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The Impact of Welfare Regime on Social Trust in Europe

A Multilevel Investigation

Master's thesis in Political Science

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Abstract

Achieving a high level of social trust is a desirable goal for most countries, since social trust has been considered a key driver of progress, and often goes hand in hand with cooperation and successful political performance. Social trust is basically a measure of how much confidence one has in strangers. While a lot of research has been undertaken in order to examine the benefits of social trust, less attention has been paid to its determinants. The purpose of this master's thesis is to shed some light on this issue. There are mainly two broad schools of thought related to social trust. The first school emphasises that social trust is something that is influenced by individual characteristics and experiences. However, it has also been argued that in addition to individual particularities, the structure of the society at large might have an impact, which is the main idea behind the second school of thought. By means of multilevel modelling, and by using data from five waves (2002-2010) of the European Social Survey (ESS), we will be able to study the effect of both individual as well as contextual factors on social trust simultaneously. One of the main aims of this master's thesis is to explore the link between welfare regime and social trust. By using an extended version of Esping-Andersen's (1990) threefold welfare regime typology, we will investigate whether welfare regime could explain some of the variation in social trust among European citizens. Our results confirm that it is reasonable to continue analysing European countries grouped into the five different welfare regimes as indicated by our study (social democratic, conservative, liberal, Mediterranean, and post-communist). The main finding of this master's thesis is that even when controlling for a number of other factors, the social democratic welfare regime still has a very high level of social trust compared with the four other regime types. As a possible explanation for this, we highlight the differences among the various welfare regimes concerning access to welfare benefits (policy design) and the various forms/degrees of stratification that this in turn creates within society. In addition to welfare regime, our study also demonstrates that a number of individual-level variables should be viewed as important determinants of social trust.

Acknowledgements

This master's thesis is the end result of my two years of study at the Norwegian University of Science and Technology (NTNU). It is with mixed feelings that I now turn in my last work as a student. While I am relieved that several months of hard work finally is over, it will be sad to leave Dragvoll and say goodbye to all the people that I have met here during my two years as a master's degree student. I am not exaggerating when I say that my stay at NTNU has truly provided me with great insight into the vast amount of interesting and important topics that the field of Political Science has to offer.

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Any remaining errors in this master's thesis are solely my own responsibility.

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1) Introduction

Achieving a high level of social trust is a desirable goal for most countries, since social trust has been considered a 'key driver of progress' (Morrone et al. 2009: 3) and often goes hand in hand with good political performance by "enabling better functioning of public institutions and increasing capacity for collective action" (OECD 2011: 90). Uslaner (2000/2001: 569) has described trust as 'the chicken soup of social life', since it "reputedly brings us all sorts of good things – from a willingness to get involved in our communities (…) to satisfaction with government performance, to making daily life more pleasant" (ibid.). Social trust is basically a measure of how much confidence one has in strangers, or as Morrone et al. (2009: 3) have expressed it, as "people's subjective perception of [unfamiliar] people's reliability". Bjørnskov (2007) has pointed out that although many studies have been undertaken in order to explore the link between social trust and its beneficial effects, research on the *determinants* of social trust is not at all that developed. The main purpose of this master's thesis is to shed some light on this issue. Generally speaking, there are two broad schools of thought about the determinants of social trust: The first school focuses on how individual characteristics and demographic features influence a person's level of social trust. The second school emphasises that what matters for a person's level of social trust is not first and foremost determined by individual particularities, but rather by the structure of the society at large. In this master's thesis, we will take both schools of thought into consideration, although the main focus will be on the latter. By using five waves (2002-2010) of the European Social Survey (ESS), we will perform multilevel analyses taking into account factors at both the individual as well as the contextual level.

In Rothstein and Uslaner's (2005) opinion, the main factor underlying social trust is the level of equality in society, in which there are two types; namely equality of opportunity and economic equality [equality of outcome]. According to Jallade (1992), the term 'equality of opportunity' is related to people's *access to welfare benefits and services*, while 'equality of outcome' refers to the *outcome of the redistributive process.* Rothstein and Uslaner (2005: 46) have pointed out that "[b]oth types of equality lead to a greater sense of social solidarity – which spurs generalized trust[1]". While the link between the latter type of equality and social

[1] In this master's thesis, the two terms 'social trust' and 'generalised trust' will be used interchangeably.

trust (often operationalised by using the gini coefficient[2]) has been the topic of research in a number of studies in recent years[3], the link between the former type of equality and social trust has been subject to less investigation. In this master's thesis, we will attempt to rectify this shortcoming by focusing on the way people's *access* to welfare benefits and services might have an impact on their level of social trust. We argue that the variation in policy design found among welfare regime types[4] has different effects upon the form/degree of stratification within society, which again has an impact on the level of social trust. We will use Esping-Andersen's (1990) welfare regime typology as a starting point when investigating the following research question: *"What impact does welfare regime have on social trust?"* Our main hypothesis is that while universal social policies (which to a large degree are found within the social democratic welfare regime) enhance social trust, experiences with other institutional designs tend to undermine it[5].

1.1) Scientific contribution

Among the studies that already do exist on social trust, only a few take into account the possible impact of welfare regime[6]. Kolberg and Uusitalo (1992: 83-84) have pointed out how comparative studies of the welfare states for a long time mainly have been preoccupied with the welfare state as a *dependent* variable: "The main interest has been to pinpoint those independent variables that best explain variations in welfare state effort or differences in the institutional architecture of welfare states". They continue by stating that it is about time that the welfare state is considered a major *independent* variable, since "the welfare state should (…) be regarded as a very significant institution with some vital repercussions on other societal institutions [and community characteristics]". The last years have seen a lot of literature attempting to typologise welfare regimes[7]. It is therefore appropriate to go one step forward and actually use the extensive work done within this area, in an attempt to explain

