the market outcomes factor on the other. Interestingly, the variable “Share of national wealth by wealthiest 10%” of the OECD also loads on the first factor (models available on request). However, given the very limited amount of data we have on this indicator, we cannot include the variable in further models. Lastly, we checked whether we could observe a different factor structure between EU- and non-EU member states, yet this was not the case.

Summing up, the exploratory factor analyses show that the inequality indicators can be reduced to two factors. This confirms hypothesis 1, which stated that there are different aspects of inequality, which cannot be reduced to a single latent construct. Nevertheless, and as opposed to other research, the analyses show that several distinct economic inequality indicators form part of a broader pattern of economic inequality, or phrased differently, economic deprivation. However, not every indicator that has been related to inequality, i.e. the Gini coefficient of market income or the percentage of people living in households with very low work intensity, can be associated with this factor. That might sound counterintuitive, given the strong connection between the Gini coefficient of market income and the Gini coefficient of disposable income, or the relation between unemployment levels and percentage of people living in households with very low working activity. We suggest that the indicators loading on the second factor measure economic inequality, or the actual percentage of people that are deprived of equal economic opportunities and outcomes, less well. They can be seen as measurements of certain market outcomes, but we speculate that other processes are at play to change these outcomes into inequalities of opportunities and outcomes.

Lastly, we calculated the factor scores—per country per year—of the European Social Survey participants, using the Bartlett’s method, based on the results of Factor Analysis I (Table 5). Missing data were deleted listwise. We chose Factor Analysis I, because it was able to explain more variance.<sup>11</sup>

Tables 7 and 8 show the distribution of the factor scores among the European Social Survey Participant countries. Positive scores imply more unbalanced market outcomes, or higher levels of economic deprivation, negative scores point at more equal societies or balanced market outcomes. Norway, the Netherlands, Sweden, Austria and Denmark are characterised by the on average lowest levels of economic deprivation; Bulgaria and Turkey are the most unequal, followed by several former communist and southern European countries (Table 7).

When looking at the market outcomes factor (Table 8), a different picture emerges. Iceland, Cyprus, the Czech Republic, Slovenia and Slovakia have on average the most balanced market outcomes, whereas Germany, Turkey, the United Kingdom and Ireland have the most unbalanced market outcomes. When comparing the descriptive tables, it becomes with other words clear that both factors are associated with rather different processes.

---

<sup>11</sup> We excluded the indicator of unemployment in the calculation of countrywide factor scores of economic inequality. We speculate that the low factor loading points at the fact that unemployment cannot be seen as a measurement of economic inequality *an sich*, but rather as a cause or consequence of economic inequality, which is in line with previous research.

**Table 7** Economic deprivation across Europe

Country	Mean	SD	Minimum	Maximum
Austria	-0.97			
Belgium	-0.42	0.05	-0.46	-0.35
Bulgaria	2.78	0.37	2.48	3.31
Croatia	1.10			
Cyprus	0.66	0.31	0.33	1.03
Czech Republic	-0.83	0.06	-0.88	-0.76
Denmark	-0.90	0.14	-1.03	-0.77
Estonia	-0.29	0.24	-0.54	-0.06
Finland	-0.84	0.02	-0.85	-0.82
France	-0.62	0.08	-0.70	-0.55
Germany	-0.69	0.04	-0.74	-0.65
Greece	1.03	0.22	0.87	1.18
Hungary	0.95	0.41	0.48	1.44
Iceland	-0.66			
Ireland	0.32	0.53	-0.14	0.94
Italy	0.68			
Lithuania	0.72	0.09	0.65	0.79
Netherlands	-1.01	0.06	-1.07	-0.94
Norway	-1.03	0.15	-1.18	-0.82
Poland	0.70	0.58	0.32	1.56
Portugal	0.50	0.19	0.24	0.65
Slovak Republic	-0.18	0.24	-0.40	0.16
Slovenia	-0.46	0.17	-0.67	-0.28
Spain	0.27	0.28	-0.02	0.55
Sweden	-0.99	0.05	-1.03	-0.92
Turkey	3.52			
United Kingdom	-0.24	0.04	-0.29	-0.20
Total	-0.01	1.01	-1.18	3.52

Distribution of factor scores  
No standard deviation, minimum or maximum are provided for countries with information available for 1 timeslot only

**Table 8** Market outcomes across Europe

Country	Mean	SD	Minimum	Maximum
Austria	-0.87			
Belgium	-0.01	0.25	-0.31	0.31
Bulgaria	0.44	0.78	-0.23	1.56
Croatia	0.15			
Cyprus	-2.07	0.68	-2.76	-1.26
Czech Republic	-1.27	0.09	-1.36	-1.18
Denmark	0.00	1.01	-1.07	1.07
Estonia	-0.31	0.45	-0.99	0.00
Finland	-0.67	0.13	-0.84	-0.54
France	0.26	0.16	0.08	0.45
Germany	1.62	0.22	1.32	1.83

