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The New Geography of Discontent

*Building and explaining an Indicator that captures the extent of
 perceived Discontent among Europeans*

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Building and explaining an indicator that captures the extent of perceived
discontent among Europeans

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Summary

Europe is becoming increasingly discontent. Poor development prospects and an increasing belief that places have “no future” have led many of these so-called “places that do not matter” to revolt against the status quo. Therefore, a significant number of Europeans have gone to the streets to protest against this perceived feeling of being left-behind. Most renowned nowadays is the yellow-vest movement that initially set off in November 2018 and is still continuing at the moment of writing of this thesis. The uneven development process of places has given rise to what has been termed the geography of discontent. As the revolt against the perceived feeling of discontent has come via the ballot-box the emphasis within academia has been on explaining voting behavior. Explaining voting behavior has become a hot-topic, especially with the Brexit vote in June 2016 and the recent upsurge of populist and EU-skeptical parties in the political landscape in Western European countries.

Looking after the voter bases of populist- and EU-skeptical parties is an interesting element at itself, but the link with perceived levels of discontent among Europeans is far from certain. Not everybody who votes for a populist or EU-skeptical political party can be termed discontent. Neither those who are discontent immediately vote for a populist- or EU-skeptical political party. This thesis argues that researchers, in but also in between the lines, too often have the tendency to frame voting behavior as problematic. This tendency reinforces the populist narrative of an elite being alienated from the ordinary people.

In that light, this thesis aims to break away from this narrative by placing perceived feelings of discontent at the center of the debate. A composite indicator has been constructed that captures the level of perceived feelings of discontent among Europeans by using data from the European Social Survey. Principal Component Analysis is conducted on the political opinions and attitudes expressed in this dataset and finds that trust in and satisfaction of individuals with national and European institutions is the core driver behind the discontent indicator. Subsequently, by means of OLS regression, relationships between the discontent indicator and economic and demographic variables are explored. It appears that *economic geography* is core in explaining the perceived feelings of discontent. Specifically, the poor rather than the middle-class unveil high levels of discontent. A special role is found in respect to the effects of inequality. Therefore, within regional policy considerations at the national and European level, extra attention should be rewarded to how wealth is distributed over people and places.

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List of abbreviations

CHES	Chapel Hill Expert Survey
EC	European Commission
ESS	European Social Survey
EU	European Union
GDP	Gross Domestic Product
NEG	New Economic Geography
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
US	United States

Chapter 1 Introduction

1.1 The Yellow Vest Protests

Europe is becoming increasingly discontent. That is what became clear when following a set of events taking place by the end of 2018 and the beginning of 2019. On the 17th of November two men from the Veseol department launched a Facebook event to block all roads in the immediate vicinity to protest against the high fuel prices. Veseol is a peripheral region situated about 100 kilometers east of the capital of France, Paris. On one of the videos the suggestion was made to make use of yellow vests. French law requires all drivers to have yellow vests in their cars and to wear them in case of a traffic accident (The Local, 2018). Diesel prices reached an all-time high by the beginning of November as it increased by 16% in 2018. France has always been a country very much reliant upon diesel-driven automobiles. Two out of three French cars purchased consumed diesel (Le Point, 2018). Hence, it is not very surprising that in those places where the dependency on the automobile as the main source of transport is highest, the first yellow vests protests were originally initiated. French president Emanuel Macron later in November announced further tax reforms on fuel. These reforms were deemed necessary to combat climate change and to protect the environment (Al Jazeera, 2019). This very proposition led to massive demonstrations all over France. Foremost, in Paris where at its peak about 300,000 protesters came together. Thirteen deadly casualties were reported amongst the protesters.

By the time of writing of this thesis the yellow vests protests are still taking place. In the capital already for the 34st consecutive weekend tear gas had to be used to maintain order (Franko, July 2019). Also, the movement did not remain within the borders of France. A vast amount of countries also saw yellow vests demonstrations. Most prominently, these protests took place in other European countries such as Germany, Belgium, Spain, Portugal, the Netherlands, Poland, Italy and Ireland. However, also outside of the European continent people were protesting in amongst others the United States, Australia, Egypt and Russia.

The *raison d'être* for the yellow vests protest soon moved away from its origin. What started off as a protest against high fuel prices, shifted to a protest for various different motivations. These motivations for protests have been described as opposition against democracy, to the government, the established political order, the European Union, the signing of the Marrakesh Pact, the gap

between rich and poor or the lack of economic opportunities in disadvantaged places. Basically, the yellow vest movement has become a breeding ground for the wider society to voice their discontent. Altogether, few have studied what unites these massive popular protests that are observable nowadays. What nevertheless stands out is that a growing number of Europeans appear to be increasingly discontent.

1.2 The Geography of Discontent

Within academic research this subject has predominantly been approached via what has been termed *the geography of discontent*. Persistent poverty, economic decay and lack of opportunities are at the root of considerable discontent in declining and lagging-behind areas. Poor development prospects and an increasing belief that certain places have 'no future' have led many of these places to revolt against the status quo (Rodríguez-Pose, 2018). This has given rise to a geography of discontent where often central and urban places maintained economic progress, but an increasing amount of remote places are considered as lacking behind.

The main paradigm within research after discontent has focused itself on explaining voting behavior, since the revolt against the perceived feeling of discontent has come via the ballot-box (Rodríguez-Pose, 2017). Explaining voting behavior has become a hot-topic, especially with the recent upsurge of 'populistic' political parties in Western European countries and the Brexit referendum vote in June 2016. Brexit in particular has been a notorious case study for many (Los et al., 2017; Arnorsson & Zoega, 2016; Becker et al., 2016; Goodwin & Heath, 2016; Inglehart & Norris, 2016, Kaufman 2016). Outside of the United Kingdom, the emphasis has been laid on explaining 'populistic' voting behavior. Such as in the Netherlands (Rooduijn et al., 2016), Germany (Lees, 2018), France (Ivaldi, 2018), Italy (Agnew & Shin, 2017) and Belgium (Van Haute et al., 2017). More recently, studies have been conducted cross-nationally on a European scale to explore the voter bases of populist parties (Rooduijn, 2017) or the voter bases of EU-skeptical political parties (Dijkstra et al., 2018).

Whereas explaining voting behavior is an interesting research at itself, the link with discontent is far from certain. Not everybody who votes for a populist or EU-skeptical political party can be termed discontent. Neither those who are discontent immediately vote for a populist or EU-skeptical political party. The current research paradigm after the geography of discontent does often presuppose this relationship, without having clarified what discontent actually entails. In that way this thesis questions if the geography of discontent is truly about perceived feelings of discontent.

Another limiting element in the voting behavior studies so far is the ecological level. These studies have tended to put the region as the main unit of analysis. For instance, shares of votes for EU skeptical across electoral districts by Dijkstra et al., (2018), or vote and turnout shares at the Brexit

referendum across local authority areas in the United Kingdom by Becker et al. (2017) or. Instead, there is microdata accessible on the individual considerations, but more importantly additionally on perceived feelings of discontent.

1.3 The Anti-Populism bubble

Within the lines, but also in between the lines, research after voting behavior tends to pick a side in the political debate. The following quote emphasizes this tendency: *“Anti-EU voting is on the rise. Many governments and mainstream parties seem to be at a loss as to how to react to this phenomenon. The research conducted in this article may offer some initial suggestions about how to address the issue”* (Dijkstra et al., 2018, p.20). Anti-EU voting is directly described as an issue. Whereas, one could also say that anti-EU voting is a mere opinion. If one believes that without the European Union we would be better off, this does not need to be taken as an direct issue. In other scientific articles this tendency comes forward as well. Voting for either a populist or a EU-skeptical political party is thought of something being inherently bad. Ironically, there is a strong relationship present between education and the support for populism (Dijkstra et al., 2016; Spruyt et al., 2016; Elchardus & Spruyt, 2014). Those with a university degree break away from other educational attainments in their support for populist political parties. It is not very surprising that therefore populism receives so much (negative) attention in contemporary research.

This attention also underlines the dominative narrative of the populist. A central aspect of the populist message is the idea that every democracy is founded on the principle of popular sovereignty and that the voice of the people should give direction to decision-making. The people are defined in opposition to their perceived enemy. This very enemy is accused of being completely alienated from ordinary people and of being arrogant, incompetent, corrupt and selfish (Müller, 2017). It is hard to prove whether this elite is indeed arrogant, incompetent, corrupt and selfish, but there is some justice to the hypothesis that the scientific community is largely alienated from the ordinary people. The educational attainment differences partially support this claim. But more importantly, it is fair to question to what extent university schooled people indeed regularly interact with supporters of Front National, the Liberty Party, the Forum for Democracy or the Alternative for Germany. This highlights that the scientific community largely lives in what can be termed an anti-populism bubble. By changing our scope towards measuring actual discontent, we may break away from this core populist narrative.

1.4 Thesis aim

To the best knowledge of the author no further studies have ever explored the concept of discontent before. Exploring this phenomena specifically on a European wide scale therefore forms a compelling goal both from a societal and a scientific perspective. The purpose of this thesis is twofold.

Firstly, to create a composite indicator that captures the level of discontent of Europeans. Simplistically, a composite indicator synthesizes the information included in a selected set of variables. Using valuable data on political attitudes and opinions stemming from the ESS round 8 such a composite indicator will be constructed by using a statistical procedure termed principal component analysis (PCA). By doing so, the aim is to shed a more sophisticated light into the debate on the geography of discontent and to explain why Europeans are discontent. Composing composite indicators as a method is increasingly recognized as a useful tool for policy making and public communications in conveying information on countries' performances (Nardo & Saisano, 2009).

Secondly, this thesis aims to explore the relationships between the constructed discontent score and various economic and demographic indicators. Various relations have been tested between amongst others individual and regional income, regional employment and population change, educational attainment, age and gender and voting behavior. An explicit example is the theory on the holy trinity (Ford and Goodwin, 2014; Hobolt, 2017; Becker et al., 2017), that entails that citizens who are older, lesser educated and lower paid are more likely to vote for a populist political party in opposite to younger, highly educated and higher paid. This theory was confirmed by Los et al. (2017) analyzing the voter basis for Brexit. On a similar basis, this research highlights relationships but then with the constructed discontent score. Based on this, at different levels of government with Europe we can think of how to reduce perceived discontent among Europeans.

1.5 Thesis structure

In this first chapter the introduction of the thesis topic has been given. In the following chapter 2 the theoretical background is presented. Insights will be given in how researchers has been treating discontent in previous research and how these studies have aimed to explain discontent. Chapter 3 presents the used data and the methods. Subsequently, chapter 4 presents the main results of this thesis and lastly chapter 5 discusses and reflect upon these results, presents the conclusion and will end with a couple of implications for policy and further research.

Chapter 2. Theories

In the previous chapter the objective has been set to construct an indicator that captures perceived feelings of discontent, and, subsequently, to look how this discontent indicator interacts with various economic and demographic variables. Now this chapter will explore the studies that have shed similar light to researching discontent. In other words, what has been done so far to capture the perceived feeling of discontent among Europeans in academics? After having done so, the chapter will outline the economic and demographic variables used to explore the relationship with either perceived discontent, but foremost voting behavior. This, as discontent has barely been centralized as the object of studies.

2.1 Political Discontent

So far in this thesis it has been indicated a larger body of research should give attention to the study of actual perceived discontent. Too few studies have explored this subject academically so far. Nevertheless, some have touched upon its edge. Mostly, they have been exploring what has been conceptualized as political discontent. No unified definition of what political discontent precisely entails is available. Rather, over the past decades the interpretation of political discontent has been shifting. These interpretations are gathered hereunder.

2.1.1 Political discontent as trust

Earlier work on 'diffuse' support for political authorities has tended to align with the use of survey questions about government approval, trust and satisfaction with democracy, capturing generalized attitudes towards the political system (Easton, 1975). Trust has been framed being core in describing and measuring political support. It has been described as the probability that political systems (or some part of it) will produce preferred outcomes even if left unattended. In other words, it is the idea of receiving preferred outcomes even without the political group doing anything to bring them about. Members would feel trustful if their own interests would be attended even if the authorities were exposed to little supervision or scrutiny (Gamson, 1968).

Recently, there has been a long-term decline in the trust in governmental institutions (Lee and Young, 2013) and the European Union in particular (Brosius et al., 2018). Trust is an important factor for creating and stabilizing support for different political institutions. It appears that in the recent years many European citizens have lost trust in the European Union. In figure 2.1 the steady decay of trust in the EU is observable published by the Eurobarometer (European Commission, 2017). Less than half of all European citizens trust the EU or its institutions.

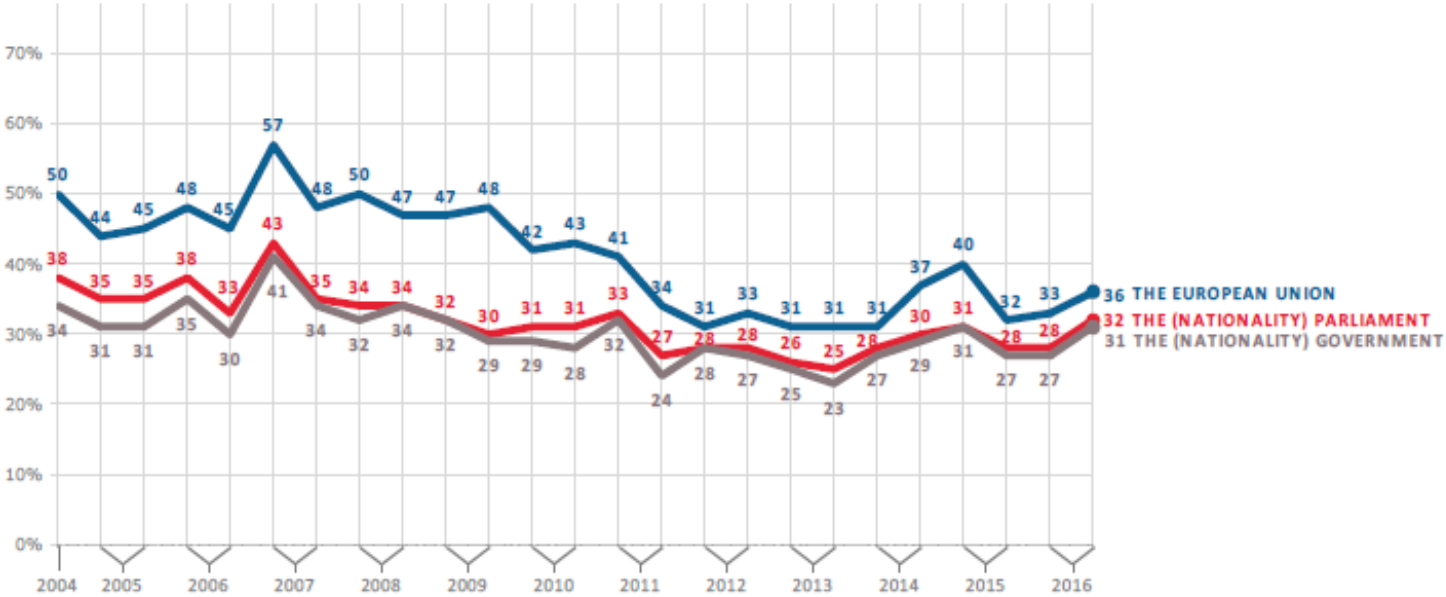


Figure 2.1: Trust development according to the Eurobarometer

2.1.2 Political discontent and participation

Rooduijn (2017) constructed a measurement of political discontent in his study to explore the relationship between populist voting and political discontent. In this Dutch case study, political discontent has been operationalized by means of three items from a panel dataset. These three items were “Parliamentarians do not care about the opinions of people like me”, “Political parties are only interested in my vote and not in my opinion”, and “People like me have no influence at all on government policy”. Political discontent is constructed in this manner reflecting the inability of people to participate in politics. Paradoxically, Craig (1980) coincides political discontent with the frequency and the size of people’s participation in active challenges to the legitimacy of the political order. Expressing strong against of diffuse support for the political system by actively participating in elite-challenging activities is expressed as political discontent. In that fashion, exploring the frequency and size of yellow vests protest could be a method of going about measuring political discontent in Paris.