[2] The gini coefficient is a measure of income inequality. Values range between 0 – perfect equality – and 1 – all income goes to one person (OECD 2011).
[3] See for instance Alesina and Ferrera (2002), Delhey and Newton (2005), Knack and Keefer (1997), Uslaner and Brown (2003), and Wilkinson and Pickett (2010).
[4] In this master's thesis, we will categorise thirty European countries into five different welfare regimes; namely social democratic, conservative, liberal, Mediterranean, and post-communist.
[5] We are here basically referring to familiaristic (or family-based) social policies (mainly found within the conservative and the Mediterranean welfare regimes) and selective social policies (mainly found within the liberal welfare regime).
[6] See for instance Bjørnskov (2007, 2008), Kumlin and Rothstein (2005), Larsen (2007), Lee (2012), Rothstein (2001), Rothstein and Uslaner (2005), Tamilina (2010).
[7] See for instance Bonoli (1997), Castles and Mitchell (1993), Esping-Andersen (1990, 1999), Fenger (2007), Ferrera (1996), Gal (2010), Korpi and Palme (1998), Leibfried (1993), Siaroff (1994).

various phenomena in society (such as the level of social trust). This is one of the main aims and motivations of this master's thesis.

Among the few studies recognising the impact of welfare regime (or welfare regime characteristics) on social trust, some authors have used data on the individual level and examined how *personal* contacts with welfare state institutions affects a person's level of social trust (Kumlin and Rothstein 2005; Rothstein and Uslaner 2005)[8]. Other analyses have only included variables at the macro level (Bjørnskov 2007, 2008). In a number of studies (Larsen 2007; Rothstein 2001; Rothstein and Uslaner 2005), the authors have initially recognised the influence of both individual as well as contextual factors on social trust. However, when performing the actual analysis in the end, both levels have not been taken into account (Rothstein 2001)[9], or the variables at the individual and the contextual level have been included in *separate* analyses (Larsen 2007; Rothstein and Uslaner 2005). In all of the literature that we came across in relation to this master's thesis, only two studies (Lee 2012; Tamilina 2010) were actually *multilevel* studies, where welfare regime characteristics or a welfare regime categorisation had been employed as an independent variable influencing social trust. It is therefore apparent that more research is still needed within this area. It should also be pointed out that the work of Lee (2012) and Tamilina (2010) had some weaknesses or shortcomings that this master's thesis will attempt to rectify. First of all, in both of the studies, the dependent variable is based on the dichotomous measure for social trust used in the World Values Survey (WVS). Zmerli and Newton (2008: 719) have argued that using the European Social Survey's (ESS) 11-point scale of social trust, which we have done in this master's thesis, is a better option, as this measure is "more sensitive and accurate" compared to the WVS counterpart[10]. A second improvement of our study is that we have extended Esping-Andersen's (1990) original welfare regime typology and included more countries in our final

[8] Kumlin and Rothstein (2005), who based their study on Swedish survey data, found that the specific design of welfare-state policies matters for the production of social capital (including social trust). They concluded that personal contacts with universal welfare-state institutions tend to increase social trust, whereas experiences with needs-testing social programs rather undermine it. By using data from the 1992 American National Election Survey, Rothstein and Uslaner (2005) found that the dummy variable *Receives means-tested benefit* was statistically significant at the .1 level and negatively correlated with the dependent variable *Social trust*.

[9] Although Rothstein (2001) in his study of the Swedish welfare state briefly mentions the positive impact of universalism on social trust, his analysis only contains a number of variables at the *individual* level (of which none are related to welfare regime characteristics).

[10] In addition, Lee (2012) and Tamilina (2010) only base their dependent variable on *one* question asked in the WVS. In this master's thesis, our dependent variable will consist of a *scale* based on three questions asked in the ESS, which are all related to social trust. According to Zmerli and Newton (2008), this makes our dependent variable more reliable and valid than the operationalisation of social trust done by Lee (2012) and Tamilina (2010). For a more detailed justification of this, see Section 3.3.2 'Validity, reliability, and cross-cultural comparability' and Section 3.4 'The dependent variable'.

analysis[11]. The third advantage of our study is that we, in terms of time, start our investigation where the studies of Lee (2012) and Tamilina (2010) stop. The analysis of Lee (2012) is based on four waves of the WVS covering the time period 1981-2002, and the study of Tamilina (2010) only includes one wave of the WVS (1999-2002). Our multilevel analyses, however, contains five waves of the ESS covering the time period 2002-2010. Hence, the analyses performed in this master's thesis will be a valuable contribution to the already existing academic debate on the determinants of social trust by 1) using an improved version of the dependent variable; 2) using a more extensive welfare regime categorisation; and 3) using more recent data when performing our multilevel regression analyses.

1.2) Structure of the thesis

The structure of this master's thesis is as follows: In Chapter 2, a number of different theories and hypotheses related to social trust and its determinants will be outlined. This is accompanied by brief references to previous research wherever we find this is appropriate. In Chapter 3, the data set will be described in more detail, treating issues such as the advantages of multilevel modelling, limitations to our study, and the operationalisation of the variables. The results of the analysis will be presented in Chapter 4, which also includes a detailed interpretation and discussion of our findings. Chapter 5 will provide some concluding comments, as well as suggestions for future research. The main finding of this master's thesis is that what type of welfare regime a country has (social democratic, conservative, liberal, Mediterranean, or post-communist) is a strong and highly statistically significant determinant of social trust. While the social democratic welfare regime could be regarded as a high-trust context, the Mediterranean and the post-communist welfare regimes could be regarded as low-trust contexts. In the middle, we find the conservative and the liberal welfare regimes, which could be regarded as moderate-trust contexts. The two additional contextual variables representing ethnic fractionalisation and national wealth turned out to be non-significant, hence we cannot state for sure what effect these two variables is expected to have on the level of social trust in the population at large. A number of individual level variables were also shown to have an important impact on social trust.

[11]While the analyses of Lee (2012) and Tamilina (2010) only takes into account the eighteen countries originally included in Esping-Andersen's (1990) study, this master's thesis contains an analysis comprising thirteen of the countries covered by Esping-Andersen (ibid.), along with seventeen additional countries (mainly belonging to the Mediterranean and the post-communist welfare regimes) For a more detailed description of this, see Table D1 in the appendix.