**Table 8** continued

Country	Mean	SD	Minimum	Maximum
Greece	-0.02	0.05	-0.06	0.01
Hungary	0.63	0.81	0.02	1.81
Iceland	-2.11			
Ireland	1.00	0.93	0.16	1.86
Italy	0.16			
Lithuania	0.15	0.12	0.07	0.23
Netherlands	-0.89	0.19	-1.11	-0.68
Norway	-0.74	1.39	-1.83	1.26
Poland	0.34	0.74	-0.25	1.38
Portugal	0.79	0.67	0.30	1.75
Slovak Republic	-1.38	0.44	-1.90	-0.85
Slovenia	-1.80	0.27	-2.14	-1.49
Spain	-0.28	0.75	-1.08	0.65
Sweden	0.04	0.97	-1.41	0.60
Turkey	1.06			
United Kingdom	1.25	0.45	0.82	1.79
Total	-0.14	1.11	-2.76	1.86

Distribution of factor scores

No standard deviation, minimum or maximum are provided for countries with information available for 1 timeslot only

## 5 Deprivation and Social Cohesion

In a second phase, we assessed whether we can couple the factor economic deprivation and the factor market outcomes with the social cohesion indicators. In order to do this, we estimated OLS regression models, for each of the dependent variables at the country level. We coupled the two factors to the civic integration and network density indicators, and controlled for national social expenditure and GDP per capita rates per year. We included time dummies (with 2006 as reference category) and took the age of democracy into account. Democracies established after 1989 were coded as zero, older democracies were coded as 1. As such, we could take the differences between former communist countries and the older Western European democracies into account. Before starting the analyses, we checked the assumptions of linear regression for the different models. We do not have any multicollinearity problems: variance inflation factor scores were all below 3.4 and we did not find any problematic correlations (with a  $\rho > 0.9$ ). In addition, there were no problems with heteroscedasticity or linearity of the residuals. The errors were furthermore independent and normally distributed. Finally, we assessed whether there were problems with influential cases, but could not find any problematic Cook's distance values.

Table 9 presents the results of the regression analyses. First and foremost the factor economic deprivation is always significantly negatively related to the social cohesion indicators. A one unit increase in economic deprivation leads to a drop of  $-0.21$  of national civic integration levels and  $-0.11$  of network density levels if all other variables are kept constant.

The market outcomes factor has a more mixed relation with social cohesion. It is negatively related to civic integration ( $\beta = -0.08$ ) and network density ( $\beta = -0.01$ ).



**Table 9** Relating inequality to social cohesion

	Model 1 Civic integration	Model 2 Network density
(Intercept)	-0.05 (0.07)	-0.02 (0.04)
Economic deprivation	-0.21*** (0.05)	-0.11*** (0.03)
Market outcomes	-0.08* (0.03)	-0.01 (0.02)
Age of democracy (ref.: non-communist)	0.08 (0.05)	0.06* (0.03)
GDP per capita	0.24*** (0.06)	0.17*** (0.03)
Expenditure on social protection	-0.04 (0.04)	0.03 (0.02)
Time (ref: 2006)		
2008	-0.20* (0.09)	-0.10* (0.05)
2010	-0.15 (0.09)	-0.08 (0.05)
2012	-0.12 (0.10)	-0.07 (0.05)
R <sup>2</sup>	0.72	0.81
Adj. R <sup>2</sup>	0.69	0.79
Num. obs.	87	87

OLS regression model, standardised regression coefficients with standard errors in parentheses

Dependent variable: civic integration (model 1) or network density (model 2)

\*  $p < 0.01$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

However, the factor only has a statistically significant relation with civic integration ( $p < 0.05$ ). Hypothesis 2 can therefore only partially be confirmed.

The aftermath of the economic and financial crisis is visible in the negative regression coefficients of the time dummies in both models, but we can only find a statistically significant relation for 2008 ( $p < 0.05$ ). The GDP per capita rate has a positive and significant relation with social cohesion. The age of democracy<sup>12</sup> is positively related to network density ( $\beta = 0.06$ ,  $p < 0.05$ ). Expenditure on social protection is not related to social cohesion in this study.

The regression analyses corroborate the findings of other research: inequality, in the broad sense of the word, is negatively related to social cohesion. The factor of economic deprivation, in comparison with the factor of market outcomes, seems to be more strongly connected to social cohesion given its larger  $\beta$ -values and consistent (and significant) negative relation.

## 6 Discussion

This article investigated whether different dimensions of economic inequality could be reduced to a single latent construct. In addition, it linked different aspects of economic inequality to social cohesion. Social cohesion was measured by two composite measures, i.e. network density and civic integration, based on European Social Survey participant countries.