Jennings et al. (2016) researched what citizen's see as the source of their political discontent. They identified five conceptualizations of what potentially could explain political discontent. Firstly, the idea that technical or expert government might achieve more in terms of better outcomes than democratic government. Secondly, governments can make no real difference to the economic and political challenges faced by societies. Thirdly, politicians lack the guts to take real tough decisions. Fourthly, the belief that politicians and voters driven by self-interested calculation. Voters will judge parties on their performance in delivering for them in the short term and incumbent politicians are therefore under irresistible pressure to deliver short-term gains or risk being voted out of office. Lastly and fifthly, the fear that the process of politics has become dominated by special or powerful interests.

2.1.3 Political discontent as voting behavior

The most prominent interpretation of political discontent, that has actually already presented itself in the introduction and is to date has been the most common way of defining discontent, is voting behavior. Bergh distinguishes between two dimensions of political discontent that he coined the 'system discontent' and the 'elite discontent' (2004). The system discontent concerns the democratic elements of politics such as parties, politicians, institutions, and the functioning of democracy. The elite discontent attacks the incumbent government and its performance in terms of the day-to-day policy outputs, but also other political parties including those in the opposition. These labels are attached to the political parties voted for by individuals.

Another way in which researchers aim to go about voting behavior is splitting them up in between votes in favor of EU-skeptical political parties, or populist political parties. Dijkstra et al. (2018) map the vote against the EU integration in the last national elections across 63.000 electoral districts in 28 EU Member States. This map is shown in figure 2.2. Anti-EU orientation of political is categorized as 'strongly opposed', 'opposed' or 'somewhat opposed' based on the Chapel Hill Expert Survey. In a similar manner, Rooduijn (2018) explores the voter bases of populist political parties. Using the European Social Survey a dummy variable is constructed that indicates whether a person votes for a populist political party, or not.

With respect to these researchers, European opposition stances by political parties are generally clear. One can find these stances in party programs. Think of political parties that either advocate leaving the European Union, a scaling back of the EU to a loose confederation of states, or the wish for a EU reform that not implies leaving (Dijkstra et al., 2018). In that way, one can define levels of EU-opposition per political party. Differently as EU-opposition, populism is a much more

ambiguous concept. Academics have spent much time on conceptualizing about populism. Problematically however, is the shift from conceptualization to application of these theories. It is almost impossible to apply the concepts on populism to a set clearly demarcated aspects of political parties. (Besides, this thesis exploring populist voting behavior is obsolete and we should move towards explaining actual discontent). In the next section these theories will be discussed as discontent research has been occupied a lot with populism as a concept.

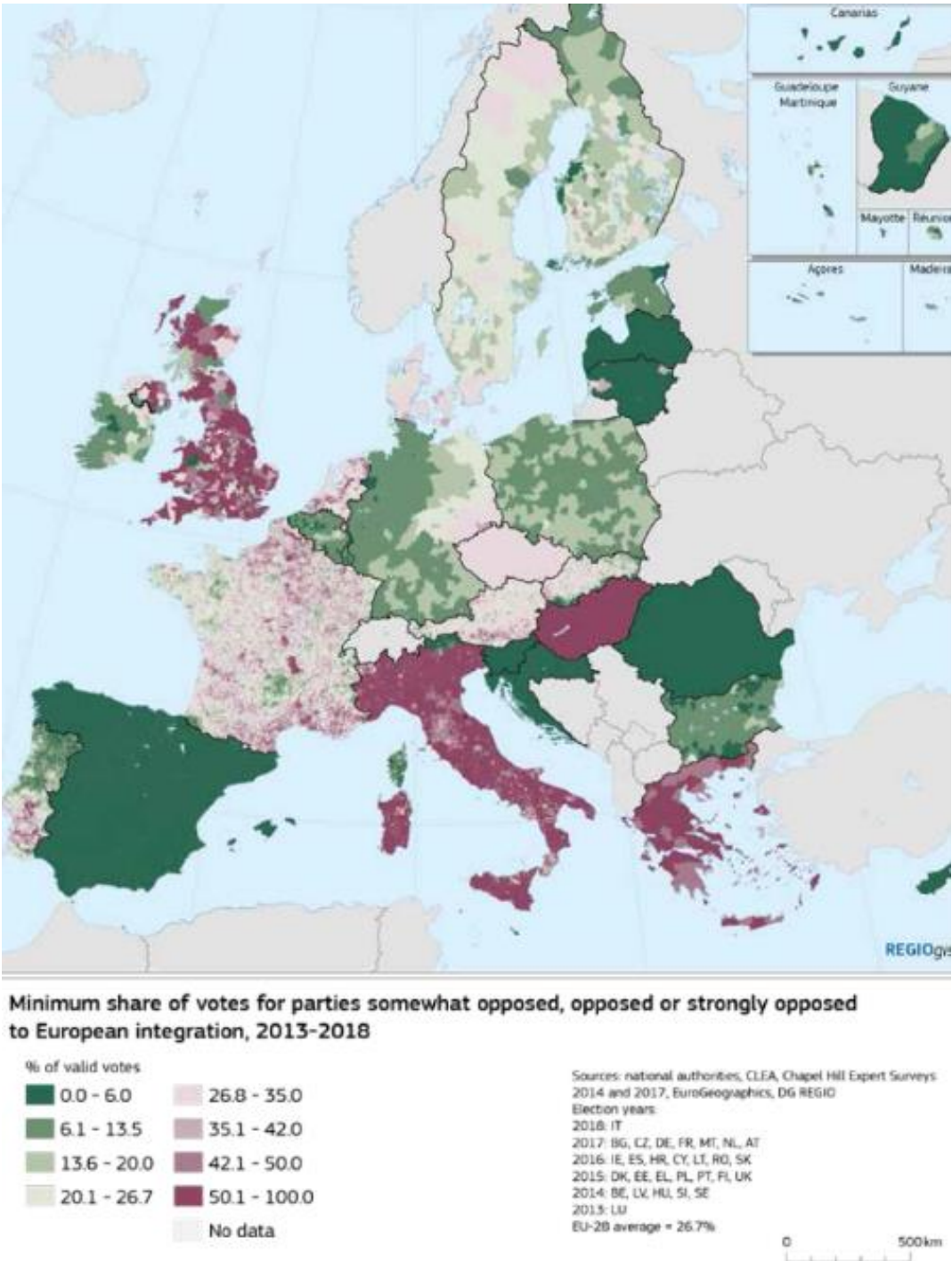


Figure 2.2: Share of votes for parties opposed to European integration (Dijkstra et al., 2018)

2.2 Populism

Mudde defines populism ‘an ideology that considers society to be ultimately separated into two homogeneous and antagonistic groups, “the pure people” versus “the corrupt elite”, and which argues that politics should be an expression of the *volonté générale* (general will) of the people’ (2004:543). In defining the ‘people’ and ‘elites’, populist parties create a dichotomy of ‘us’ against ‘them’, identifying ‘them’ or ‘the other’ as the antagonist and the foe. Hawkins proposes a highly similar definition: populism is, according to him, ‘a Manichean discourse that identifies good with a unified will of the people and Evil with a conspiring elite’ (2009:1042). The will of the people is considered the ultimate source of legitimacy (Spruyt et al., 2016). Canovan labels populism as a type of “redemptive politics” based on the democratic promise of a better world through the actions of the sovereign people (1999). This elite is accused of being completely alienated from ordinary people and of being arrogant, incompetent, corrupt and selfish. The term is primarily associated with particular moods and emotions: populists are “angry”, their voters are “frustrated” or suffer from “resentment” (Müller, 2017). Populist claim that they, and they alone, represent the people. Interestingly as philosopher Jürgen Habermas once put it “the people” can only appear in the plural (Rooduijn, 2017).

The definitions do not only have in common that they emphasize people-centrism and anti-elitism. They also share with each other that populism is perceived as more than merely a particular rhetoric, style, or strategy. Populism is conceived of as being a substantive message – or a set of ideas (Hawkins et al., 2012). So in this line of thinking, a set of ideas can be attached to different ideologies, ranging from left- to right wing, and from progressive to conservative lengths.

Although, this is too short sighted. As Müller has argued, “it is necessary but not a sufficient condition to be critical of elites in order to count as a populist” (2018: 4). Otherwise anyone that contemplates the status quo in, for instance, Greece, Italy, the Netherlands or France can be defined as populist. If one were to realistically follow these definitions virtually anyone can be considered as a populist. In the United States, both Donald Trump and Bernie Sanders have been labelled populist. Similarly in Europe, different political leaders have been connected to populism.

Studies like Rooduijn et al. (2017), Agnew et al., or Spruty et al. demarcate populist parties on the set of ideas on populism. When this is done flaws can be observed. Firstly, inconsistencies appear in between these studies when attaching the labels on populist political parties. One party is labelled as populist, where others are not. But more importantly, this translation from sets of ideas to attaching labels lacks empirical grounding. Populist political parties are handpicked rather than empirically defined. Say by for instance referring to party program rhetoric or speeches by political leaders.

2.3 Who is discontent?

So far this chapter has identified several interpretations of political discontent in earlier research. When this continues to construct a composite indicator of discontent, these interpretations can be used to compare the dimensions derived from the principal component analysis on political attitudes and opinions among Europeans in the European Social Survey. In the remainder of this chapter aims to identify theories in the research on what causes political discontent and populist and EU-skeptical voting behavior. These theories form the economic- and demographic indicators of this research.

2.3.1 The economic determinants of discontent

In this section we will explore the bulk of recent literature that has been looking at how and to what extent economic determinants can explain geographies of voting behavior (Dijkstra et al., 2018; Los et al., 2017). The empirical findings of these research studies has been mixed.

Los et al. (2017) observed that economic geography was key in explaining the Brexit vote. In the 2016 UK referendum the regions that voted strongly for leave tended also to be the same regions with the greatest level of dependency on EU markets for their local economic development. This emphasis on economic geography is in line with Rodriguez-Pose (2018) his findings. He broadens the scope also to a wide selection of countries the world over. Economic geography is core in explaining voting outcomes in Thailand and the United States. Territorial economic inequalities between the North on the one side and Bangkok in the Southern region on the other explain the difference in choice for either the populist- or the royalist party. With respect to the US, the presidential election of 2016 depicts how the most prosperous states at the east- and west coast voted in favor of Hillary Clinton. Whereas, voting behavior in the traditional rustbelt- and flyover states secured the victory for Donald Trump. Within other European Countries researchers find the economic geographical pattern within populist voting as well (Arnorsson & Zoega, 2016; Becker, al., 2016; Goodwin & Heath, 2016; Joseph Rowntree Foundation, 2016; Zoega, 2016). Elections in France, the Netherlands, Germany and other Western-European countries follow the same logic (Rodriquez-Pose, 2018).

The exploration of the effect of economic geography within these researchers generally consists of three different effects. These three elements are the following. Firstly, the effect of direct individual income. The archetype of the anti-system supporter has been defined as poorer (Goodwin & Heath, 2016). Thus, the individuals left-behind by the modern economy and processes are much more likely to turn to or find shelter in anti-establishment political opinions (Dijkstra et al., 2018). A contrary but highly popular theory on the effect of income is the issue of “the middle-class”. French geographer Christophe Guilluy argues that in all European countries one can observe the

disappearance of the middle-class (2019). The middle-class consists of those within the 3rd and 8th income percentiles. Arguably to Guilluy it are not the poorest of citizens that revolt. The core of the yellow vest protests consists of hardworking French laborers who reach the end of the month with great financial difficulty. Equalizing the middle-class to gross income by citizens, it is indeed found for the Netherlands as well that the middle class shrank from 68% in 1990 to 57% in 2014 (Wetenschappelijke Raad voor het Regeringsbeleid, 2017).

Besides the effect of direct income, the second effect encompassing the economic geography is the effect of regional income. Regions with a higher absolute GDP per capita are less likely to vote in favor of populist and EU-skeptical political parties compared to poorer regions (Arnorsson & Zoega, 2016; Becker, Fetzer, & Novy, 2016; Goodwin & Heath, 2016; Joseph Rowntree Foundation, 2016; Zoega, 2016). Regions where GDP is low are more likely to be apprehensive of the EU in the Brexit Vote.

Thirdly and lastly, the effect of regional economic growth. Regions that have been reporting lower economic growth has seen higher share of anti-establishment votes (Arnorsson & Zoega, 2016, Goodwin & Heath, 2016, Dijkstra et al., 2018). The growth period based on in these analysis differs per research but generally all find the same result. Albeit an average growth rate over 10 years (Dijkstra et al., 2018), 14 years (Arnorsson & Zoega, 2016) or 25 years (Rodríguez-Pose, 2017). With respect to Brexit, the county with the highest share of the Brexit vote has been among the areas with the lowest GDP growth over the last quarter of a century (Rodríguez-Pose, 2017). Underemphasized here is that regional economic growth does not solely involve a direct economic effect, but it is also consists of the narrative of the people. In other words, the idea of living in a declining and lagging-behind region reinforces feelings of discontent itself.

Altogether, Rodríguez-Pose argues that populism took hold not among the poorest of the poor, but in a combination of poor regions and areas that had suffered long periods of decline. Thus, it has been the places that don't matter, not the "people that don't matter", that have reacted. In these areas it has been very often the relatively well-off, those in well-paid jobs or with pensions that heeded the call of populism. Trump supporters in Pennsylvania, Ohio or Michigan are generally better off than Clinton supporters. So the interrelationship between these three effects of economic geography has been different.

2.2.2 Income inequality

In recent decades, the real income of most people in developed Western nations has stagnated or declined; despite substantial economic growth, the gains have almost entirely gone to the top ten percent of the population, largely to the top one percent. Economic inequality has been exacerbated

by growing automation and outsourcing, globalization and growing mobility of capital and labor, the erosion of blue-collar labor unions, neo-liberal austerity policies, the growth of the knowledge economy, and the limited capacity of democratic governments to regulate investment decisions by multinational corporations or to stem the flow of migration (Piketty, 2014). Major differences in local productivity are a primary source of the geography of discontent and they are also a challenge to a country's institutional and governance structures (Mccann, 2019). An increasing body of research shed light to the impact of this growing inequality to societies nowadays. Most notoriously the popular scientific books *The Spirit Level* (2010) and *The Inner Level* (2018) written by Kate Pickett and Richard Wilkinson broad the debate to a wider public. Pernicious effects are found that inequality has on societies: eroding trust, increasing anxiety and illness, (and) encouraging excessive consumption. 11 different health and social problems: physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust and community life, violence, teenage pregnancies, and child well-being, outcomes are significantly worse in more unequal countries, whether rich or poor (Pickett & Wilkinson, 2010).

With respect to the relationship between inequality and political discontent, barely any study has accommodated the effect of inequality on perceived discontent. Notoriously, while others have emphasized the important role for regional inequality studies in current debates about the future of the European project and of the possibility of a Europe of regions rather than a Europe of nation-states (Ballas et al., 2017). Only Inglehart & Norris researched the *economic inequality* perspective: the consequences for electoral behavior arising from profound changes transforming the workforce and society in post-industrial economies as a consequence of growing inequality (2016). They conclude that it would be a mistake to attribute the rise of populism directly to economic inequality alone. Although there might not be a causal effect of inequality on political discontent and populism, this is not to say that there might not be a relationship between the two. It is fair to hypothesize that high levels of inequality, results in a significant amount of health and social problems that increases levels of perceived discontent.

2.2.3 Long-term employment and population change

Dijkstra et al. assess to what extent long-term employment and population decline is a key factor behind the vote for parties opposed to European integration in the most recent national legislative election (2018). Employment and population change is taken as the average annual percentage change in total employment/population at the NUTS3 level. When controlling for a wide range of variables, the authors find that places with population and employment decline are, by contrast, less likely to vote for anti-European political parties.