2) Theory, hypotheses, and previous research

What are really the determinants of social trust? In this chapter, the main aim is to give an overview of the theory and previous research that has been undertaken to shed some light on this issue. The reason why we do this is to place this master's thesis in a bigger academic context. In addition, this is also something that justifies and explains the logic behind the ten different hypotheses that we eventually will propose. We will start by defining the concept of social trust and the advantages connected to having a high level of social trust (Section 2.1). In the following three sections (Sections 2.2-2.4), we will outline what contextual factors are expected to have an impact on social trust. The main argument presented in this master's thesis, is that the less stratified or polarised/fractionalised a society is, the less people are scared of 'unknown' people, and hence the more social trust they will have. If, on the other hand, the perceived economic and cultural distance between citizens is large, this creates an environment in which people are less trusting of each other. We claim that there are mainly two factors that can explain the variation in stratification and polarisation/fractionalisation in society, and hence the big differences in social trust levels among European countries; namely welfare regime (Sections 2.2-2.3) and ethnic fractionalisation (Section 2.4). In Section 2.4, the impact of national wealth on the level of social trust is also briefly mentioned. Section 2.5 deals with individual-level determinants of social trust. In Section 2.5.4, we will outline the logic behind a possible cross-level interaction effect between not being economically active (individual level) and welfare regime (contextual level). In Section 2.6, we will sum-up all the hypotheses tested in this master's thesis and present a figure of the proposed causal model.

2.1) What is social trust and why is it so important?

When we speak about trust, we are referring to people's "belief that others will not deliberately or knowingly do [them] harm, if they can avoid it, and will look after [their] interests, if this is possible" (Delhey and Newton 2005: 311). Rothstein and Uslaner (2005) and Uslaner (2000/2001) distinguish between two different kinds of trust; generalised trust (sometimes also referred to as social trust) and particularised trust. While social trust entails "the belief that most people can be trusted", particularised trust, on the other hand, "is faith only in your own kind" (Uslaner 2000/2001: 573). What characterises people with a high level of social trust, is that they have a great amount of confidence in strangers. People with a

high level of particularised trust (but a low level of social trust) rather tend to view strangers with suspicion and presume that they are not trustworthy (Rothstein and Uslaner 2005).

The importance of social trust has been discussed by several authors (Coleman 2000; Larsen 2007; Morrone et al. 2009; OECD 2011; Wilkinson and Pickett 2010). According to Morrone et al. (2009: 3), "trust may be regarded as a key driver of progress within a specific society". Social trust often goes hand in hand with good social as well as political development, since it increases capacity for collective action and enables better functioning of public institutions (OECD 2011). Larsen (2007: 83) has focused on how social trust has been viewed as a "mechanism for overcoming the primary social problem highlighted by rational choice theory", namely the prisoner's dilemma problem. He (ibid.) claims that actors, in the case of a lack of mutual trust, logically would choose a suboptimal solution. A number of authors have highlighted how trust leads to cooperation (Larsen 2007; Morrone et al. 2009; Putnam 2000; Uslaner 2002; Wilkinson and Pickett 2010). In Wilkinson and Pickett's (2010: 62) opinion, trust can surely "help to create a cohesive, co-operative community (…)". They have highlighted how 'trusters'[12] "tend to believe in a common culture [and] that everybody should be treated with respect and tolerance" (ibid.: 56). In Coleman's (2000: 22) view, "a group within which there is extensive trustworthiness and extensive trust is able to accomplish much more than a comparable group without that trustworthiness and trust". Uslaner (2000/2001) has pointed out how people who trust others are more likely to get involved in communal life, give to charity, and donate time to helping other people. Also Warren (1999: 3) has emphasised the advantages of trust and cooperation: "[E]xtensions of trust, especially to strangers (…) enable coordination of actions over large domains of space and time, which in turn permits the benefits of more complex, differentiated, and diverse societies". When it comes to political performance, it has been both theorised as well as empirically shown that social trust can increase institutional effectiveness, which in turn contributes to capable democratic governance (Hardin 1998; Horne 2014; Morrone et al. 2009; Paxton 2002; Putnam 1993; Tyler 1998). According to Morrone et al. (2009), the more trustful a society is, the more likely it is that agreements will be reached easily, and that problems will be responded to quickly. They (ibid.: 27) have for instance pointed out how higher trust levels, by reducing inefficiencies associated with political polarisation, might facilitate agreement

[12] The word 'truster' do not really exist in English. However, both Uslaner (2000/2001) and Wilkinson and Pickett (2010) have used this word in their work. Basically, the word 'truster' refers to a person who trusts others. This stands in opposite to the word 'mistruster', which refers to a person who mistrusts others.

among citizens: "[W]here trust is higher, government majorities and opposition are more open to fruitful debate and more likely to agree on ground rules". Uslaner (2000/2001) has provided a similar line of reasoning, arguing that 'trusters' tend to realise the importance for society to reach collective decisions. As a result of this, "they place a high value on compromise and legislative productivity, rather than ideological purity and stalemate" (ibid.: 570). In addition to affecting political performance and the 'wellbeing of civic society', it has also been suggested that trust exerts an impact on the 'wellbeing of individuals': "High levels of trust mean that people feel secure, they have less to worry about, and they see others as co-operative rather than competitive" (Wilkinson and Pickett 2010: 56). Coleman (2000: 38) has pointed out how social trust is an important resource for people at the individual level, since it greatly affects "their ability to act and their perceived quality of life". In the academic literature, the relationship between social trust and health has been investigated (Kawachi et al. 1997; Kawachi et al. 1999; Kennelly et al. 2003). The study of Kawachi et al. (1997) revealed that disinvestment in social capital leads to higher mortality rates. The contextual analysis undertaken by Kawachi et al. (1999) showed that there is indeed a link between low social capital and individual self-rated poor health. The link between social trust and the prevalence of crime has also been thoroughly examined. Bjørnskov (2007: 3) has for instance emphasized that one could view national trust scores as a measurement of "the extent to which people in a country (…) in general [can] be expected to 'do the right thing'". Based on their study covering 39 countries in the period 1980-94, Lederman et al. (2002: 529) concluded that "the sense of trust among community members has a significant negative effect on homicide rates". Hence, one could argue that social trust has an impact on individual wellbeing by having a positive effect on health, as well as increasing citizens' feeling of safety by reducing crime levels.