We found—in line with other research—that economic inequality indeed goes on pair with lower levels of social cohesion. However, current measurements by most researchers

<sup>12</sup> Age of Democracy is measured via dummy coding. The reference category (0) implies that the country did not have a communist regime in its past.

of economic inequality overlook the fact that several economic inequality indicators can be reduced to two underlying concepts, which this paper has called “economic deprivation” and “market outcomes”.

National measurements of having a significant amount of the population that can be defined as poor and at risk of social exclusion or measurements of an unbalanced spread of disposable income and wealth, all load on one concept, i.e. economic deprivation. As such, previous made distinctions between indicators of poverty or social exclusion, income and wealth inequality do not necessarily add much to our comprehension of the consequences of economic inequality on social cohesion.

The second factor “market outcomes” indicates that there is a vital difference between imbalanced economic outcomes directly generated by the markets, and the economic strain that individuals actually experience. The direct market outcome of having an unequal redistribution of incomes before taxes and transfers (Gini of market income) or people living in households with very low work intensity, might be seen as endogenous responses to changes in labour supply or factor prices (Olivera 2015). The analyses show in this regard that these market outcomes are a distinct dimension. Given the relatively small and mostly non-significant negative relation of the factor market outcomes with social cohesion, the question arises to what extent this factor is linked to the dimension of economic deprivation (which is significantly negatively related to social cohesion). How does it come that unequal economic outcomes—as generated by markets—are non-significantly related to social cohesion? Which processes are in other words at play that turn imbalanced market outcomes in experienced economic hardship?

We speculate that government redistributive policies, and public support for redistribution measures, will play its part in these processes. Economic deprivation would than at least partially be determined by exogenous forces, and would as an indicator also run the risk of becoming too correlated with the quality of government services. Further research is needed to clarify this link. Either way, studies that link economic inequality with social cohesion should be attentive to differentiate the two factors, and take both into account within analyses.

## References

- Alesina, A., & La Ferrara, E. (2002). Who trusts others? *Journal of Public Economics*, 85(2), 207–234.
- Alvaredo, F., Atkinson, A. B., Piketty, T., Saez, E., & Zucman, G. (2016). *The world wealth and income database*. Retrieved on 8th of June from <http://www.wid.world/>.
- Atkinson, A. (2015). *Inequality. What can be done?*. Cambridge: Harvard University Press.
- Barnes, M., Heady, C., Middleton, S., Millar, J., Papadopoulos, F., Room, G., et al. (2002). *Poverty and social exclusion in Europe*. Cheltenham: Edward Elgar Publishing Limited.
- Berger-Schmitt, R. (2002). Considering social cohesion in quality of life assessments: Concept and measurement. *Social Indicators Research*, 58, 403–428.
- Bergh, A., & Bjørnskov, C. (2014). Trust, welfare states and income inequality: Sorting out the causality. *European Journal of Political Economy*, 35, 183–199.
- Boda, Z., & Medve-Bálint, G. (2014). The poorer you are, the more you trust? The effect of inequality and income on institutional trust in East-Central Europe. *Czech Sociological Review*, 50(3), 419–453.
- Botterman, S., Hooghe, M., & Reeskens, T. (2011). ‘One size fits all’? an empirical study into the multi-dimensionality of social cohesion indicators in Belgian Local Communities. *Urban Studies*, 49(1), 185–202.
- Cammatt, M., Lynch, J., & Bilev, G. (2015). The influence of private health care financing on citizen trust in government. *Perspectives on Politics*, 13(4), 938–957.
- Chan, J., To, H., & Chan, E. (2006). Reconsidering social cohesion: Developing a definition and analytical framework for research. *Social Indicators Research*, 75(2), 273–302.