Change in (un)employment specifically has received much attention in explaining perceived feelings of discontent and voting behavior. However, microdata on current employment status of individuals is often neglected. Only Rooduijn (2018) controlled for the effects of being employed or not to analyze the voter basis of populist political parties. In none of the 15 explored populist political parties a significant relationship is found with populist voting. According to his analysis in total the populist voter does not exist at all.

2.2.4 Cultural backlash theory

The bulk of commentary so far has focused on sources of economic geography. However, according to him, the geographical disparities in voting behavior does not so much reflect the rich against the poor, but rather lagging/declining regions versus more prosperous ones. Gordon typifies this by referring to a research by Inglehart & Norris (2016). These authors use the European Social Survey to research two theories. Firstly, the economic insecurity perspective, which says that support for populism is emphasized by the consequences of profound changes transforming the workforce and society in post-industrial economic, as we have explained above. Secondly, they suggest the 'cultural backlash' thesis. Meaning that the support can be explained as a retro reaction by once-predominant sectors of the population to progressive value change. As such, populism will find more support among those regions holding traditional values and retro norms, including older generation and the less-educated groups left behind by progressive cultural tides. Conclusively, the researchers find more support for the second theory. "It would be a mistake to attribute the rise of populism directly to economic inequality. Populist parties in Europe have been strongly associated with attitudinal positions on a range of cultural values, and only weakly relate to economic insecurity" (Inglehart & Norris, 2016).

In addition to this argument, Brexit was the story mainly about values, economic inequality was not the main driver (Kaufman, 2016). Often it is said that the decision to leave the EU is a protest against modernization and globalization. But this rich versus the poor narrative is far from the truth according to Kaufman. "*Brexit voters, like Trump supporters, are motivated by identity, not economics. Age, education, national identity and ethnicity are more important than income or occupation*" (Kaufman, 2016). Performing statistical analysis on a combination of census- and attitudinal data, he argues that (economic) geography plays way less of a roll than we think due to the ecological fallacy. Aggregate analysis, being used by the proponents of the economic argument, distort the individual relationships and motivations of people within regions. When he performs his research with solely information on regions their economic situation, the model determines about 54% of the voter's right. Whereas, when using data on the values of people within the regions and using that factor to predict the amount of leave voters, Kaufman's prediction rate increases drastically. Key cultural values which

Kaufman (2016) & Inglehart & Norris (2016) identify as relating to voting for populist parties are Euroscepticism, protecting social order, keeping the nation safe, distrust of governance (national and global) and authoritarianism.

2.2.5 The Holy Trinity: age, education and income

Typically, a discontent populist-party voter is framed as being older aged, lower educated and lower paid. In the past this has been termed as the holy trinity of the populist voter (Los et al., 2017).

Without question researchers agree about the differences between individual demographic characteristics and voting behavior associated with the Brexit and national elections in Europe. Generally, the younger and higher educated voted in favor of the remain camp or 'non-populistic' political parties. Whereas, older and lesser educated individuals tended to vote pro leave and in favor of populist political parties (Rodríguez-Pose 2018; Gordon, 2018; Los et al., 2017; Goodwin & Heath, 2016; Inglehart & Norris, 2016; Kaufman, 2016). Education is also frequently thought to be at the root of the localist/cosmopolitan divide that splits anti-establishment and mainstream party voters (Gordon, 2018).

Interestingly, when tracking the voting behavior per educational attainment level over history one can observe a complete turnaround in voting behavior over the last decades. In his research after election results in Europe and the US ranging from the 1950s to 2018, Thomas Piketty (2018) explains a phenomenon which he coins the educational cleavage. Traditionally, in France, the US, the Netherlands, Germany and the UK politics was very much a class-based political conflict. Meaning that societies were highly divided based on level of income, wealth, occupations and education level. In other words, society was highly hierarchical. As such, those at the bottom of the society, possessing few capital and/or income and being lower educated, generally all voted for the leftist labor-, democratic- or socialist parties. On the contrary, the elitist with higher incomes tended to vote for right wing parties.

But then from the 1980's onwards the educational cleavage occurred. The higher educated started to vote for more leftist parties. The right receives its votes from the high income and high wealth elites. This change can be observed in figure 2.3 & 2.4 derived from Piketty (2018). Figure 2.3 illustrates how in France the left vote has changed from being predominantly backed by people with a primary education, towards people being higher educated. Figure 2.4 depicts how the top 10% educated voters increasingly started to vote for left wing parties in relation to the bottom 90% education voters in France, the US and Britain. Rather than voting for right wing parties.

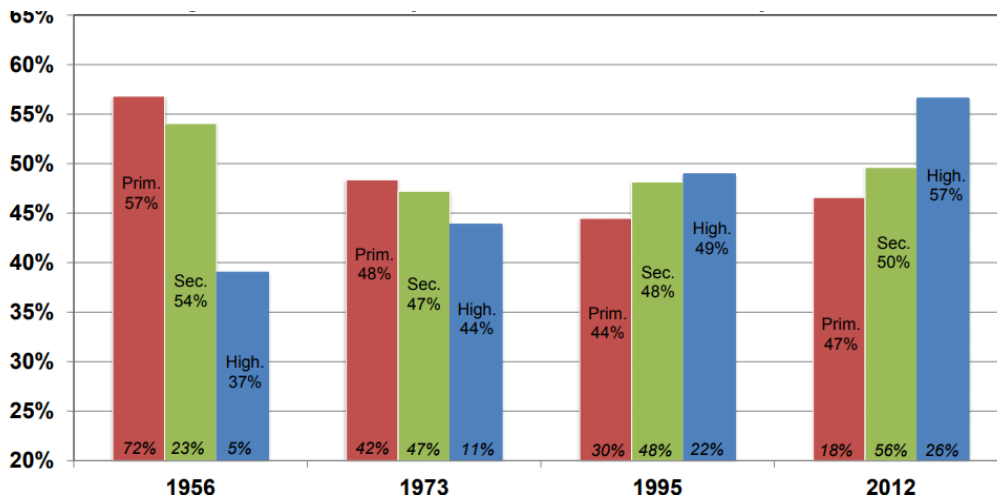


Figure 2.3: Support for leftist political parties per education category (Piketty, 2018)

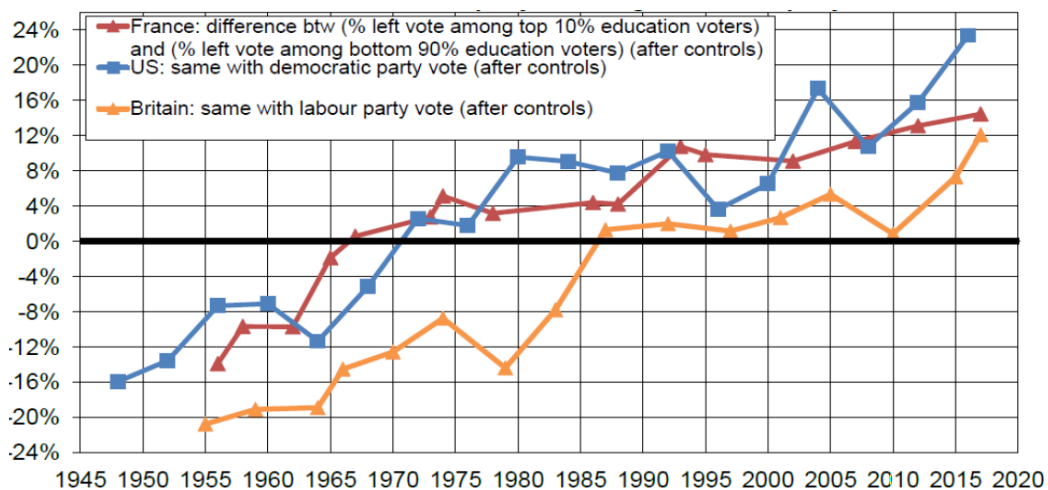


Figure 2.4: Voting in support of leftist political parties by percentiles (Piketty, 2018)

This educational cleavage can contribute to explain rising inequality and the recent rise of populism according to Piketty. As the educational cleavage took place, we now have a political conflict which centers on representation of ‘a multiple elite’ party system. The two governing coalitions alternating in power tend to reflect the views and interests of a different elite. Nowadays, the intellectual elite versus the business elite. Taking the Netherlands as an example, one could argue that the business elite tends to vote for the liberal party (VVD), whereas the intellectual elite tends to vote social-democratic (D66 or Groenlinks). Those at the bottom of society find themselves unrepresented, left-behind and discontent with the current political system representing these elites. Therefore, finding representation by the far-right populist liberty party (PVV).

This elitist argument, nevertheless, needs to be nuanced to a certain degree. Differentiating people by income on the one side and education by other on voting behavior is generalizing in an extreme way, as these two factor often highly correlate (Muller, 2017). Nevertheless, the argument on current politics representing solely the elitist in society can strongly explain the rise of recent populism. As those individuals at the bottom of society are being left behind finding representation on the far right of the political spectrum.

Other microdata on demographical characteristics are largely unstudied. How discontent relates to marital- and health status has never been researched before. This thesis controls for this in its model.

Chapter 3. Methods

In the previous chapters, the research problem and the theoretical background were presented. In this chapter, extensively the used methodology of this research will be explained. Firstly, starting off with exploring the core dataset of this analysis, that is the European Social Survey. Specifically, we will argue how this dataset is used to construct the dependent discontent variable for this research. After having done so, the independent variables will make their entry. It will be elaborated from where they are derived and how reliable they are.

3.1 The European Social Survey

The European Social Survey (ESS) is an academically driven multi-country survey, which has been administered in over 30 countries (European Social Survey, 2016). Its primary aim is to monitor and interpret changing public attitudes and values within Europe and to investigate how they interact with Europe its changing institution. In 1995, the European Science Foundation (ESF) completed its program 'Beliefs in Government' that focused on exploring changing attitudes towards governments across Europe. From a national perspective, this was already done at this point, but a comparative approach across Europe was still missing. In this new program, researchers therefore concentrated on comparisons across countries (Technopolis, 2017). National surveys were generally already quite sophisticated, but it was hard to harmonize them to one unilateral dataset as the way questions were asked differed a lot. To overcome these dilemma's the ESF decided to develop a blueprint for a European Social Survey. As of today, the ESS has the goal to develop a series of European social indicators, including attitudinal indicators. This last goal is being embodied by this thesis research, as it aims is to develop an indicator that captures European discontent. For that purpose, the political attitudes captured in the ESS are key.

For this research, the ESS round 8 edition that has taken place in 2016 is used. The survey covers 23 countries. These countries are set out in table 3.1. Non-European countries such as Russia and Israel are also covered in this dataset. Moreover, Iceland, Norway and Switzerland, countries that are officially not part of the European Union, are also included. On the contrary, some European

countries are missing. These are among others Denmark, Slovakia, Greece, Romania and Bulgaria. The European Union subsidizes the survey partially, but a fair share needs to be financed by the national countries themselves. As some of these countries lack the national financial support, they are not administered in round 8 of the ESS.

In total, the dataset consists of 44.387 respondents including respondents from all regions of a particular country. Depending on each country their organization of the survey, either a NUTS0, NUTS1, NUTS2 or NUTS3 level is attached to the individual. The Nomenclature of Territorial Units for Statistics was established by Eurostat (Kaasa et al., 2013). The ESS data are representative for entire populations. However, some surveys cannot be representative of whole the population with respect to age, gender, sex, education, class and occupation. The ESS covers only the population above 15 years of age. To overcome this barrier, there is weighted data available.

Table 3.1: Countries in the European Social Survey Round 8 (2016)

<i>Country</i>	<i>Election year</i>	<i>Respondents</i>	<i>Member of EU?</i>	<i>Regional Unit</i>
<i>Austria</i>	2013	2010	Yes	NUTS2
<i>Belgium</i>	2014	1766	Yes	NUTS2
<i>Switzerland</i>	2015	1525	No	NUTS2
<i>Czechia</i>	2013	2269	Yes	NUTS3
<i>Germany</i>	2013	2852	Yes	NUTS1
<i>Estonia</i>	2015	2019	Yes	NUTS3
<i>Spain</i>	2016	1958	Yes	NUTS2
<i>Finland</i>	2015	1925	Yes	NUTS3
<i>France</i>	2012	2070	Yes	NUTS2
<i>UK</i>	2015	1959	Yes	NUTS1
<i>Hungary</i>	2014	1614	Yes	NUTS3
<i>Ireland</i>	2016	2757	Yes	NUTS3
<i>Iceland</i>	2016	880	No	NUTS3
<i>Italy</i>	2013	2626	Yes	NUTS2
<i>Israel</i>	2015	2557	No	None
<i>Lithuania</i>	2016	2122	Yes	NUTS3
<i>Netherlands</i>	2012	1681	Yes	NUTS2
<i>Norway</i>	2013	1545	No	NUTS2
<i>Poland</i>	2015	1694	Yes	NUTS2
<i>Portugal</i>	2015	1270	Yes	NUTS2
<i>Sweden</i>	2015	1551	Yes	NUTS3
<i>Slovenia</i>	2014	1307	Yes	NUTS3
<i>Russian Federation</i>	2016	2430	No	None

3.1.1 Principal Component Analysis

Large or massive data sets are increasingly common and often include measurements on many often-similar variables. It is frequently possible to reduce the number of variables while retaining much of the information in the original data set. Principal Component Analysis (PCA) is most likely the best-known and most widely used dimension-reducing technique for doing this. The central idea of PCA is to reduce the dimensionality of a data set in which there are a large number of interrelated variables, while retaining as much as possible of the variation present in the data set (Jolliffe, 2011). The reduction is achieved by transforming to a new set of variables, the principle components, which are uncorrelated, and which are ordered so that the first few retain most of the variation present in the entire original variable. As such, the principal component analysis is a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components (Li & Wang, 2014).

In that light, this research aims to derive a principal component that depicts the degree of discontent of an individual. For that purpose, the degree of discontent is based on a wide variety of statements are interpretable as depicting discontent or either content. In total, there are 30 of such statements found in the European Social Survey. These statements are visible in table 3.2. To clarify, three example statements are taken.

‘Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?’

This statement can be answered on a scale ranging from 0 (you can’t be too careful) until 10 (most people can be trusted). An answer that is closer to 0 is interpreted as a higher level of discontent. When one is distrustful of others, he/she is discontent. Whereas when an answer is given closer to 10, this is interpreted as a more content individual. In the situation that a respondent belief that most people can be trusted, he/she is more content.

“To what extent do you think that [country] should allow people of a different race or ethnic group as most [country’s] people to come and live here”

With respect to this survey question, a respondent can answer on a 0-3 scale. 0 indicates ‘allow many to come and live here’. 3 means ‘allow none’. When a respondent beliefs many should come and live here, the respondent is considered as content. In the situation that he/she beliefs none should be allowed, he/she is considered discontent.

'Imagine there were a referendum in [country] tomorrow about membership of the European Union. Would you vote for [country] to remain a member of the European Union or to leave the European Union?'

This last example is somewhat different from the majority of the 30 statements in that it is not an ordinal-scaled variable. Possible answers to this statement are 1. Remain a member of the European Union, 2. Leave the European Union, 3. Would submit a blank ballot paper, 4. Would spoil the ballot paper, 5. Would not vote, 6. I am not eligible to vote, 7. Refusal or 8. I do not know. With respect to this, and statement and statement 13 & 14 which are similar, only answers 1 and 2 are used. Voting to remain part of the European Union means a content answer. Leave equals discontent.

Again, all 30 statements used in the Principal Component Analysis and their measurement scale can be found in table 3.2. The next step was to rotate the variables as such so that the interpretation meets the content/discontent scale. As such example 2 had to be transformed so that 3 indicates that a country should allow many people to come and live here, and 0 that none are allowed in. Now for all 30 statements a low value depicts discontent and a higher value content.

Lastly, all variables are put into an equal scale. The 0-10 scale is set central here, and statements answered with a different scale are converted into this scale. That means for a 1-5 scale that 1 equals 0, 2 equals 2.5, 3 equals 5, 4 equals 7.5 and 5 equals 10. Similarly, for the binary remain or leave question. Leave equals 0, whereas remain equals 10. This data transformation is required for the PCA to present reliable results.