2.2) Welfare regimes and their relation to social trust

According to Tamilina (2010: 5), "[t]here is no agreement among scholars about the nature of the effects welfare state conducts on trust". In the academic literature, it is possible to find several points of view regarding this issue, "all of them being based on the assumption that the causality goes from the welfare state to social trust and not vice versa" (ibid.). Traditionally, the link between the size of welfare institutions and social trust has been perceived as negative (Boli 1991; Etzioni 1995; Fukuyama 2001; Putnam 1993, 2000; Swaan 1988; Wolfe 1989). Oorschot and Arts (2005: 6) have pointed out that "[a] recurrent critique

of the welfare state concerns its alleged unintended, negative, social and moral consequences". The main idea behind this critique is the notion "that the welfare state, in spite of or even because of its good intentions, has a crowding out effect upon the social capital[13] of the society it serves" (ibid.). The line of reasoning behind this argument is the assumption that social trust is something that is generated through associational membership and participation (Kumlin and Rothstein 2005; Putnam 1993, 2000): "[S]ocial capital is generated by people engaging themselves in voluntary associations built on norms of reciprocity" (Kumlin and Rothstein 2005:340). According to Boli (1991), the existence of large welfare-state programs could make such 'norms of reciprocity' harder to create, as people would rely on the broad system of social and welfare programs to take care of fellow citizens instead of organising themselves in voluntary associations. The so-called 'crowding out' hypothesis argues that large welfare state institutions are detrimental to social trust because a number of the societal functions that previously required, but also reproduced, social trust are now undertaken by the welfare state (for instance care of the elderly and unemployment benefits) (Jensen and Svendsen 2011), "thus undermining the very moral strengths the welfare state has shown" (Wolfe 1989: 142). Ferge and Kolberg (1992) have pointed out how extensive welfare state arrangements might destroy social solidarity, by making it compulsory and institutionalised. However, the persistently high levels of social trust in the Nordic countries has lead several authors to question the validity of the crowding-out hypothesis (Jensen and Svendsen 2011; Kumlin and Rothstein 2005; Oorschot and Arts 2005; Rothstein 2005). If the crowding-out hypothesis really holds, Oorschot and Arts (2005: 15) point out, "(…) one should expect as a pattern that social capital would be clearly lower in the comprehensive Scandinavian and Continental welfare states". On the other hand, "[s]ocial capital should be higher in the more residual, or less developed liberal and Southern welfare states, and maybe even higher in the welfare states of Eastern and Central Europe" (ibid.). This is, however, almost exactly the opposite of what Table A1 in the appendix shows. The descriptive statistics offered in this table clearly show that social trust is not lower, but higher in the Nordic (social democratic) welfare states. In addition, the level of social trust is much lower in the Southern (Mediterranean) welfare states and the Eastern, Central, and Southeast European welfare states (the post-communist welfare regime). The high levels of social trust in the social

[13] Rostila (2007) has pointed out how a number of studies (Kawachi et al. 1999; Kennelly et al. 2003; Putnam 2000) have used social trust as an *indicator* of social capital. However, both Rostila (ibid.) and Oorschot et al. (2006) argue that social trust should not be viewed as social capital per se, but rather "as one *aspect* of the multifaceted concept of social capital" (Rostila 2007: 224, emphasis added). In Oorschot et al.'s (2006) opinion, social trust constitutes an important part of 'social capital', the other two parts being networks and civism. In this master's thesis, the two terms 'social trust' and 'social capital' will be used interchangeably.

democratic welfare states has resulted in a number of studies examining what are actually the mechanisms behind the creation and maintenance of social trust in a society (Jensen and Svendsen 2011). Tamilina (2010:4) has for instance pointed out that the size of welfare institutions and spending definitely matters, but that there also "must be something else in the welfare state effects that is so important for trust but cannot be captured by the conventional measures". In order to put some light on this issue, a number of authors (Jensen and Svendsen 2011; Kumlin and Rothstein 2005; Larsen 2007; Rothstein and Uslaner 2005; Tamilina 2010) has highlighted that what matters is not first and foremost how much a country *spends* on welfare policies, but rather the specific *design* of these policies. In other words, the relationship between the welfare state and social trust should not only be examined from a purely quantitative point of view, one also needs "to take into account the qualitative side of welfare state arrangements" (Tamilina 2010: 7). By 'welfare state design', we are basically referring "to the structure of the direct encounter between citizens and welfare state institutions" (Kumlin 2004: 51). The starting point here is the distinction between universal, familiaristic, and selective (or means-tested) forms of government programs. In their study, Kumlin and Rothstein (2005) found support for the idea that interaction with some welfare-state institutions tend to enhance social trust, "whereas experiences with other institutional designs tend to undermine it" (ibid.: 342). Also the work of Oorschot and Arts (2005: 17) confirms "that people's social capital is related to the type of welfare state they live in (…)". Thus, our argument is not simply the exact opposite of the crowding-out hypothesis. As Kumlin and Rothstein (2005: 342) has stated:

> Rather, we argue and empirically support the notion that depending on how they are designed, welfare-state institutions have a capacity for both making and breaking social capital. In other words, if we are correct, some types of welfare-state programs and institutions can be seen as investments in social capital, whereas other welfare-state designs function in exactly the opposite way.