- Cowell, F. (2011). *Measuring inequality*. Oxford: Oxford University Press.
- Dickes, P., Valentova, M., & Borsenberger, M. (2010). Construct validation and application of a common measure of social cohesion in 33 European countries. *Social Indicators Research*, 98(3), 451–473.
- Durkheim, E. (1973 [1893]). *De la Division du Travail Social*. Paris: Presses Universitaires de France.
- European Social Survey. (2016). *European Social Survey*. Retrieved on 3rd of March, from <http://www.europeansocialsurvey.org/>.
- Eurostat. (2015a). *The Gini coefficient of equivalised disposable income*. Retrieved on 29th of January 2016, from <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&language=en&pcode=tessi190>.
- Eurostat. (2015b). *Gini coefficient of equivalised disposable income before social transfers (pensions included in social transfers)*. Retrieved on 29th of January 2016, from [http://ec.europa.eu/eurostat/en/web/products-datasets/-/ILC\\_DII2B](http://ec.europa.eu/eurostat/en/web/products-datasets/-/ILC_DII2B).
- Eurostat. (2015c). *Expenditure on social protection as percentage of GDP*. Retrieved on 29th of January 2016, from <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00098&plugin=1>.
- Eurostat. (2016a). *S80/S20 income quintile share ratio*. Retrieved on 7th of June, from <http://ec.europa.eu/eurostat/web/gdp-and-beyond/quality-of-life/s80s20-income-quintile>.
- Eurostat. (2016b). *Database income and living statistics*. Retrieved on 9th of May, from <http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/database>.
- Fairbrother, M., & Martin, I. W. (2013). Does inequality erode social trust? Results from multilevel models of US states and counties. *Social Science Research*, 42(2), 347–360.
- Gustavsson, M., & Jordahl, H. (2008). Inequality and trust in Sweden: Some inequalities are more harmful than others. *Journal of Public Economics*, 92, 348–365.
- Helliwell, J. F. (2001). Social capital, the economy and well-being. In K. G. Banting, A. Sharpe & F. St-Hilaire (Eds.), *The review of economic performance and social progress. The longest decade: Canada in the 1990s* (pp. 43–60). Retrieved from <http://www.csls.ca/repsp/1/03-helliwell.pdf>.
- Inglehart, R. (2016). Inequality and modernisation. *Foreign Affairs*, 95(1), 2–10.
- Jenson, J. (2010). *Defining and measuring social cohesion*. London: The Commonwealth Secretariat.
- Lancee, B., & Van de Werfhorst, H. G. (2012). Income inequality and participation: A comparison of 24 European countries. *Social Science Research*, 41(5), 1166–1178.
- Loveless, M. (2013). The deterioration of democratic political culture: Consequences of the perception of inequality. *Social Justice Research*, 26, 471–491.
- Milanovic, B. (2016). *Global inequality. A new approach for the age of globalization*. Cambridge: The Belknap Press of Harvard University Press.
- OECD. (2015). *In it together: Why less inequality benefits all*. Paris: OECD.
- OECD. (2016). *By country wealth inequality*. Retrieved on 9th of May, from <http://stats.oecd.org/index.aspx?queryid=65089>.
- Olivera, J. (2015). Changes in inequality and generalised trust in Europe. *Social Indicators Research*, 124, 21–41.
- Paskov, M., & Dewilde, C. (2012). Income inequality and solidarity in Europe. *Research in Social Stratification and Mobility*, 30, 415–432.
- Piketty, T. (2015). *Capital in the twenty-first century*. Cambridge: Harvard University Press.
- Rothstein, B., & Uslaner, E. M. (2005). All for all: Equality, corruption, and social trust. *World Politics*, 58(1), 41–72.
- Schlozman, K. L., Verba, S., & Brady, H. E. (2012). *The unheavenly chorus. Unequal political voice and the broken promise of American democracy*. Princeton: Princeton University Press.
- Schmidt-Catran, A. W. (2016). Economic inequality and public demand for redistribution: Combining cross-sectional and longitudinal evidence. *Socio-Economic Review*, 14(1), 119–140.
- Schoon, I., & Cheng, H. (2011). Determinants of political trust: A lifetime learning model. *Developmental Psychology*, 47(3), 619–631.
- Solt, F. (2015). Economic inequality and nonviolent protest. *Social Science Quarterly*, 96(5), 1314–1327.
- Solt, F. (2016). The standardized world income inequality database. *Social Science Quarterly*, 97, 1267–1281.
- Stiglitz, J. E. (2012). *The price of inequality*. New York: W. W. Norton & Company Inc.
- Uslaner, E. M. (2011). Corruption, the inequality trap and trust in government. In S. Zmerli & M. Hooghe (Eds.), *Political trust. Why context matters* (pp. 141–162). Colchester: ECPR Press.
- Vergolini, L. (2011a). Social cohesion in Europe: How do the different dimensions of inequality affect social cohesion? *International Journal of Comparative Sociology*, 53(3), 197–241.
- Vergolini, L. (2011b). Does economic vulnerability affect social cohesion? Evidence from comparative analysis. *The Canadian Journal of Sociology*, 36(1), 1–23.

- Wroe, A. (2016). Economic insecurity and political trust in the united states. *American Politics Research*, 44(1), 131–163.
- World Bank. (2016a). *GDP per capita*. Retrieved on 7th of March, from <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.
- World Bank. (2016b). *Gini Index (World Bank Estimate)*. Retrieved on 3rd of February, from <http://data.worldbank.org/indicator/SI.POV.GINI>.
- World Bank. (2016c). *Unemployment, total (% of labor force)*. Retrieved on 29th of January, from <http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS>.
- Zmerli, S., & Castillo, J. C. (2015). Income inequality, distributive fairness and political trust in Latin America. *Social Science Research*, 52, 179–192.