The 30 statements used in this analysis are manually picked. One can consider including some more of these statements as they can also bring explaining discontent. As an example, one could argue that the statement *"Gay and lesbian couples right to adopt children"*, which is also surveyed in the ESS, also reflects an extent of discontent. Nevertheless, this has not been done. On the contrary, one might argue that when a respondent believes same ethnic groups as the majority in a country should not be allowed is interpretable as less discontent compared to when a respondent believes different ethnic groups as the majority in a country should not be allowed. Hence, more statements could be excluded as they reflect different levels. These limitations are accepted and acknowledged and a benchmark is determined with these 30 statements at which the PCA conducted. Further improvements surely can be made. The central aim of the thesis is to put discontent at the center of the debate. Wishing for the paradigm after the geography of discontent to continue building upon the presented discontent score.

Table 3.2: Statements used in the Principal Component Analysis

ID	Statement/Question	Measurement Scale
1	Most people can be trusted or you can't be too careful	0-10
2	Most people try to take advantage of you, or try to be fair	0-10
3	Most of the time people helpful or mostly looking out for themselves	0-10
4	Political system allows people to have influence on politics	1-5
5	Confidence in own ability to participate in politics	1-5
6	Trust in country's parliament	0-10
7	Trust in the legal system	0-10
8	Trust in the police	0-10
9	Trust in politicians	0-10
10	Trust in political parties	0-10
11	Trust in the European Parliament	0-10
12	Trust in the United Nations	0-10
13	Voted last national election	0=No, 1=Yes,
14	Taken part in lawful public demonstration last 12 months	0=Yes, 1=No
15	How satisfied with life as a whole	0-10
16	How satisfied with present state of economy in country	0-10
17	How satisfied with the national government	0-10
18	How satisfied with the way democracy works in country	0-10
19	State of education in country nowadays	0-10
20	State of health services in country nowadays	0-10
21	European Union: European unification go further or gone too far	0-10
22	Allow many/few immigrants of same race/ethnic group as majority	0-3
23	Allow many/few immigrants of different race/ethnic group from majority	0-3
24	Allow many/few immigrants from poorer countries outside Europe	0-3
25	Immigration bad or good for country's economy	0-10
26	Country's cultural life undermined or enriched by immigrants	0-10
27	Immigrants make country worse or better place to live	0-10
28	How happy are you	0-10
29	How emotionally attached to Europe are you	0-10
30	Would vote for [country] to remain member of European Union or leave	0=leave, 1=remain

3.1.2 After Principal Component Analysis

When performing this specific PCA the population shrinks from 44,387 to 20,186 cases. More than half of the original population in the dataset disappears. The amount of respondents per country are visible in table 3.1. A requirement for PCA is that all cases provide a valid answer for all variables on which the PCA is performed. The largest variable with missing values is variable with ID 30 'Would vote for [country] to remain member of European Union or leave'. 38.6% (17.129) of the total respondents could not answer this question, as their country is not part of the European Union. This decreases the amount of countries to 16. Respondents from Russia, Israel, Iceland, Norway, Switzerland, the United Kingdom and Estonia are left without a value. The signing of the Brexit referendum has already taken place when the round 8 survey of the ESS was conducted. One could wonder why Estonians are left out in this case, this is due to the decision by Estonia to leave the remain/leave vote out of the survey. Apart from this shrinkage of cases, sporadically, respondents do not answer some of the other 30 questions of the PCA. When an individual does not answer one of the 30 questions, the discontent

score is immediately not computed. This further decreases the amount of cases with 11.286 (35.9%). The final amount of cases per country can be seen in Appendix 3.1.

The exact further results with respect to the retrieved amount of components of the PCA will be discussed in the next chapter. For now, this chapter will elaborate on the gathering of other variables to explore the relationship with the discontent score.

3.2 The independent variables

In the second part of the analysis, the relationship is explored with the independent variables presented in chapter 2, the theoretical framework. These independent variables have largely been associated with explaining voting behavior in previous research. In this section, it will be elaborated how these independent variables have been gathered and how the analysis has been conducted. The collection of these economic and demographic variables are outlined in table 3.3 and will be explained.

3.2.1 Political party voted for and opposition against the EU

The ESS asks individuals after the political party they voted for in the latest national election. As an independent variable itself, the national party voted for is not very interesting. Rather, the Chapel Hill Expert Survey (CHES) estimates party positioning on European Integration, ideology and policy issues for national parties in a variety of European countries (CHES, 2018). The survey is conducted by a rich number of political scientist specializing in political parties and European integration. Specifically, for the 2014 survey, 337 experts assessed 268 parties in the EU-28. Another survey was conducted in 2017. The CHES survey specifically presents us with a variable indicating the overall orientation of the party leadership towards European integration. The experts could attribute a grade varying between 1 (strongly opposed) to 7 (strongly in favor) of European integration. The average score is taken as a representation of the party. For this research these scores are combined with the political party voted for by the respondent using the 2014 and 2017 survey. This with the purpose to explore the relationship between opposition to European integration and the level of discontent among individuals in the dataset.

The variable *'party voted for in national election'* is only routed to those who answer 'yes' on *'did you vote the last national election?'*. In sum, 30,815 casted a vote. 9,417 (21,2%) respondents did not. An additional 4,155 votes are considered missing as they were either not eligible to vote (8,3%), refused (0,6%), did not know (,5%) or did not answer (,01%). All national political parties in the latest election are categorized. Also, 'other', 'blanc', 'not applicable', 'refusal', 'don't know' and 'no answer' are optional outcomes. In total to 22,029 respondents a valid CHES score has been designated. About 8,000 party votes could not be combined with a CHES score. Partially, because respondents choose

'other' as an answer. But the largest explanation for this is that some parties do not have a CHES score yet, because the CHES survey does not report a score on a specific party. For instance Emmanuel Macron's 'La Republique en marche' was only established in 2016. At the last election in France (2016, see table 3.1) the party obtained a majority of votes. Unfortunately, no CHES score exists for this party as of today. Hence, a significant amount of French respondents are left without a value.

The share of votes for national parties in the ESS differs quite a lot with the outcome of the national elections. Generally, we see a way larger share of votes for more leftist and pro-European parties. This is not very surprising as one can expect a European survey to be increasingly filled out by proponents of the European Union.

3.2.2 Economic geography

Exploring the relationship between the economic performances and the discontent score is one of the key dimensions of this thesis. Household income is presumably the most important pillar amongst the measurements of economic performances. The ESS reports this by means of the income deciles the total household income of an individual belongs to. The interviewer asks the respondent after their specific household income and, for privacy reasons, a subsequent decile is appointed. In total to 36,445 respondents an income decile is appointed. 7942 (17.9%) do either not know, refuse or provide no answer. In appendix 3.2 the income deciles are set out. In appendix 3.3 one can see the distribution of respondent over these deciles.

In order to derive the long-term economic growth of a region, the average annual real growth of GDP per head between 2008 and 2016 has been calculated. Several sources from Eurostat were used for this calculation. Firstly, the Gross domestic product (GDP) at current market prices by NUTS3 regions are taken. This gives us a wide variety of GDP statistics for the European, national, NUTS 1, 2 and 3 level. The data covers a time period of 2008 till 2017. As for 2017, only 812 out of the 1919 regional units provide a valid answer to the GDP at current market prices. For 2016 more data is available, only two regions are missing. These are two NUTS3 regions in Ireland. For 2008 we encounter 330 cases missing nuts regions for the GDP. These regions accrue to the following countries: France, Netherlands, Lithuania and Poland. Subsequently they are not included into the model. The years in between 2008 and 2016 are deleted from the data set.

Having captured the GDP by NUTS3 regions, the next step is to add the population statistics into the dataset. The average annual population to calculate regional GDP data (per thousand persons) by NUTS-3 regions is taken from Eurostat (Eurostat, 2019b). The names for the regions in both datasets are nearly equal. Necessary adjustments are done. A join is performed on these regions so that population and GDP statistics end up in one file. Subsequently, we divide the GDP value by the

population to find the GDP per head value. The GDP is expressed in million euros, the population statistics per thousands. After transforming these values, in the end we have calculated a variable measuring the GDP per person in 2008 per region and the GDP per person in 2016 per region. The last step is to calculate the average annual real growth of GDP per head for the period 2008 till 2016. This is done by the 'new minus old divided by old' method. The difference between 2008 and 2016 is divided by the 2008 value. This number is multiplied by 100 to find the Real Growth of GDP per head in percentage form. Lastly, this number is divided by 7 to find the average annual real growth of GDP per head 2008-2016.

In total, 28234 respondents have been designated the long-term economic change score. 16153 respondents are missing. This is largely the results as there is no data available on the GDP in 2008 for this specific country (France, the Netherlands, Lithuania and Poland). The total average annual real growth of GDP per head in the calculated regions is 1.75%. The growth rate per country is seen in appendix 3.1. Estonia especially, but also Germany and Sweden stand out. Spain and Italy see a decline of GDP per head. Regionally also significant differences in growth can be observed. The most prosperous development has taken place in Põhja-Eesti in Estonia where also the capital Tallinn is located. The worst performing region is the border region in Ireland. The region bordering with Northern-Ireland indicates a -1.96% decline. Ireland at the country level does not perform so badly at all, largely the result of concentrated GDP growth in the urban areas. Dublin foremost grows annually with about 4.5% over the past 7 years.

Table 3.3: Variables in the OLS regression model

	Label	Level of Measurement	Measurement scale
Discontent Score	The first principal component of the PCA. The level of trust and satisfaction in/with national and European institutions	Individual	Ratio, -3,93 till 3,32 scale
EU Opposition	CHES score of opposition to the European Union designated to the party voted for	Individual (score per party)	Ratio. 0 (opposed) – 7 scale (in favor)
Individual income	The income percentile attributed with the reported household income	Individual	Income Percentiles (10)
Regional Economic Status	GDP per head in 2016	NUTS 1/2/3	Ratio, euros
Regional long-term economic growth	Average annual real growth of GDP per head 2008-2016	NUTS 1/2/3	Ratio, percentages
Inequality level	Country specific Gini coefficient	NUTS0	Ratio, score
Regional long-term employment change	Average regional annual percentage change in total employment in between 2008 and 2016	NUTS1/2/3	Ratio, percentages
Regional long-term population change	Average regional annual percentage change in total employment in between 2008 and 2016	NUTS1/2/3	Ratio, percentages
Age		Individual	Ratio
Gender		Individual	Nominal
Level of Education (ES-ISCED)	Education category according to the International Standard Classification of Education	Individual	Nominal
Occupation status		Individual	Nominal
Marital status		Individual	Nominal
Health status	Self-reported health status	Individual	Ordinal

The last economic component is the economic status of the region. For this the absolute level of the GDP per head in 2016 is taken. This is relatively simple to derive. As with the calculation of the long-term economic growth this is already done. The GDP at current market prices on the NUTS3 level are taken and divided by the population number. Again, the regional GDP per head in 2016 is joined to the NUTS regions presented in the ESS data file.

33,003 respondents are attributed with the GDP per head level. 11,384 respondents are missing as they live in regions that have not been given an economic status level. The average GDP per head is 31,3456 in all regions taken together. In appendix 3.1 the country level averages are depicted. Norway has the highest absolute GDP level, whereas Hungary scores lowest. Regionally, Hungarian NUTS3 region Nograd with a €4,953 GDP per head per year scores lowest. The wealthiest region is Dublin with €79.010 GDP per head per year.

3.2.3 Inequality

There are several metrics available to measure the level of inequality in places. The Gini coefficient will be used in this research, but other options would have been the 20:20 ratio, Palma ratio, Hoover index or the Galt score. Availability was the key reason to use Gini coefficients, as Gini is the most frequently used inequality index. Eurostat presents Gini coefficients on the country level (Eurostat 2019c). It measures the extent to which the distribution of equivalised disposable income after social transfers deviates from a perfectly equal distribution. It is a summary measurement of the cumulative share of equivalised income accounted for by the cumulative percentages of the number of individuals. The value ranges from 0 (complete equality) to 100 (complete inequality). The coefficient per country is taken and joined to the ESS data.

3.2.4 Employment and Population

As to calculate the long-term employment change, employment statistics for the all NUTS levels are derived from Eurostat (Eurostat, 2019d). Eurostat has this data for the years 2008 till 2016. This data depicts the amount of working people in a particular region. In order to compute the average annual employment change in between 2008 and 2016 the following steps are taken. Firstly, the absolute difference is calculated between 2008 and 2016. Subsequently that amount is divided by the total employment in 2008 times 100%. This gives us the real growth rate of employment over this period. Thereafter, this number is divided by seven to find the annual average employment change between the years 2008 and 2016. The scores are joined to the ESS data.

For France, Netherlands, Poland and Slovenia there is no data available for 2008, neither there is for 2009 till 2014. The total employment over the 2008 – 2016 period grew with an average of 0.2%. Respondents living in these countries are being ignored. Lithuania has a similar problem, also no data for 2008. But there was data for 2010. So with respect to the Lithuanians, 2010 is used as the

benchmark. The difference between 2010 and 2016 is divided by the data of 2008 x 100%. This number is divided by 5.

In total the long-term employment change has been calculated for 30,076 respondents. 14,311 are missing. In appendix 3.4 the country level performances can be observed. Lithuania on yearly average employment has been growing with 1.29%. The country indicating the biggest decrease of employment is Spain. On a regional level, Principado de Asturias in the Northwest of Spain saw the sharpest decrease with -2.32%. Employment in the Hungarian region Szabolcs-Szatmár-Bereg has been growing the most with 3.04% due to an abundance of low-cost semiskilled labor in the area.

Long-term population change has been calculated in a similar fashion as the long-term employment change. The population statistics from Eurostat are taken for 2008 and 2016 and divided by 7. For France, Lithuania, the Netherlands and Poland data for 2008 is lacking. Country level population change is reflected in appendix 3.4. Norway saw the sharpest increase of population. Whereas Hungary shrank the most. The Oslo region increased the most (15.6%). Kirde-Eesti in Estonia decreased the most (-10.4%).

3.2.5 Demographic characteristics

The last variables in the model consist of various demographic indicators. These are age, gender, occupation, marital status and self-reported health status. The ESS has assembled these statistics on individual basis with the survey. Age and gender is considered as straightforward demographic information and no further comments will be made.

Occupational status is checked by the ESS by several questions after the main activity conducted in the past 7 days by the respondent. In appendix 3.5 a table is shown depicting the main activities. Dummy variables are created for each activity with paid work set as the reference category. Only 133 respondents are missing due to refusal, don't know or no valid answer has been given. The frequencies for marital status are shown in appendix 3.6. Subsequently 4 dummies are created for each category. The reference category is legally married. Educational status is individually asked and subsequently aggregated towards a comparative level using the International Standard Classification of Education (ISCED). Dummies are created with the 'less than lower secondary' category as the reference category. Appendix 3.7 shows the frequency distribution for educational attainment. Lastly, the self-reported health status is derived by asking "*How is your health in general? Would you say it is very good, good, fair, bad, or, very bad?*" Appendix 3.8 indicated the frequencies for each category.

3.3 Regression analysis

By means of Ordinary Least Squares (OLS) regression the relationship between discontent and the economic and demographic indicators is explored. This method tells us something about the level of

correlation between them. It is not the purpose to proof causal relationships between these variables as this is not even realistic to do. Income level will never solely explain the discontent perceived. So rather, the OLS regressions indicate what happens with the perceived level of discontent among Europeans when certain economic and demographic indicators vary. In that sense, this research aims to say something about what makes individuals and places more content compared to other individuals and places.