In what follows, we will first give an account of what we actually mean by 'welfare regime'. Second, we will discuss the three welfare regimes as proposed by Esping-Andersen (1990, 1999) and their relation to social trust. We will then extend Esping-Andersen's typology by adding two other categories; the Mediterranean and the post-communist welfare regimes. We argue that while social democratic welfare policies promote universalism, conservative welfare policies rather cultivate hierarchy and status. Liberal welfare policies, on the other

hand, contribute to a kind of dualism in society, creating a clear divide between those who receive welfare benefits, and those who pay for them. Esping-Andersen has highlighted how each of these welfare designs "produce its own unique fabric of social solidarity" (ibid.) and different levels of stratification among citizens. While the former is expected to produce a low degree of stratification (and hence having a positive influence on the level of social trust), the latter two are expected to produce high degrees of stratification in society (and hence low levels of social trust) (see Figure 1).

FIGURE 1: How the design of welfare policies affects social trust

2.2.1) What do we really mean by welfare regime?

Leibfried (1993: 133) has pointed out how "Europe is more than a geographical entity. (…) Europe has a common tradition in war, peace, culture, and above all, welfare statism". Despite this common tradition, it is important to be aware that the European welfare states differ in a number of ways. Hence, during the past two decades, "mainstream scholarship on the welfare state has been characterized by a growing interest in comparing welfare states and social policies in an effort to distinguish between types of welfare states and to identify key dimensions of variation" (Sainsbury 1996: 9). One of the most well-known attempt of describing variation between Western welfare states is Esping-Andersen's (1990) distinction between social democratic, conservative, and liberal regimes[14]. In *The Three Worlds of Welfare Capitalism*, Esping-Andersen (1990) categorises eighteen countries into a threefold typology. The 'three worlds of welfare capitalism', as presented by Esping-Andersen (1990, 1999), reveals that certain similarities exist between countries when they are grouped into different welfare regimes. These similarities include, among others, "the distribution and

[14] By 'welfare regime', Esping-Andersen (1990: 80) is basically referring to "(...) the institutional arrangements, rules and understandings that guide and shape concurrent social-policy decisions (…). The existence of policy regimes reflects the circumstance that short term policies, reforms, debates, and decision-making take place within frameworks of historical institutionalization that differ qualitatively between countries". In this master's thesis, we have taken Esping-Andersen's (1990) threefold welfare regime typology as a point of departure. However, during the last years a wide array of refinements and competing typologies have been proposed (Bonoli 1997; Castles and Mitchell 1993; Fenger 2007; Ferrera 1996; Korpi and Palme 1998; Leibfried 1993; Siaroff 1994). In addition, "attempts have been made to extend the application of the typology beyond its original, European roots" (Fenger 2007: 2, see for instance Gal 2010).

production of welfare, the direction of social policy and the construction of social insurance systems" (Rostila 2007: 235).

Traditionally, social expenditure (as a percentage of GDP) has usually been used as an indicator of a country's degree of 'welfare statism'. This is a measure that in a crude way reflects the "the total social wage, i.e. the share of a nation's resources that is distributed according to social rather than strict market criteria" (Esping Andersen 1990: 115). According to Esping-Andersen (ibid.: 3), "the convention of conceptualizing welfare states in terms of their expenditures will no longer do". He argues that social expenditure quite often represents a misleading picture of welfare–state differences: "If what we care about is the strength of social rights and equality, universalism, and the institutional division between market and politics, social-spending levels may camouflage more than they reveal (Esping-Andersen 1990: 106). In order to give an account of the key principles and philosophy underlining each welfare regime, Esping-Andersen (1990) uses a two-dimensional approach that is directly linked to outcomes of the welfare state intervention. He labels these dimensions de-commodification and stratification, and he argues that they are "keys to a welfare state's identity" (ibid.: 2). By de-commodification, Esping-Andersen (1990) is basically referring to the extent to which a person can uphold a decent standard of living without relying on the market, and the degree to which a social service is provided as a matter of right. In this master's thesis, however, the focus will first and foremost be on the second dimension, namely stratification. Although one might first of all think about the welfare state as providing social services and income security, it is also important to be aware of its role in creating and maintaining social stratification.

Esping-Andersen (1990) has pointed out how welfare states could be viewed as key institutions in the structuring of class and the social order: "The organizational features of the welfare state help determine the articulation of social solidarity, divisions of class, and status differentiation" (ibid.: 55). In his book, Esping-Andersen (1990: 69) identifies three different traditions when it comes to stratifying society, each of these traditions being inherent to the three welfare regime types. First, the aim of the social democratic regime is to obtain the lowest degree of benefit differentials. Here, the relevant measure is clearly the degree of universalism. Second, the conservative model is "best identified by the degree to which social insurance is differentiated and segmented into distinct occupational – and status-based programs" (ibid.). In this welfare regime we would expect large variations to occur between

the top and the bottom when it comes to benefits. Finally, liberal principles are identified in terms of welfare states' residualism[15], "especially the relative salience of means-testing (…) in terms of the relative financial responsibility accorded to the individual insured" (ibid.)". In the section below, we have offered a more detailed description of the three different welfare regimes as identified by Esping-Andersen, followed by a discussion of what impact each welfare regime is expected to have on the level of social trust.

2.2.2) Esping-Andersen (1990) and his threefold welfare regime typology: Social democratic, conservative, and liberal

When we discuss the features of the social democratic welfare regime, we first and foremost refer to the size and nature of the Nordic welfare states. Compared to other countries, these welfare states are dominated by universal programs (Rothstein 1998), and they are known to be "big along several dimensions" (Kumlin and Rothstein 2005: 340). This is certainly true both with respect to the proportion of citizens that are covered by different social programs, as well as the amount of phases and situations throughout life in which average citizens are in personal contact with welfare-state programs and public services (ibid.). In the social democratic welfare regime, most public benefits are both generous, highly distributive, and universal (Kumlin 2004, Tamilina 2010). Briefly explained, universalism means that access to the majority of social programs (such as health care, child allowances, public education, unemployment insurance, old-age pensions etc.) are not targeted to the 'poor'. The right to social protection is granted on the basis of citizenship, and is not related to a person's income or economic situation in general (Arts and Gelissen 2002; Kumlin 2004; Rothstein 1998; Rothstein 2003). This stands in contrast to the conservative welfare regime (where most public benefits are connected to occupational status and previous contributions), or the liberal welfare regime (where public benefits are granted on the basis of means-testing) (Kumlin 2004).

[15] We are here referring to 'welfare states' residualism' in the sense meant by Richard Titmuss (1958). He made a classical distinction between institutional and residual welfare states. In the former model, the entire population is addressed, it is universalistic and embodies an institutionalised commitment to welfare: "It will, in principle, extend welfare commitments to all areas of distribution vital for societal welfare" (Esping-Andersen 1990: 20). In the latter model, on the other hand, "the state assumes responsibility only when the family or the market fails; it seeks to limit its commitment to marginal and deserving social groups" (ibid.). Standing (1996: 225) also points at the concept of residualism. By this, he argues, we are basically referring to the degree to which a welfare state is based on "a mix of social insurance and social assistance, and a partial privatization of social policy".

When talking about the conservative welfare regime, we are usually referring to the Continental countries. These countries are quite extensive welfare states too, with benefits being much more encompassing and generous than in the liberal welfare states, but with much lower levels of social trust than the social democratic ones (Jensen and Svendsen 2011; Kumlin 2004). Although traditional conservatism includes a number of divergent models illustrating the ideal social order, the overarching theme that unifies them "is that traditional status relations must be retained for the sake of social integration" (Esping-Andersen 1990: 58). These countries are usually strongly influenced by the Church, something that "implies a conservative commitment towards the traditional family and the traditional role of women" (Ferge 1992: 202). A number of policies have been introduced, aiming at keeping care functions (such as childcare and eldercare) within the realm of the family (Daly and Lewis 2000; Kersbergen 1995). The aim of the conservative welfare regime is to preserve existing status, and this is basically attained through constructing status-oriented social insurance schemes (Tamilina 2010). Rostila (2007: 224) points to the concept of rights, and how these are related to status and class in conservative welfare states: "The state only interferes when the family's capability to serve its members is exhausted and it then provides social benefits based on previous earnings and status in society". In other words, social benefits are usually related to past income and former contributions. They are also typically differentiated with regards to occupational affiliation (Kumlin 2004). According to Esping-Andersen (1999: 81), "[t]he essence of a conservative regime lies in its blend of status segmentation and familialism". Jensen and Svendsen (2011: 5) point out how familiaristic programmes found in the conservative welfare states differ from the universal welfare institutions. While the latter is characterised by a general taxation of all citizens, and where the proceeds of this taxation is then redistributed across social groups (causing greater inter-group equality), the former strives to achieve the opposite aim, namely to protect the smallest social unit (i.e. the traditional family).

By liberal welfare regime we generally refer to the welfare system present in the Anglo-Saxon nations. This is a type of welfare system which embraces individualism and the primacy of the market (Arts and Gelissen 2002). The state encourages the operation of the market either actively by subsidizing private welfare schemes, or passively by keeping social benefits at a low level for the citizens who are 'demonstrably needy' (ibid.: 141). These social benefits, which are not particularly generous, are typically 'targeted' and given on the basis of economic means-testing (Esping-Andersen 1999). This 'selectivism' means that contrary to

what is the case for universal welfare policies, the definition of who should be eligible to obtain social assistance is quite narrow (Esping-Andersen 1999; Rothstein 1998). Citizens must meet a number of more or less specific conditions in order to receive services or benefits from the government. Rothstein (1998) has pointed out that these conditions may be of an economic nature (which is true when it comes to social or housing allowances), but they also might be related to individuals' health or their ability to take care of themselves. This is for instance the case when it comes to various types of elder care and disability pensions. As a result of this, these benefits "cater largely to the poor and otherwise needy segments of society" (Kumlin 2004: 53). As Esping-Andersen (1999: 75) has pointed out: "Liberal social policy is therefore very much the child of nineteenth century poor relief, favouring means or income tests so as to ascertain desert and need". In the liberal welfare regime, the realm of social rights is rather restricted. The redistribution of income in these welfare states is also quite limited (Arts and Gelissen 2002). The consequences of the policies promoted by this type of welfare regime are therefore high levels of income inequality and high levels of poverty when compared with the social-democratic and conservative welfare regimes (Rostila 2007).

2.2.3) Universalism, familialism, and selectivism and their impact on social trust

In this section, we will attempt to shed some light on how different types of institutional design can influence "the degrees of differential treatment, arbitrariness, partiality, finagling (…) and so on in the public administration" (Kumlin and Rothstein 2005: 348). This in turn is expected to have an impact on the level of social trust in society (Lee 2012; Tamilina 2010). By looking at Table A1 in the appendix, we can see that there is a substantial difference in social trust among the different welfare regimes. Larsen (2007) argues that it is reasonable to believe that both the high level of social trust in the social democratic regime, as well as the erosion of social trust in the conservative/liberal regimes is due to "regime-dependent mechanisms that have been encircled by comparative studies of the welfare state" (ibid.: 85). Rothstein (2005) claims that universal welfare institutions are a basic causal factor leading to the creation of social trust. In Larsen's (2007: 89) opinion, the high level of social trust present in the social democratic welfare regime is a consequence of universal social policy which "encompasses all citizens in a broad national system of benefits and services rather than divides them between the majority and the bottom". Another reason is that the benefits