The OLS regression is performed five stages. In the first stage the economic indicators of the region are introduced. Meaning the individual income, the regional economic status and the regional long-term economic growth. In the second stage, population and employment change make their entry. In the third, age, gender and educational attainment are introduced. In the fourth, the rest of demographic indicators (occupational status, marital status and health status) are added and lastly in stage five, inequality and EU opposition. The total regression model can be formulated in the following way

$$Discontent16 = \alpha + \beta1ECON + \beta2EMP\&POP + \beta3DEM + \beta4OPPO\&INQ + \varepsilon$$

where *discontent16* indicates the discontent score created based on the ESS 2016 round 8 dataset, α denotes the constant, $+ \beta1ECON$ stands for the economic indicators, $\beta2EMP\&POP$ the regional employment and population change, $\beta3DEM$ represent the demographic specifications of the Europeans, $\beta4OPPO\&INQ$ the anti-EU opposition and country level inequality and lastly ε the error term

OLSI used 12,784 observations. This number decreases until 8,702 in OLS V. With OLS regression all variables in the model (table 3.3) need to have a valid value. If at least one of these values is left out, the observation will not be accounted for in the regression mode. As a result of this maneuver, Europeans from France, the Netherlands, Poland, Slovenia are not included in this statistical model.

Chapter 4. Empirical Results

In this section, all model results are presented and discussed. First, it will be argued what being discontent in this research actually entails. Afterwards, the regression results explore the relationship between the discontent score and various explanatory variables, foremost economic values at the individual and regional level, but also several demographic indicators, are presented.

4.1 Being Discontent

Based on the description of the Principal Component Analysis in Section X, the following results are retrieved. The PCA is conducted on 20.111 Europeans. The Kaiser-Meyer-Oylin measure of sampling adequacy (KMO) is .914. This statistic varies between 0 and 1. When closer to 1, this indicates that patterns of correlations are relatively compact and that factor analysis should yield distinct and reliable factors (Field, 2013). A .914 KMO can be considered as 'marvelous' according to Hutcheson & Sofroniou (1999). Seven components are retrieved in from the PCA based on the Kaiser's criterion that only the components with an eigenvalue above 1 are included. These seven components in total explain 62.6% of the variance. The exact percentage of variance explained and the combined eigenvalue are visible in table 4.1. Label names are attached to the components based on the loadings per variable. In table 4.2 the rotated factor, loadings are displayed on which these labels are based. Factor loadings are a gauge of the substantive importance of a variable to a factor component. Stevens (2002) recommends interpreting factor loadings with an absolute value greater than .4. A .4 factor loading means the particular variable explains 16% of the variance of the variable. Bold and underlined are those loadings that are higher than .4. Following the .4 logic, the PCA derives three meaningful components.

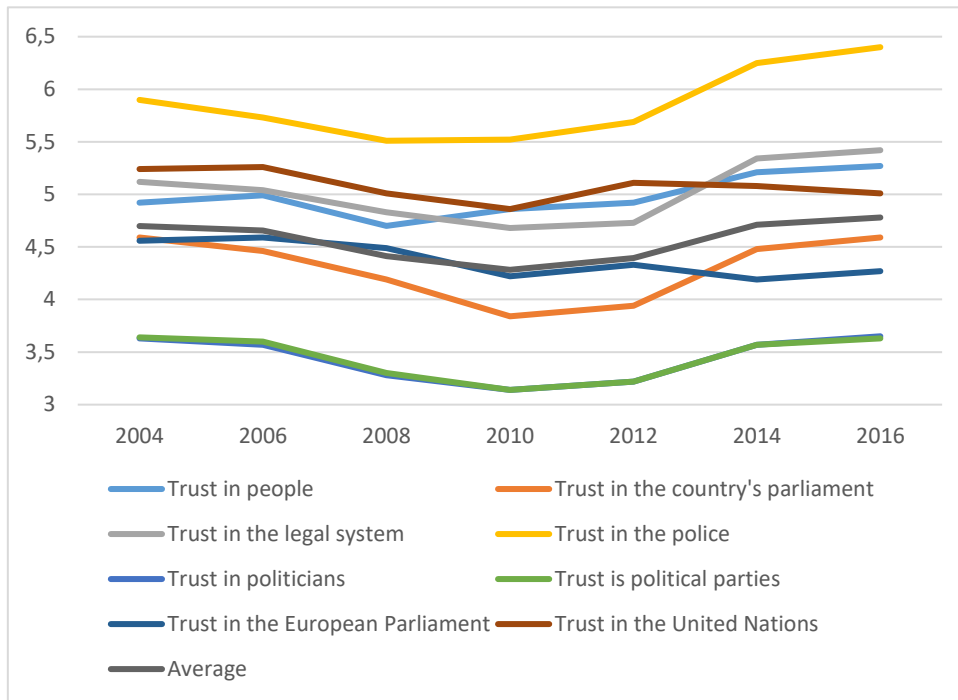
The first principal component explains 29.442% of the variance in all 30 variables and has an eigenvalue of 8.833. Fair amounts of loadings exceed the .4 level. Within this component, the element of trust clearly stands out in the highest factor loadings. Five variables have a loading above .7. In other words, the first component has a lot to do with these values. These five values are *trust in the country's parliament, the legal system, politicians and political parties* and *satisfaction with the way democracy works in a country*. In addition, *trust in the European Union* can be added to this list with a loading of .671. It is apparent how trust of respondents in the different national and European institutions clearly come out on top. Institutional trust therefore seems to be the crucial driver among the 30 variables that underpin discontent. In other words, trust seems to be an underlying element of discontent.

Table 4.1: Components derived from the Principal Component Analysis

Component	Variance explained	eigenvalue
'Discontent'	29,442	8,833
Anti-Immigration	10,986	3,296
Life Satisfaction	5,821	1,746
Component 4	4,580	1,374
Component 5	4,334	1,300
Component 6	4,015	1,204
Component 7	3,334	1,030

Early work by Easton (1975) framed institutional trust as core in defining and measuring political support. Dijkstra et al. (2018) also gave attention to this element of trust being core in explaining European discontent. They argued that the increase in the vote for parties opposed to EU integration is, in part, a reflection of changing public opinion. Specifically, because in 2004 only 28% of the population aged 15 and over did not trust the EU. This share rose extremely to 47% in 2012, and dropped back a bit to 39% in 2018. Nevertheless, the share of population distrusting the EU increased by more than 20% points. The fact that trust is now correlating so highly with the score, underlines this changing public opinion.

As trust is of vital importance to the discontent indicator, it becomes an interesting aspect to see how trust has been developing over the past years in the ESS. The graph underneath gives a solid idea of the trajectory of trust in people and institutions. The trust level is measured on a scale ranging from 0 (no trust) to 10 (complete trust). A first noteworthy observation of the graph would be the absolute low levels of trust in both people and institutions. The only exception to this would be the trust in the policy, which distant themselves from all others. Taking a closer look at the trajectory over time, it becomes apparent how most levels of trust have been following a similar line. Trust seems to drop from 2004 until 2010, and increase thereafter until 2016. Comparing the year 2010 with 2016, we see that all trust levels have actually been increasing quite rapidly. On average, the score increases 0.5 point from 4.28 until 4.78. The only exception to this latest trend indeed appears to be trust in the European Parliament. Trust in the European Parliament has been swinging up and down around the 4.3 grade since 2010. Comparing this with the findings by Dijkstra et al. (2018), the ESS has seen a similar swing in rising and decreasing distrust levels, but this has taken a way less extreme form as indicated by Dijkstra et al. (2018).



A second layer indicated by the factor loadings in the first principal component can be described as 'institutional satisfaction'. The extent of satisfaction *with the way democracy works in a country, the national government and the present state of the economy* respectively score a loading of .717, .658 and .637.

The second principal component paints a different picture. It becomes apparent how the variables on immigration all represent high value loadings. The statements *allow many/few immigrants of same race/ethnic group as majority, allow many/few immigrants of different race/ethnic group from majority, allow many/few immigrants from poorer countries outside Europe, immigration is bad or good for country's economy, country's cultural life undermined or enriched by immigrants and immigrants make country worse or better place to live* score all above a factor loading of .5, whereas all other loadings tend to be close to 0. This makes us conclude that the second principal component measures the anti-immigration stance by Europeans. Interestingly, the results underpin that race or ethnicity does not play a role in their stance to immigration. The factor loadings for the statements *allow many/few immigrants of same race/ethnic group as majority* and *allow many/few immigrants of different race/ethnic group from majority* are much alike.

The third component only consists of two factor loadings above the .4 threshold. Obviously, as each subsequent component is less capable of explaining more variance within the 30 variables. These

Table 4.2: Factor loadings per identified component

STATEMENT/QUESTION	'DISCONTENT	ANTI- IMMIGRATION	LIFE SATISFACTION	COMPONENT 4
MOST PEOPLE CAN BE TRUSTED OR YOU CAN'T BE TOO CAREFUL	<u>0,554</u>	-,007	,310	-,346
MOST PEOPLE TRY TO TAKE ADVANTAGE OF YOU, OR TRY TO BE FAIR	<u>0,521</u>	,015	,372	-,340
MOST OF THE TIME PEOPLE HELPFUL OR MOSTLY LOOKING OUT FOR THEMSELVES	<u>0,483</u>	-,058	,320	-,331
POLITICAL SYSTEM ALLOWS PEOPLE TO HAVE INFLUENCE ON POLITICS	<u>0,515</u>	-,052	-,143	-,211
CONFIDENCE IN OWN ABILITY TO PARTICIPATE IN POLITICS	<u>0,238</u>	,168	,004	-,344
TRUST IN COUNTRY'S PARLIAMENT	<u>0,763</u>	-,277	-,185	-,110
TRUST IN THE LEGAL SYSTEM	<u>0,7</u>	-,281	-,066	-,087
TRUST IN THE POLICE	<u>0,542</u>	-,245	,068	,004
TRUST IN POLITICIANS	<u>0,757</u>	-,352	-,217	-,151
TRUST IN POLITICAL PARTIES	<u>0,74</u>	-,344	-,224	-,162
TRUST IN THE EUROPEAN PARLIAMENT	<u>0,671</u>	-,180	-,372	,094
TRUST IN THE UNITED NATIONS	<u>0,625</u>	-,138	-,298	,056
VOTED LAST NATIONAL ELECTION	0,196	,033	,133	-,167
TAKEN PART IN LAWFUL PUBLIC DEMONSTRATION LAST 12 MONTHS	-0,054	-,244	,032	,290
HOW SATISFIED WITH LIFE AS A WHOLE	<u>0,43</u>	-,059	<u>,638</u>	,287
HOW SATISFIED WITH PRESENT STATE OF ECONOMY IN COUNTRY	<u>0,637</u>	-,249	,156	,107
HOW SATISFIED WITH THE NATIONAL GOVERNMENT	<u>0,658</u>	-,341	-,095	,107
HOW SATISFIED WITH THE WAY DEMOCRACY WORKS IN COUNTRY	<u>0,717</u>	-,239	,011	,084
STATE OF EDUCATION IN COUNTRY NOWADAYS	<u>0,473</u>	-,302	,173	,189
STATE OF HEALTH SERVICES IN COUNTRY NOWADAYS	<u>0,465</u>	-,211	,217	,124
EUROPEAN UNION: EUROPEAN UNIFICATION GO FURTHER OR GONE TOO FAR	<u>0,416</u>	,296	-,219	<u>,345</u>
ALLOW MANY/FEW IMMIGRANTS OF SAME RACE/ETHNIC GROUP AS MAJORITY	<u>0,45</u>	<u>,629</u>	,013	-,060
ALLOW MANY/FEW IMMIGRANTS OF DIFFERENT RACE/ETHNIC GROUP FROM MAJORITY	<u>0,49</u>	<u>,700</u>	,008	-,057
ALLOW MANY/FEW IMMIGRANTS FROM POORER COUNTRIES OUTSIDE EUROPE	<u>0,438</u>	<u>,693</u>	-,020	-,046
IMMIGRATION BAD OR GOOD FOR COUNTRY'S ECONOMY	<u>0,588</u>	<u>,516</u>	-,056	,060
COUNTRY'S CULTURAL LIFE UNDERMINED OR ENRICHED BY IMMIGRANTS	<u>0,587</u>	<u>,546</u>	-,025	,031
IMMIGRANTS MAKE COUNTRY WORSE OR BETTER PLACE TO LIVE	<u>0,608</u>	<u>,515</u>	-,040	,051
HOW HAPPY ARE YOU	0,386	,024	<u>,624</u>	,339
HOW EMOTIONALLY ATTACHED TO EUROPE ARE YOU	<u>0,427</u>	,023	-,067	,339
WOULD VOTE FOR [COUNTRY] TO REMAIN MEMBER OF EUROPEAN UNION OR LEAVE	0,392	,181	-,206	<u>,380</u>

two loadings both indicate life satisfaction. The former asks the respondents after *the satisfaction with life as a whole*. The second inquires after *the level of happiness*.

Subsequently there are four other components derived from the analysis. However, these components do not consist of factor loadings so that a meaningful label can be attached. If any, than one could argue that component 4 largely reflects opposition to EU integration, as the highest loadings are find at *European Union should go further or has gone too far and would vote for my country to leave the EU*. However, as these loadings do not exceed the .4 limit, the component is neglected. As also, component 5, 6 and 7 do not reach the .4 benchmark we conclude that three meaningful components have been derived from the PCA

Altogether, the first principal component embodies largely the level of trust and satisfaction among individuals in national and European institutions. This first component explains the most part of the variance within the 30 selected variables. From here on forwards, this research labels this component the 'discontent score' and will be used as the central dependent variable in this research. A valid score is constructed for 20,111 Europeans from 16 different countries. The score ranges between -3.34 for the most content and 3.6 for the most discontent European. The PCA is conducted in such a way that the mean is exactly zero. The standard deviation is 1.00.

Before continuing with exploring the relationship between economic and demographic indicators with it, the discontent score is mapped in figure 4.1 termed the New Geography of Discontent. The Northern European countries, the Netherlands, Germany, Sweden and Finland appear to be content places. In France, Italy and Hungary the most discontent regions are to be found. Vast regional differences can be observed as well. Estonia, Ireland and Belgium are evident countries of these phenomena as all three consist of more content and discontent regions. The most discontent region is Friuli-Venezia Giulia in Italy with a 1.644 average, followed by Komárom-Esztergom and Somogy in Hungary. Hungary and Italy fill up the top 10 of most discontent regions. On the other side of the spectrum, the most content region is the Kronobergs län region in Sweden with a 1.57 average, second is Marijampolės apskritis in Lithuania and Åland in Finland. In total, Finland and Sweden dominate the top 10 of most content places.

This research will now move towards explaining the individual differences within these regions by various economic and demographic indicators associated with research after voting behavior.