given to low income groups are very generous, meaning that the 'potentially impoverished' are allowed to have a lifestyle not too different from that of the majority (ibid.). In terms of stratification, the design of the social democratic welfare regime and its universalism "equalizes the status, benefits, and responsibilities of citizenship" (Tamilina 2010: 11). In other words, the universal social programs do not discriminate between people, everyone is treated equally (Rothstein and Uslaner 2005). Citizens in the social democratic welfare states, whether they are patients, students, unemployed, or people in elderly care, are not granted different services based on whether or not they are perceived as being 'the poor'. This might increase a feeling of 'optimism' and 'equality of opportunity' among the population (ibid.: 63). As a result of this, universal social programs may contribute to creating cohesion and increased social trust in society. Uslaner (2002) focus on a mechanism that is at work in the conservative welfare regime – the presence of *familiaristic* welfare institutions – which he argue potentially could cause people living in these welfare states to have a lower level of social trust than people living in the social democratic welfare states (where most of the welfare policies are *universal*). In conservative countries, the coverage system is based on "a myriad of occupationally distinct schemes, explicitly designed so as to recognize and uphold old status distinctions" (Esping-Andersen 1990: 58). Uslaner (ibid.) points out that whereas the culture in the Nordic social democratic countries tends to emphasise larger groups (which leads to broad solidarity and hence high social trust), the culture in the Continental conservative countries rather emphasises the family and nearest social group. In the conservative welfare regime, the objective of protecting the traditional family has been accomplished by basing 'corner-stone programmes' (e.g. unemployment insurance, old-age pensions, and sickness insurance) on labour market insurance schemes. In other words, the amount of benefits that a family receives is strongly linked to the payments previously made by the head of the family. According to Jensen and Svendsen (2011) and Arts and Gelissen (2002), this leads to less solidarity between various groups in society and a high degree of stratification, since "the individual employee does not participate in too much redistribution between his own social group and other social groups, and that the benefits he receives match the payments he has put into the system" (ibid.: 5). This again, we expect to have a negative effect on the level of social trust in these welfare states. On the other hand, it is plausible to assume that the level of *particularised* trust, i.e. how much one trust people one already knows (such as friends and family) to be comparably higher in these welfare states than in the

social democratic countries (Patulny 2005)[16]. Morrone et al. (2009: 22) distinguish between 'thick' and 'thin' trust. They argue that in societies dominated by strong family ties, "interpersonal trust is less developed, and high level of thick trust (among relatives and people who belong to the same group) will coexist with low levels of thin trust (towards strangers)". In other words, the result of conservative familialism might be that particularised trust supplants social trust.

One feature of the liberal welfare regime is that there has been a "dramatic erosion of social trust" in recent years (Larsen 2007: 83). What characterise the welfare policies in these countries is that benefits and services are granted on a 'selective' basis, usually in the form of means-testing. Several authors have pointed out how means-testing might be detrimental to the creation of social trust (Kumlin and Rothstein 2005; Larsen 2007; Lee 2012; Rothstein and Uslaner 2005; Tamilina 2010). Kumlin and Rothstein (2005) focus on the fact that selective welfare institutions often must test each case *individually*. As a result of this, "they are to a greater extent subject to suspicions of cheating, arbitrariness, and discrimination compared with universal public agencies" (ibid.: 349). If these assumptions are correct, we might therefore expect that personal experiences with these kinds of welfare institutions "will have (…) negative effects on interpersonal trust" (ibid.: 350). The argument of Lee (2012) is somewhat similar. He argues that means-based social policies tend to divide citizens into two categories, namely 'good independent citizens' and 'bad welfare dependents' (ibid.: 606). In the liberal welfare states, social programs are first and foremost targeted at the 'really needy' (Esping-Andersen 1990). In this way, a sort of dualism is cultivated between the poor part of the population (the welfare state dependants) and the middle class (who primarily insures themselves through the market). Several authors (Esping-Andersen 1990; Jensen and Svendsen 2011; Larsen 2007; Rothstein and Uslaner 2005) have highlighted how selective or means-tested types of government programs increase the distance between individuals in a society, and hence contribute to an extensive degree of stratification. In the social democratic welfare regime, where most benefits and services are universal, there is not made a distinction between 'us' and 'them': Everybody receives the same child allowances and pensions, and everyone uses the same public hospitals, schools, childcare facilities, and nursing homes (Larsen 2007: 88). In liberal welfare states, on the other hand, social insurance is organised in such a way that self-reliance and individualism, rather than collective solidarity, is nurtured

[16] Due to space and time constraints, we will unfortunately not be able to test this assumption any further in this master's thesis.

(Esping-Andersen 1990: 58). In these countries, only a small minority is eligible to receive benefits and services, "giving rise to a clear divide between those receiving benefits and those who pay for them" (Jensen and Svendsen 2011:6). In addition, the former group is often looked upon as 'free-riders' by the latter group (Lee 2012: 606). In this way, one could argue that selective policies contribute to narrow solidarities and a kind of polarisation in society. This polarisation, in turn, affects the extent to which citizens believe that most people can be trusted, since "[i]n the case of high cultural distance, the majority comes to see the underclass as being composed of exploitative players that can not be trusted" (Larsen 2007: 87). Contrary to this, as we have already mentioned, universalistic programs often leads to increased solidarity, resulting in the perception of a shared fate among all citizens. The perceived cultural distance between citizens is low, and this has again an impact on the level of social trust: "[i]n the case of low cultural distance, the majority comes to regard those who potentially could have made up an underclass – most obviously the unemployed – as trustworthy people like the majority" (ibid.). What the literature concerning the welfare typology presented above has in common, is that they all argue that social trust is something that is influenced and shaped by the society in which it exists. While universal programmes focus on 'the generalised other' (creating broad solidarities), familiaristic or selective welfare policies rather put an emphasis on the family or the individual (creating narrow solidarities). In social democratic welfare states, social stratification is reduced by giving all citizens equal access to public goods. Contrary to this, familiaristic and selective policies tend to divide citizens both economically and culturally (Jensen and Svendsen 2011; Lee 2012; Tamilina 2010). This again is expected to have an impact on the level of social trust, leading to the formation of the following hypothesis:

H1: People's level of social trust in the social democratic regime will be, on average, higher than people's level of social trust in the conservative and the liberal welfare regimes, as universal programs (found in the social democratic welfare regime) are expected to increase social trust, while familiaristic and selective programs (found in the conservative and the liberal welfare regimes respectively) are expected to undermine social trust.