The New Geography of Discontent

Discontent Score

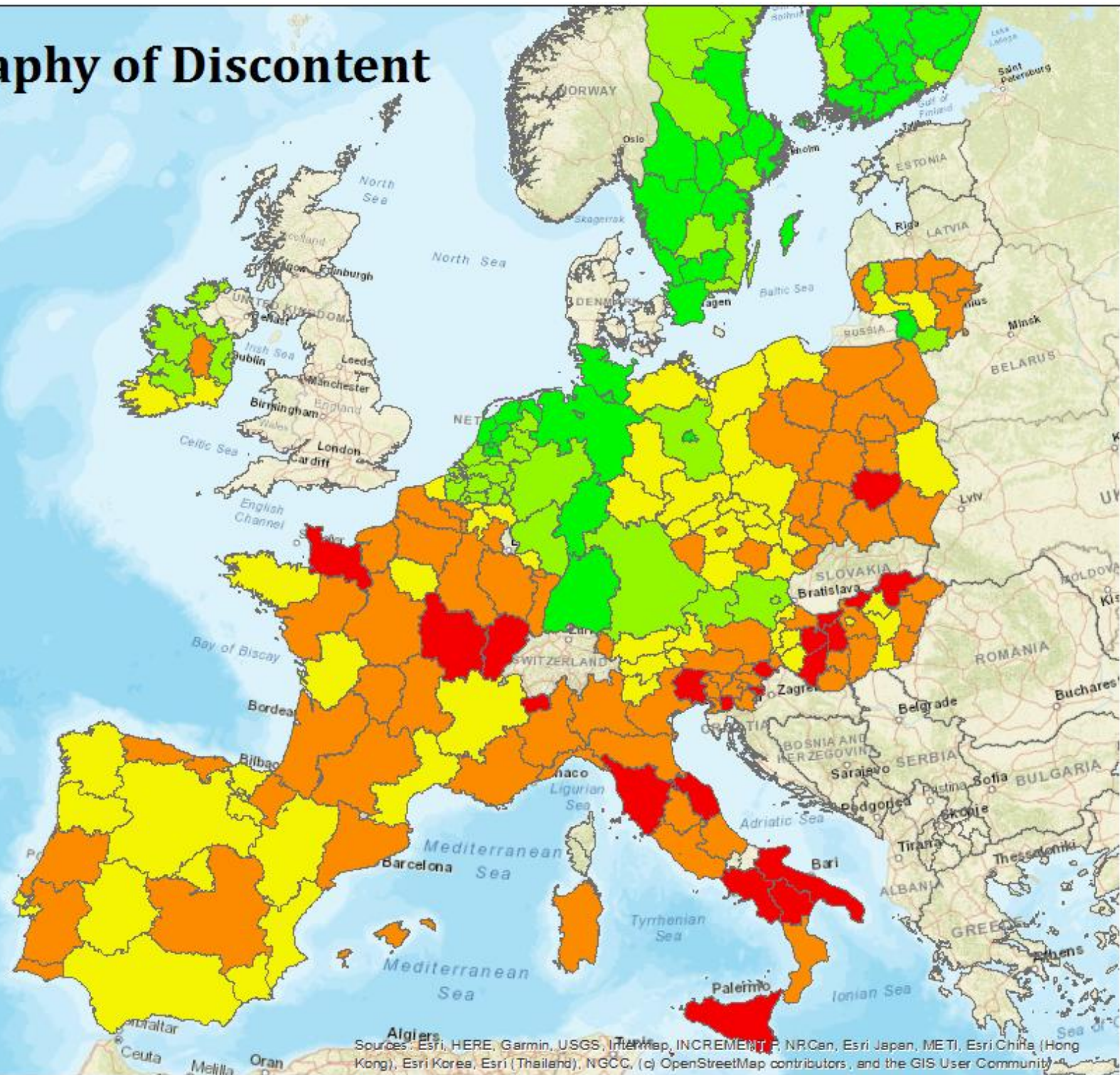
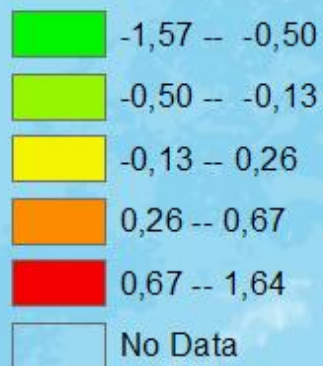


Figure 4.1: Level of perceived discontent in European regions

4.2 What drives being discontent?

After having explained the development of the discontent indicator and having argued what the key factors are that it captures, now we will move to see how specific economic and demographic variables relate to this discontent score. Chapter 2 constituted several variables that have been associated with the geography of discontent in previous research. Within the research after the geography of discontent topic, this is the first that endorses a micro perspective in its empirical analysis. As previous, the emphasis has always laid at explaining voting shares by regional indicators. Uniquely, this research centralizes the individual European, and includes individual data on economics and demographics to explain what drives discontent in Europe. We now will present by means of regression analysis explore the relationship between these variables and our measurement of discontent. At first, we will commence exploring the economic argument.

4.2.1 The economic geography of discontent

The results of the regression are presented in table 4.3. From this table it can be derived that poorer individuals, in poorer regions, with a poorer economic development over the past 10 years, are significantly more discontent compared to wealthier individuals and places. All the way ranging from model specification 1 to specification 5 it becomes apparent that the coefficient of individual income, GDP per head per region and the average annual GDP growth rate is always negative and very strongly significant. Even when this effect is being controlled for by all other variables in OLS V. Therefore, economic geography matters greatly for explaining perceived feelings of discontent in Europe.

The strongest relationship between these three economic indicators is found at the individual income level. Moving one income percentile up means that on average the discontent score decreases with .033. The average regional income is depicted in figure 4.2. As such, it can be argued that Europeans become less discontent when they earn more money. This all falls well in line with what studies by Los et al. (2017), Rodriguez-Pose (2017) and Dijkstra et al. (2018). have emphasized before. To further analyze the effect of individual income, in a later stage the different income percentiles are introduced in the model. Guilluy (2018) argued that not the poorest of citizens are the once that revolt. The core of the political protests consists of hardworking laborers who reach the end of the month with great financial difficulty. The findings oppose the middle-class revolt argument. It are the lower income percentiles that indicate the highest levels of perceived discontent.

Europeans living in poorer regions with a poorer economic development are significantly more discontent than wealthier regions. Respectively, an additional €1,000 increase in the GDP per head would decrease the discontent score with .010. Similarly, a 1% increase in the average annual real GDP per head growth lowers the discontent score with .042. Economic status and the economic

development trajectory of a region as such determine largely the geography of discontent. This perfectly resonates with Los et al. (2017) who found that economic geography dominated the observed voting pattern. Dijkstra et al. (2018) argued as well righteously that places that have experienced long-term, above average economic growth tend to vote less for parties opposed to European integration compared to those that have undergone economic decline. This indeed is also true for our findings. The long-term trajectory of economic change in GDP shows a negative significant coefficient.

However, contrary to Dijkstra et al. (2018) the coefficient of the economic status of a region is significantly negative. This suggests that when controlled for the long-term economic trajectory of a region, a higher GDP per head leads to less discontent. This directly opposes Dijkstra's et al. (2018) who find a positive coefficient at this place. According to them, "once the economic trajectory of a place is controlled for, it seems that the anti-system vote is no way linked to where poor people live. Richer places vote more for parties opposing European integration than poorer ones" (p.15).

More researchers have found this result between regional wealth and discontent. Los et al. (2017) already underlined this relationship, as *local economic conditions were the single most important factor driving the pattern of voting* (p. 788). Arnorsson & Zoega (2016) indicated that regions with a lower GDP per capita make it more likely that voters would like the UK to leave the EU.

The OLS analysis on the economic elements in table 4.3 say nothing about the direction of causality. It could be argued that discontent among Europeans undermines people their income, the GDP per head and subsequently the long-term annual GDP growth. Nevertheless, this seems to be quite unlikely, as also underlined by Dijkstra et al. (2018) "*the ascent of anti-system parties is a recent phenomenon in Europe and as, until recently, their brush with power been very limited, their capacity to affect regional economic performance [and income] in the past could be considered as almost negligible* (p.16)".

4.2.2 Inequality is key

Inequality at the country level hugely affects discontent levels. That becomes clear after introducing the country level Gini-coefficient into the regression model under specification OLS V. Each increase of the Gini-coefficient with .01 increases the discontent score of .045. The Gini coefficients per country are set out in figure 4.3. This importance of inequality lies in very much in line with research conducted by Kate Pickett and Richard Wilkinson in (amongst other) their two books *The Spirit Level* (2009) and *The Inner Level* (2018). The researchers explore the effects of inequality on societies the world over. It convincingly associates inequality with a wide range of contemporary social and health problems. That levels of discontent are higher in countries that are more unequal indisputably follows with their logic.

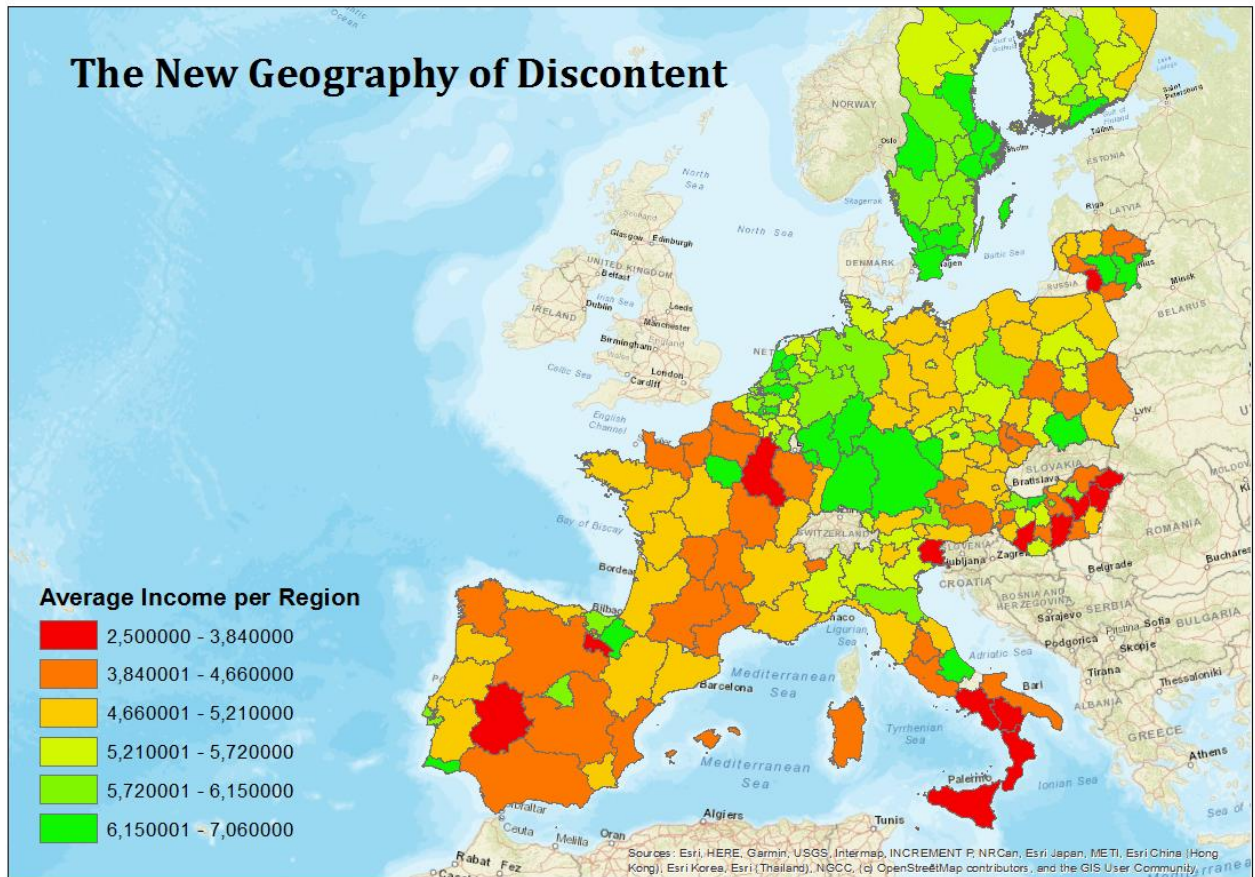


Figure 4.2: Mean income percentile per European region

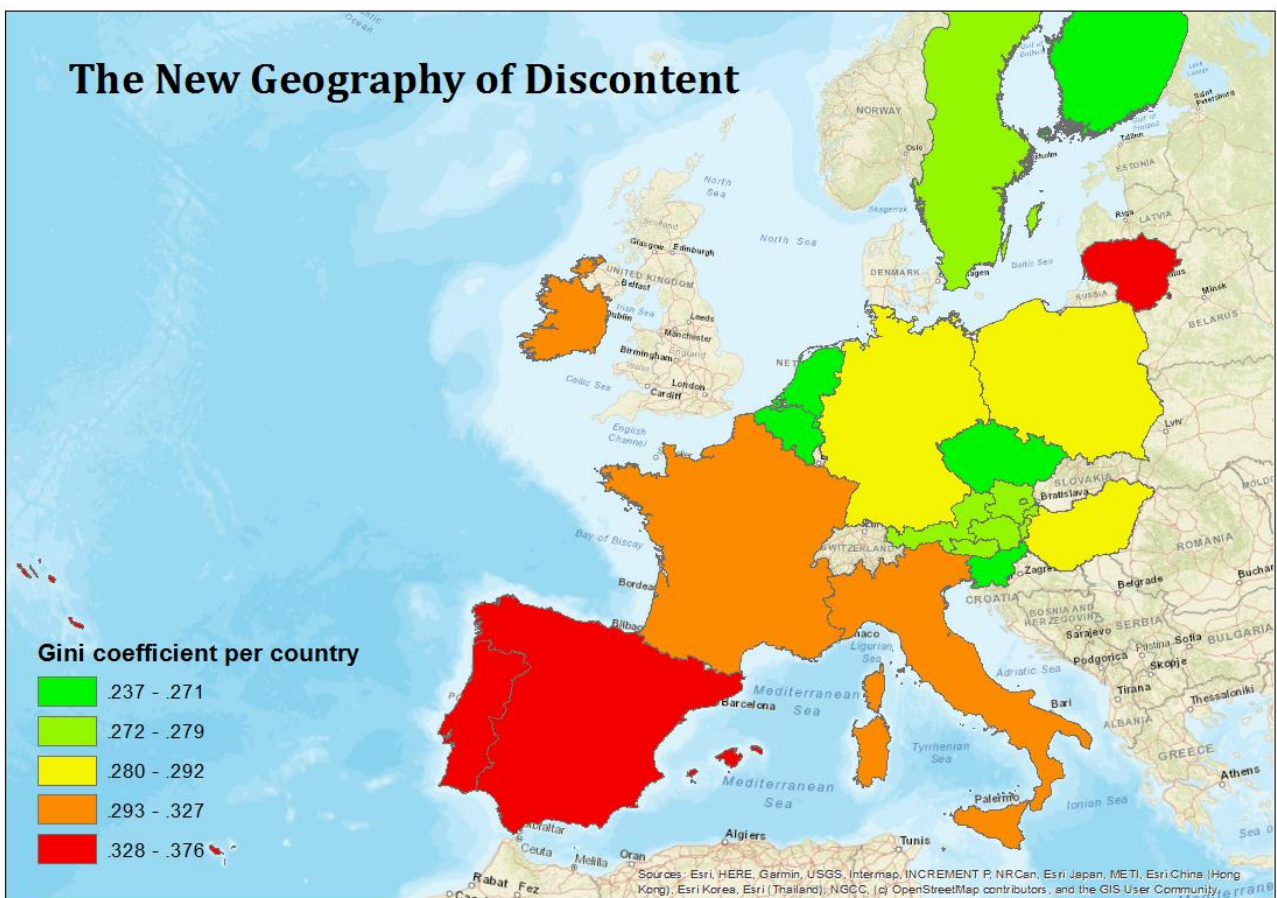


Figure 4.3: Gini coefficient per country

4.2.3 Regional employment and population change

A lack of local employment opportunities is said to be an important driver of anti-EU voting (Algan et al. 2017). This is an argument often heard in the popular media. With respect to employment change in this research, controversially, it becomes clear that in regression specification II until IV employment change is related to increasing discontent. When controlling for the anti-EU opposition score attributed to the party voted for by the individual the effect of change in amount of jobs in a region nullifies. In other words, this research does not find evidence for a relationship between job growth and discontent.

Another defined prominent driver of anti-EU vote is population decline (Dijkstra et al., 2018). In the regression model, population change follows the same logic as employment change. In specification II until IV an increasing population means less discontent. Whereas when including the EU opposition variable, the effect disappears. In their analysis Dijkstra et al. concludes that the effect of population change matters much less. This can also be concluded for this model. Nevertheless, when including population change in a specification it must be highly considered what path causality is taken. As it might very well be that people leave to live in place having many discontent inhabitants.

4.2.4 The Holy Trinity

Besides the economic dimension, this research opens up new information on the link between demographical information and associated levels of discontent at a micro level.

Typically, a discontent populist-party voter is framed as being older aged, lower educated and lower paid. This in the past has been termed as the holy trinity of the populist voter (Los et al., 2017). With respect to income, it is concluded that indeed lower income leads to more discontent.

Older Europeans are less discontent controlling for all other variables in the model than younger Europeans. Controlling for all other variables in the model, discontent levels decrease with .003 with every additional life year. Dijkstra et al. (2018) in their research after EU opposition in over 63,000 European electoral districts concluded that ageing seems to be a more marginal factor in the anti-establishment vote than other factors. In order to explore the effect of age, the researchers take the share of population 65 and over per region and regress this against the share of vote for parties opposed to European integration. It might very well be that due to the ecological level of their research, the individual age effects are being neglected. Hence, as this research puts forward microdata in the same circumstances, it makes sense that younger people are increasingly discontent.

With respect to the Brexit vote, younger people tended to vote remain whilst older voted leave. 27% in between 18 and 24 years old voted in support of leave opposed to 60% for those aged over 65 (Becker, 2017). Brexit provided indeed a different picture of the relationship between age and

voting behavior. With respect to the latest national elections, the relationship between age and voting behavior tends to be blurred. Age significantly negatively related to populist voting in 6 out of 15 cases in a European study after national populist voting (Rooduijn, 2018). This research backs up this particular finding.

With respect to the level of education, higher educated indeed seem to be significantly less discontent compared to the reference group 'less than lower secondary'. Differences with the 'lower secondary' and 'lower tier upper secondary' are substantial, but from there on there are significant effects in education. With foremost the difference with tertiary university education standing out. This backs up the idea that educational attainment can be seen as a critical determinant of populist views. Rooduin (2018) in his exploration of 11 different Western European national elections says there is no significant proof that the voter bases of populist parties consist of individuals who are more likely to hold a lower education. Whereas controversially, in six of these 11 countries lower schooling resonates significantly with a higher likeliness of voting for a populist political party.

Conclusively, the Holy Trinity is fulfilled in two of its three conditions. Age is the most significant outlier as rather than having barely any effects (Dijkstra et al., 2017) or older tend to vote more in favor of leave (Becker, 2017), the model argues that when controlling for all other variables in the model when age increases people become less discontent.

4.2.5 Occupational, marital and health status

The last three demographical component used in the statistical model are the occupational, marital and health status of the Europeans.

Significant results appear in relation to the occupational status of individuals. Most noteworthy, in specification OLS IV and OLS V it is depicted unemployment whilst looking for a job relates to higher levels of perceived discontent compared to doing paid work. This relationship has never been constituted before, and opposes the findings of Rooduijn (2017) with respect to unemployment not leading to more likeliness to vote for a populist political party. In case of unemployment, but not actively looking for a job discontent scores seem to be significantly lower. Similarly, when being in education or retired this relationship is found as well. Being permanently sick or disabled and staying at home doing housework leads to higher levels of discontent.

With respect to marital status, other statistically interesting results start to appear. Separated or divorced individuals are significantly more discontent compared to married individuals. Whereas, those in a registered civil union, widows or single appear to be as discontent as married people.

Another very strong relationship is observed with respect to health status. When health status is deteriorating, discontent increases significantly. This difference is already obvious between those who consider their health status as 'very good' and 'good'.

4.2.6 Opposition to the EU

In order to control the link between discontent and EU opposition this element is introduced into the model under OLS V. The political party voted for by the respondent has been attributed the CHES score of European opposition. As a verification, it indeed appears that voting for a political party more opposed the EU is linked with higher levels of discontent.

Table 4.3: Correlation matrix for OLS regression model variables

DEP. V: DISCONTENT SCORE		OLS I	OLS II	OLS III	OLS IV	OLS V
INDIVIDUAL INCOME		-,084*** (0,000)	-,084*** (0,000)	-,051*** (0,000)	-,046*** (0,000)	-,034*** (0,000)
REGIONAL ECONOMIC STATUS		-,017*** (0,000)	-,012*** (0,000)	-,011*** (0,000)	-,010*** (0,000)	-,010*** (0,000)
REGIONAL LONG-TERM ECONOMIC GROWTH		-,035*** (0,000)	-,067*** (0,000)	-,058*** (0,000)	-,059*** (0,000)	-,043*** (0,000)
LONG TERM POPULATION CHANGE			-,018*** (0,000)	-,015*** (0,000)	-,012*** (0,000)	-0,001 (0,742)
LONG TERM EMPLOYMENT CHANGE			,054*** (0,000)	,044*** (0,001)	,038** (0,004)	,058*** (0,000)
AGE				-,002*** (0,001)	-,003*** (0,000)	-,002*** (0,027)
GENDER <i>REF=MALE</i>				,029* (0,083)	0,033** (0,048)	0,031* (0,088)
EDUCATION	Lower secondary			,063* (0,098)	,062* (0,098)	,019 (0,654)
<i>REF=LESS THAN LOWER SECONDARY</i>	Lower tier upper secondary			-,096** (0,010)	-,086** (0,033)	-,066* (0,112)
	Upper tier upper secondary			-,255*** (0,000)	-,204*** (0,000)	-,182*** (0,000)
	Advanced vocational			-,413*** (0,000)	-,385*** (0,000)	-,317*** (0,000)
	Lower tertiary (BA)			-,551*** (0,000)	-,506*** (0,000)	-,426*** (0,000)
	Upper tertiary (MA)			-,616*** (0,000)	-,588*** (0,000)	-,512*** (0,000)
OCCUPATION <i>REF=PAID WORK</i>	In education				-,454*** (0,000)	-,359* (0,000)
	Unemployed, looking for a job				,146*** (0,001)	,148 (0,006)
	Unemployed, not looking for a job				,173** (0,022)	-,217 (0,020)
	Permanently sick or disabled				,092 (0,124)	,163** (0,016)
	Retired				-,124*** (0,000)	-,087*** (0,005)
	Community or military service				,413 (0,220)	,300 (0,419)
	Housework				-,052 (0,150)	,088* (0,029)
	Other				,023 (0,791)	,025 (0,795)
MARITAL STATUS <i>REF=MARRIED</i>	Registered civil union				-,041 (0,681)	-,200* (0,076)
	Separated				,195*** (0,001)	,155** (0,024)

	Divorced					,089*** (0,004)	,099*** (0,003)
	Widowed					-,068* (0,065)	-,068* (0,085)
	Never married or civil union					,003 (0,887)	-,009 (0,719)
HEALTH	Good health					,165*** (0,000)	,174*** (0,000)
<i>REF=VERY GOOD HEALTH</i>	Fair health					,328*** (0,000)	,305*** (0,000)
	Bad health					,517*** (0,000)	,477*** (0,000)
	Very bad health					,672*** (0,000)	,577*** (0,000)
EU OPPOSITION							-,132*** (0,000)
INEQUALITY LEVEL							0,045*** (0,000)
OBSERVATIONS		12784	12005	11955	11995		8702
R-SQUARED		0,139	0,131	0,176	0,210		0,246
ADJUSTED R-SQUARED		0,139	0,130	0,175	0,208		0,244
F TEST		688,347	360,367	162,245	106,232		88,607
***P<0,01							
**P<0,05							
*P<0,1							

Chapter 5. Conclusion, Discussion and Policy Considerations

This last chapter discusses the results presented in the previous chapter. First the main conclusions on the two research questions will be presented. Thereafter, the results will be reflected upon the existing literature with a special mentioning to how regional policy potentially can reduce levels of discontent.

5.1 The New Geography of Discontent

It has been argued that within academia one should break away from equalizing discontent to voting behavior. Too much this tendency is present among current academics. The populist narrative that the popular people are alienated from, in this circumstance, the educated elite is being reinforced in this manner. Therefore, the proposition is made for this research, but also future research after the geography of discontent, to shed a more sophisticated light into the why Europeans are discontent and how this phenomena is measured. The main goal in this thesis therefore was to construct a composite indicator that captures the level of perceived feelings of discontent among Europeans. By Performing a Principal Component Analysis on the political opinions and attitudes expressed in the ESS Round 8 (2016) dataset it is found that trust in and satisfaction of individuals with national and European institutions is the core driver behind the developed discontent indicator. The geography associated with this discontent indicator has been termed the New Geography of Discontent.

By means on an OLS regression this thesis went further to explore the relationship between various economic and demographic indicators with the discontent score. It has foremost found that economic geography is core in explaining why people perceive discontent. The largest effects are found with respect to the individual income level. It has been theorized before that not the poor individuals, but the declining middle-class are those who are lacking behind (Guilluy, 2019). Similarly, Rodriquez-Pose pleaded that populism took hold not among the poorest of the poor, but in a combination of poor regions and areas that had suffered long periods of decline. In these areas it has been very often the relatively well-off, those in well-paid jobs or with pensions that heeded the call of populism (2018). This thesis does not support these theories. Rather poorer individuals in poorer places that have been declining for a long period report higher levels of discontent compared to wealthier individuals and places.

Inequality is found to correlate substantially with discontent. The exploration of inequality was done on the country level. Whereas it has been known that intraregional or intra-urban inequality is typically greater than interregional inequality (OECD, 2018b). A more sophisticated exploration of the effect of different levels of inequality on discontent would be a valuable addition for future research. Intraregional and intra-city inequality still exists even in countries with very low interregional inequality. Nevertheless, it is interregional inequality that is now fundamentally challenging many of our national institutional and governance systems (McCann, 2019).

A missing variable that potentially could explain a larger part of the variance in the OLS regression model would be an urban/rural component. The geography of discontent follows the New Economic Geography (NEG) logic in many ways. More centrally located regions are better able to enjoy the increasing returns to scale compared to more peripheral areas. Hence, the peripheral areas are potentially more lagging behind and more likely to voice political discontent. A density component (Rooduijn, 2017) or a distance to capital component (Dijkstra et al., 2018) could control for this effect in this thesis. Due to technical circumstances, this has not been done. Nevertheless, education is also frequently thought to be at the root of the localist/cosmopolitan divide that splits anti-establishment and mainstream party voters (Gordon, 2018). Education in that fashion indicated a strong relationship with the discontent score. Having a university degree makes you way more likely to be less discontent.

5.2 Policy considerations

The results in this thesis have foremost highlighted that income levels and income distribution matters greatly for the perceived levels of discontent among Europeans. Therefore, when thinking of policy considerations at either the national or the European level, extra attention should be to the consequences as to the distribution of wealth over people and places.

With respect to the UK, McCann emphasizes the likelihood that the enormous imbalances within the UK are heavily related to the over-centralized national governance system (McCann, 2016) and a significant devolution and decentralization of the UK national–subnational governance system would appear to be a key priority for helping to counter the geography of discontent. Similarly, within Europe such imbalances are present. Rethinking the organization of governance systems forms a key priority to restore the imbalances accentuated by the geography of EU discontent as well.

Also, development policies for lagging and declining areas offer most realistic and viable options. Policies aimed at maximizing the development potential of each territory, solidly grounded in theory and evidence, combining people-based with place-based approaches and empowering local stakeholders to take greater control of the future (Iammarino et al., 2017).

References

- Agnew, J. & Shin, M. (2017). Spatializing populism: Taking politics to the people in Italy. *Annals of the American Association of Geographers* 107(4): 915-933.
- Al Jazeera. (2019) France: 'Yellow vest' protesters keep up pressure on Macron. Accessed via <https://www.aljazeera.com/news/2019/01/france-yellow-vest-protesters-pressure-macron-190105135132125.html>.
- Algan, Y., Guriev, S., Papaioannou E. & Passari, E. (2017) The European Trust Crisis and the Rise of Populism. *Brookings Papers on Economic Activity* 309-400.
- Arnorsson, A., & Zoega, G. (2016). *On the causes of Brexit* (Working Papers in Economics and Finance No. 1605). London: Birkbeck College. Retrieved from <http://www.bbk.ac.uk/ems/research/wp/2016/PDFs/BWPEF1605.pdf>
- Aslam, A. & Corrado, L. (2012). The geography of well-being. *Journal of Economic Geography* 12: 627-649.
- Ballas, D., Dorling, D. & Hennig, B. (2017). Analysing the regional geography of poverty, austerity and inequality in Europe: a human cartographic perspective. *Regional Studies* 51(1): 174-185.
- Becker, S., Fetzer, T., & Novy, D. (2016, October). Who voted for Brexit? A comprehensive district-level analysis. Retrieved from <http://ukandeu.ac.uk/research-papers/who-voted-for-brexit-a-comprehensive-district-level-analysis/>
- Canovan, Margeret. 1999. "Trust the People! Populism and the Two Faces of Democracy." *Political Studies* 47:2–16.
- CHES (2018). Mission. Accessed on 2-5-2019 via <https://www.chesdata.eu/>.
- Craig, S.C. (1980). The Mobilization of Political Discontent. *Political Behavior* 2(2): 189-209.
- Crossley, Nick (1995) 'Body Techniques, Agency and Intercorporeality: On Goffman's Relations in Public', *Sociology* 29(1): 133–49.
- Easterlin, R.A. (1974). Does economic growth improve the human lot? Some empirical evidence. In P. A. David, M. W. Reder (eds) *Natioans and Households in Economic Growth: Essays in Honor of Moses Abramowitz*, pp. 89-125. New York, London: Academic Press.
- Easton, D. A Re-Assessment of the Concept of Political Support. *British Journal of Political Science* 5(4): 435-457.
- Elchardus, M. & Spruyt, B. (2014) Populism, Persistent Republicanism and Declinism: An Empirical Analysis of Populism as a Thin Ideology. *Government and Opposition* 51(1): 111-133.
- European Commission (2017) Standard Eurobarometer 86 public opinion in the European Union. Available at: <https://bit.ly/2JZXIT8>. Accessed 5-6-2019.
- European Social Survey (2016). Documentation Report. *Norwegian Centre for Research Data*.

Eurostat (2019a). Gross domestic product (GDP) at current market prices by NUTS 3 regions. Available from: https://ec.europa.eu/eurostat/web/products-datasets/-/nama_10r_3gdp. Accessed 4-04-2019.

Eurostat (2019b). Average annual population to calculate regional GDP data (thousand persons) by NUTS 3 regions. Available from: https://ec.europa.eu/eurostat/web/products-datasets/-/nama_10r_3popgdp (Accessed 4-04-2019).

Eurostat (2019c). *Gini coefficient of equivalised disposable income*. Available from: <https://ec.europa.eu/eurostat/web/products-datasets/-/tessi190> (Accessed 5-04-2019).

Eurostat (2019d) *Employment (thousand persons) by NUTS 3 regions*. Available from: https://ec.europa.eu/eurostat/product?code=nama_10r_3empers&mode=view (Accessed 4-04-2019)

Eurostat (2019e) *Population on 1 January by age group, sex and NUTS 3 region*. Available from: https://ec.europa.eu/eurostat/product?code=nama_10r_3empers&mode=view (Accessed 4-04-2019)

Dijkstra, L., Poelman, H. & Rodriguez-Pose, A. (2018). The Geography of EU discontent. *Working Papers European Union*.

Field, Andy (2013) *Discovering statistics using IBM SPSS Statistics: and sex and drugs and rock 'n' roll*, 4th edition. Sage, London. ISBN 9781446249178.

Ford, R. & Goodwin, M. (2017). Britain after Brexit: A nation divided. *Journal of Democracy*, 28(1), 17-30.

Fox, E. Lester, V., Russo, R., Bowles, R.J. Pichler, A. & Dutton, K. (2000) Facial Expressions of Emotion: Are Angry Faces Detected More Efficiently? *Cognition & Emotion*, 14(1): 61-92.

Franko, P. (2019). Yellow Vests Week 34 Of Paris Demonstrations. *News Pressed*. Accessed on the 9th of July via <https://www.newspressed.com/live-yellow-vests-week-34-of-paris-demonstrations-85233>.

Gamson, W. (1968) *Power and Discontent*. Homewood: Dorsey.

Goodwin, M.J. & Heath, O. (2016). The 2016 Referendum, Brexit and the Left Behind: An Aggregate-level Analysis of the Result. *The Political Quarterly* 87(3): 323-332.

Gordon, I.R. (2018). In what sense left behind by globalisation? Looking for a less reductionist geography of the populist surge in Europe. *Cambridge Journal of Regions, Economy and Society* 11 (1): 95-113.

Guilluy, C. (2019). *Twilight of the Elites, Prosperity, the Periphery and the Future of France*. Yale University Press: Yale.

Hawkins, K.A. (2009), 'Is Chávez populist?: Measuring populist discourse in comparative perspective'. *Comparative Political Studies* 42(8): 1040–1067.

Hobolt, S.B. (2016). The Brexit vote: a divided nation, a divided continent. *Journal of European Public Policy*, 23(9), 1259-1277.

- Holmes, M. (2004) The Importance of Being Angry: Anger in Political Life. *European Journal of Social Theory* 7(2): 123-132.
- Hutcheson, G., & Sofroniou, N. (1999). *The multivariate social scientist*. London: Sage.
- Iammarino, S., Rodríguez-Pose, A., and Storper, M. (2017) Why regional development matters for Europe's economic future. *Working Papers of the Directorate-General for Regional and Urban Policy*, WP 07/2017. Brussels: European Commission.
- Inglehart, R.F. and Norris, P. (2016) 'Trump, Brexit and the Rise of Populism: economic have-nots and cultural backlash'. *Faculty Research Working Paper* 16 – 026, Harvard Kennedy School, August.
- Ivaldi, G. (2018). Populism in France. In Stockemer, D. *Populism around the world: a comparative perspective*. Springer 27-48.
- Jennings, W., Stoker, G. & Twyman, J. (2016). The Dimensions and Impact of Political Discontent in Britain. *Parliamentary Affairs* 69: 876-900.
- Jolliffe I. (2011) Principal Component Analysis. In: Lovric M. (eds) *International Encyclopedia of Statistical Science*. Springer, Berlin, Heidelberg
- Joseph Rowntree Foundation. (2016). *Brexit vote explained: Poverty, low skills and lack of opportunities*. York: Joseph Rowntree Foundation
- Kaasa, A., Vadi, M. & Varblane, U. (2013) European Social Survey as a source of new cultural dimensions estimates for regions. *International Journal of Cross Cultural Management* 13(2): 137-157.
- Kaufman, E. (2016) It's NOT the economy, stupid: Brexit as a story of personal values. *The London School of Economics and Political Science*. Accessed via <http://blogs.lse.ac.uk/politicsandpolicy/personal-values-brexit-vote/>.
- Le Point (2018). Prix à la pompe: la part du brut, la part des taxes. Accessed via https://www.lepoint.fr/automobile/prix-a-la-pompe-la-part-du-brut-la-part-des-taxes-16-11-2018-2271841_646.php.
- Lees, C. (2018). The 'Alternative for Germany': The rise of right-wing populism at the heart of Europe. *Politics* 38(3):
- Li, C. & Wang, B. (2014). *Principle Component Analysis*. Springer
- Lichfield, J. (2018). ANALYSIS: The savage violence in Paris was not a protest, it was an insurrection. *The Local*. Published on the 3rd of December 2018. Accessed via <https://www.thelocal.fr/20181202/analysis-the-savage-violence-in-paris-was-not-a-protest-it-was-insurrection>
- Los, B., Mccan, P., Springford, J. & Thissen, M. (2017). The mismatch between local voting and the local economic consequences of Brexit. *Regional Studies* 51(5): 786-799.
- Lyman, P. (2004). The Domestication of Anger The Use and Abuse of Anger in Politics. *European Journal of Social Theory* 7(2): 133-147.

McCann (2019): Perceptions of regional inequality and the geography of discontent: insights from the UK, *Regional Studies*.

Moscato, M. S. (1999). Measuring the Experience, Expression and Control of Anger in Latin America: The Spanish Multi-Cultural State-Trait Anger Expression Inventory. *Interamerican Journal of psychology* 33(2): 29-48.

Müller, J.W. (2017). *What is Populism?* First Edition. Pennsylvania: Penguin Press.

Mudde, C. (2004), 'The populist Zeitgeist'. *Government and Opposition* 39(3): 541–563

Nardo, M. & Saisano, M. (2009). OECD/JRC Handbook on constructing composite indicators. Putting theory into practice. *European Commission - Joint Research Centre. Institute for the Protection and Security of the Citizen. Unit of Econometrics and Applied Statistics*.

Organization for Economic Co-Operation and Development (2018a). A Broken Social Elevator? How to promote social mobility. Accessed 28-6 via <https://www.oecd-ilibrary.org/docserver/9789264301085-en.pdf?expires=1544019025&id=id&accname=ocid177247&checksum=C84546FCBD091FE661F2EF2D80CBA76A>

Organisation for Economic Co-operation and Development. (2018b). Divided cities: Understanding intra-urban inequalities. Paris: OECD. Accessed 1-17-2019 via <https://www.oecd.org/publications/divided-cities-9789264300385-en.htm>

Pickett, K. & Wilkinson, R. (2010). *The Spirit Level: Why More Equal Societies Almost Always Do Better*. Penguin Books: London.

Pickett, K. & Wilkinson, R. (2018). *The Inner Level: How More Equal Societies Reduce Stress, Restore Sanity and Improve Everyone's Well-being*. Penguin Books: London.

Piketty, T. (2014). *Capital*. Bellnap Press: Cambridge.

Piketty, T. (2018). *Brahmin Left vs Merchant Right: Rising Inequality & the Changing Structure of Political Conflict*. Paris: Paris School of Economics.

Polk, Jonathan, Jan Rovny, Ryan Bakker, Erica Edwards, Liesbet Hooghe, Seth Jolly, Jelle Koedam, Filip Kostelka, Gary Marks, Gijs Schumacher, Marco Steenbergen, Milada Vachudova and Marko Zilovic (2017). "Explaining the salience of anti-elitism and reducing political corruption for political parties in Europe with the 2014 Chapel Hill Expert Survey data," *Research & Politics* (January-March): 1-9.

Rodriguez-Pose, A. (2018). The revenge of places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society* 11(1): 189-209.

Rooduijn, M., van der Burg, W. & de Lange, S.H. (2016). *Expressing or fuelling discontent? The relationship between populist voting and political discontent*. Elsevier 43: 32-40.

Spielberger, C. D. (1988). Manual for the State-Trait Anger Expression Inventory. Odessa, FL: *Psychological Assessment Resources*.

Spruyt, B., Keppens, G. & Van Droogenbroeck, F. (2016) Who Supports Populism and What Attracts People to It? *Political Research Quarterly* 69(2): 335-346.

Stevenson, B., Wolfers, J. (2008). Economic growth and subjective well-being: reassessing the Easterlin paradox. *Brookings Papers on Economic Activity*, 1: 1-87.

Jager, K. (2018). Volgens Christophe Guilluy weet de elite het diep van binnen al: ze legt het af tegen het populisme. Trouw

Rodrik, D. (2018). Populism and the economics of globalization. *Journal of International Business Policy*, 1(1):12-33.

Rooduijn, M. and T. Akkerman (2017), 'Flank attacks: populism and left-right radicalism in Western Europe,'', *Party Politics* 23(3): 193–204.

Rooduijn, M., S.L. De Lange and W. van der Brug (2014), 'A populist Zeitgeist? Programmatic contagion by populist parties in Western Europe', *Party Politics* 20(4): 563–575.

Rooduijn, M. (2018). What unites the voter bases of populist parties? Comparing the electorates of 15 populist parties. *European Political Science Review* 10(3): 351-368. `

Technopolis (2017). Comparative impact study of the European Social Survey (ESS) ERIC.

Van Haute, E., Pauwels, P. & Sinardet, D. (2018) Sub-state nationalism and populism: the cases of Vlaams Belang, New Flemish Alliance and DéFI in Belgium. *Comperative European Politics* 16(6): 954-975.

Veenhoven R. & Hagerty, M. (2006). Rising happiness in nationals 1946-2004: a reply to Easterlin. *Social indicators Research*, 91: 5-21.

Wetenschappelijke Raad voor het Regeringsbeleid (2017). *De val van de middenklasse? Het stabiele en kwetsbare midden*. Den Haag.

World Inequality Report (2018).

<https://wir2018.wid.world/files/download/wir2018-full-report-english.pdf>

Zoega, G. (2016). On the causes of Brexit: Regional differences in economic prosperity and voting behaviour. VoxEU, September 1. Retrieved from <http://voxeu.org/article/brexit-economicprosperity-and-voting-behaviour>.

Appendices

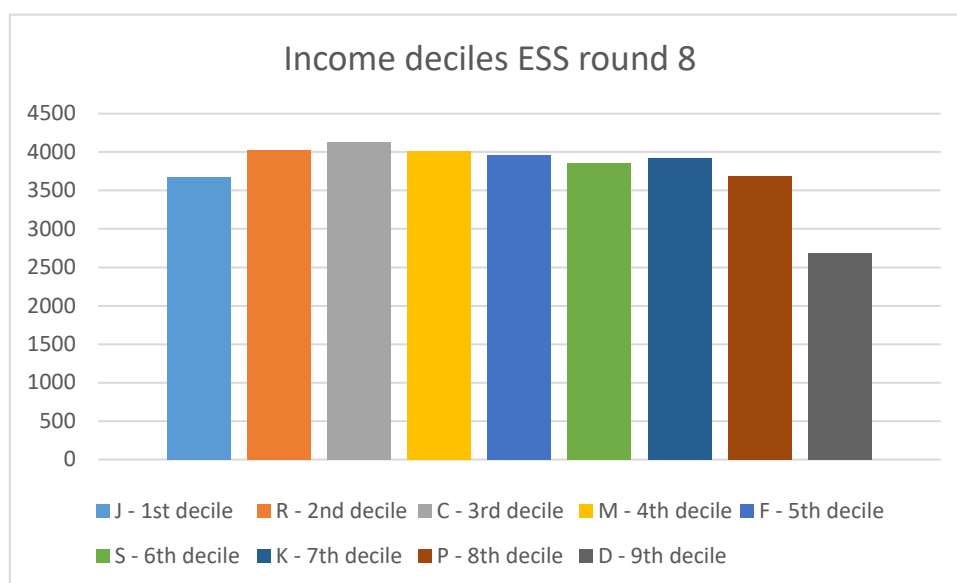
Appendix 3.1: Country specific information with valid discontent score

COUNTRY	RESPONDENTS	DISCONTENT	MEAN INCOME PERCENTILE	LONG- TERM GROWTH IN %	ECONOMIC STATUS	GINI COEFFICIENT
AUSTRIA	1362	-0,0319	4,827495	2,2355	40,6403	,279
BELGIUM	1397	-0,1134	5,757594	1,9333	37,9395	,260
CZECHIA	1410	0,2998	5,298957	1,1385	16,700	,245
GERMANY	2136	-0,3258	5,861406	3,1392	36,2576	,291
FINLAND	1544	0,1763	5,729315	1,2379	39,5825	,253
FRANCE	1407	-0,642	4,855626	N.A.	31,977	,293
HUNGARY	813	0,3338	4,708861	1,7944	8,8186	,287
IRELAND	1743	0,3837	4,376826	1,5076	44,6989	,306
ITALY	1397	-0,1708	4,757314	0,12	27,8724	,327
LITHUANIA	1013	0,6318	5,294578	N.A.	N.A.	,376
NETHERLANDS	1151	0,2104	5,993271	N.A.	40,7876	,271
POLAND	881	-0,497	5,249608	N.A.	10,6344	,292
PORTUGAL	901	0,3195	5,307760	1,1174	18,0182	,335
SPAIN	1031	0,1941	4,701058	0,1956	23,738	,341
SLOVENIA	877	-0,6262	5,099462	0,57	18,9903	,237
SWEDEN	1048	0,5437	6,298197	2,913	43,7442	,280

Appendix 3.2: Income percentiles defined by the European Social Survey (2016)

CARD 56				
YOUR HOUSEHOLD INCOME				
	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
J	Less than €40	Less than €150	Less than €1800	J
R	€40 to under €70	€150 to under €300	€1800 to under €3600	R
C	€70 to under €120	€300 to under €500	€3600 to under €6000	C
M	€120 to under €230	€500 to under €1000	€6000 to under €12000	M
F	€230 to under €350	€1000 to under €1500	€12000 to under €18000	F
S	€350 to under €460	€1500 to under €2000	€18000 to under €24000	S
K	€460 to under €580	€2000 to under €2500	€24000 to under €30000	K
P	€580 to under €690	€2500 to under €3000	€30000 to under €36000	P
D	€690 to under €1150	€3000 to under €5000	€36000 to under €60000	D
H	€1150 to under €1730	€5000 to under €7500	€60000 to under €90000	H
U	€1730 to under €2310	€7500 to under €10000	€90000 to under €120000	U
N	€2310 or more	€10000 or more	€120000 or more	N

Appendix 3.3: Cases over income percentiles



Appendix 3.4: Country specific information on long-term employment and population change

COUNTRY	LONG-TERM EMPLOYMENT CHANGE	LONG-TERM POPULATION CHANGE
AUSTRIA	0,866030817	5,0112
BELGIUM	0,692521746	5,5846
CZECHIA	0,181024267	1,3276
GERMANY	0,83145742	1,3228
ESTONIA	-0,491228263	-1,7665
SPAIN	-1,588742027	0,9666
FINLAND	-0,332561798	3,303
FRANCE	N.A.	N.A.
UNITED KINGDOM	0,894929031	5,8554
HUNGARY	1,155804821	-4,3841
IRELAND	-0,557430118	5,3731
ITALY	-0,35203101	2,1562
LITHUANIA	1,291567406	N.A.
NETHERLANDS	N.A.	N.A.
NORWAY	0,850999854	9,8227
POLAND	N.A.	N.A.
PORTUGAL	-1,220631061	-2,3049
SWEDEN	0,892303833	6,6101
SLOVENIA	N.A.	1,8023

Appendix 3.5: Frequency distribution main activity ESS 2016

MAIN ACTIVITY	FREQUENCY	PERCENTAGE
PAID WORK	23153	52,3
EDUCATION	3464	7,8
UNEMPLOYED, LOOKING FOR JOB	1590	3,6
UNEMPLOYED, NOT LOOKING FOR JOB	653	1,5
PERMANENTLY SICK OR DISABLED	1159	2,6
RETIRED	10964	24,8
COMMUNITY OR MILITARY SERVICE	78	0,2
HOUSEWORK, LOOKING AFTER CHILDREN, OTHERS	2766	6,3
OTHER	427	1
TOTAL	44254	100

Appendix 3.6: Frequency distribution marital status ESS 2016

MARITAL STATUS	FREQUENCY	PERCENTAGE
LEGALLY MARRIED	21711	49,9
IN A LEGALLY REGISTERED CIVIL UNION	443	1
LEGALLY SEPARATED	648	1,5
LEGALLY DIVORCED/CIVIL UNION DISSOLVED	3912	9
WIDOWED/CIVIL PARTNER DIED	3756	8,6
NONE OF THESE	13039	30
TOTAL	43509	100

Appendix 3.7: Frequency distribution educational attainment ESS 2016

EDUCATION CATEGORIES	FREQUENCY	PERCENTAGE
ES-ISCED I , LESS THAN LOWER SECONDARY	3861	8,7
ES-ISCED II, LOWER SECONDARY	7388	16,7
ES-ISCED IIIB, LOWER TIER UPPER SECONDARY	7153	16,2
ES-ISCED IIIA, UPPER TIER UPPER SECONDARY	8720	19,7
ES-ISCED IV, ADVANCED VOCATIONAL, SUB-DEGREE	6275	14,2
ES-ISCED V1, LOWER TERTIARY EDUCATION, BA LEVEL	4760	10,8
ES-ISCED V2, HIGHER TERTIARY EDUCATION, >= MA LEVEL	6013	13,6
OTHER	88	0,2
TOTAL	44258	100

Appendix 3.8: Frequency distribution self-reported health status ESS 2016

HEALTH STATUS	FREQUENCY	PERCENTAGE
VERY GOOD	10553	23,8
GOOD	18500	41,7
FAIR	11779	26,6
BAD	2883	6,5
VERY BAD	613	1,4
TOTAL	44328	100