2.3) Extending the work of Esping-Andersen (1990) by adding two additional welfare regime categories

According to Arts and Gelissen (2002), the comparative macro-sociology of welfare states is still 'in statu nascendi'[17]. They point out that the categorization of welfare states still is suffering from a "lack of formal theorizing" (ibid.: 137). Despite certain shortcomings, they do however admit that the formulation of typologies, such as Esping-Andersen's (1990, 1999) attempt could be useful. Esping-Andersen's (ibid.) welfare regime typology is the point of departure for a number of further specifications and extensions, where the number of countries as well as categories has varied. As Martin (1997: 24) has highlighted, these typologies "do not include all countries, nor do they explain how different systems evolved: rather they are ideal types". This point has also been emphasized by Arts and Gelissen (2002: 139): "Contrary to the ideal world of welfare states, the real world is likely to exhibit hybrid forms". By this, they basically mean that there exists no such thing as a one-dimensional nation in the sense of a pure case. In today's world, every country presents a system mix. However, despite this, welfare regime typologies could still be useful when explaining differences in social trust levels among countries (Rostila 2007). In this section, we will look at how certain authors have argued that Esping-Andersen's original typology should be extended to also include the Mediterranean and the post-communist welfare regimes.

2.3.1) The Mediterranean welfare regime: Even more familiaristic than the conservative welfare regime?

Shortly after the publication of Esping-Andersen's (1990) *The Three Worlds of Welfare Capitalism*, several scholars began questioning his inclusion of Italy in the conservative welfare regime. In addition, he was also criticised for excluding other southern European welfare states from the analysis (Arts and Gelissen 2002; Bonoli 1997; Fargion 1997; Ferrera 1996; Gal 2010; Leibfried 1993; Rhodes 1997). Castles (2006: 42) has highlighted that a systematic treatment of the Southern countries is still missing from the academic scene: "The great debate of recent decades on the determinants of welfare state development in western societies has been – and continues to be – framed with virtually no reference to the experience of Greece, Portugal and Spain". Some authors have tried to rectify this shortcoming by questioning whether a fourth regime type should be added to Esping-Andersen's typology,

[17] In the state of being born.

namely the Mediterranean welfare regime (Bonoli 1997; Ferrera 1996, 2000; Gal 2010; Leibfried 1993; Martin 1997; Naldini 2003; Trifiletti 1999). Ferrera (1996, 2000) and Naldini (2003) argue that Greece, Italy, Portugal and Spain should be included in this regime type. Instead of an official level of security, "an embryonic system of social security" exists in these countries, which is "accompanied by a very high degree of familialism" (Rostila 2007: 225). Instead of the state or the market providing welfare to citizens in these countries, it is rather the family that plays the crucial role as an "institution of welfare production and distribution of income and services" (Moreno 2004: 133). The social system present in the Mediterranean welfare states creates even more dependence on family and kinship networks as compared with other welfare regimes (including the conservative welfare states) (Andreotti et al. 2001; Moreno 2004; Rostila 2007). Several authors have claimed that the social protection system in these countries leads to an even higher degree of dualism and stratification in society than what is the case in the conservative welfare regime (Andreotti et al. 2001; Ferrera 2000; Gunther and Diamandouros 2006; Moreno 2000). They highlight how social policy in these countries creates a sharp divide in terms of guarantees and opportunities, leading to the formation of three distinctive groups: "'insiders' (hyper-protected core workforce), 'peripheral' (in-between gainfully employed) and 'outsiders' (precarious, 'left-outs' and 'junk' labourers)" (Moreno 2000: 148). Gal (2010) has argued that the Mediterranean welfare regime should be extended even further. In addition to Greece, Italy, Portugal and Spain, he also argues that Cyprus, Israel, Turkey and Malta should be considered a part of this welfare type (however, as Malta is not part of the ESS data set, this country has not been included in our analyses). Gal (ibid.) claims that these countries share a common modern history of late industrialisation and authoritarian or colonial rule. In turn, this has led to weak, ineffective states, causing "similarities in the structuring of their welfare states and in their ability to achieve acceptable welfare outcomes" (ibid.: 296). Guerrero and Naldini (1997) emphasise the great importance of family solidarity in these eight nations as compared with other welfare states, particularly those in Northern and Central Europe. Gal (2010) also focuses on the high degree of familialism in these countries, which again is expected to have an effect on the social relations between citizens in these welfare states: "[D]ata on the levels of social connectedness (…) indicates that family relations are high while informal (non-kin) social relations are lower than in other welfare states" (ibid.: 292). We expect this to have a negative effect on the level of social trust, as a low level of informal social relations contributes to creating an increased distance between people in society. Based on the arguments presented above, the following hypothesis has been formed:

H2: The welfare policies in the Mediterranean countries are even more familiaristic than those found in the conservative welfare states. In addition, they create a sharp divide between 'insiders' and 'outsiders' in the labour market. We therefore expect that people's level of social trust in the Mediterranean welfare regime will be, on average, lower than people's level of social trust in the conservative welfare regime.

2.3.2) The post-communist welfare regime: The legacy of a shared communist past

In the opinion of Deacon (2003), Fenger (2007) and Rostila's (2007), a fifth category of welfare regime should also be added to the welfare regime typology, namely the post-communist regime. In Esping-Andersen's original threefold typology, no post-communist countries were included[18]. This category includes countries situated in Eastern, Central, and Southeast Europe. This is a group of countries that share a common past of communism, either by having been a part of the USSR or by having been under USSR influence. Makkai (1994: 188) has pointed out how the breakdown of the state socialist order and the following move toward a market economy has created an 'institutional vacuum', and that "it is within this vacuum that social policy is undergoing change as it moves from a 'monistic' to a 'pluralistic' system (…)". According to Orenstein (2008: 81-2), "[a]lthough the most poorly performing postcommunist welfare states do not function as well as they used to, they continue to provide a significant level of social protection". There is however a lack of academic literature when it comes to research on this particular welfare system. While the welfare state in the western world has been a topic of research for decades, "this [i.e. the post-communist] welfare state regime is still only moderately theorized and analysed" (Rostila 2007: 225). A question one might ask in relation to this is whether these post-communist countries can be placed in one of the models already suggested by Esping-Andersen (1990), or whether they rather "have developed into a distinctive post-socialist model of social policy" (Rostila 2007: 225). While most European welfare states can be placed in one of the three welfare regimes identified by Esping-Andersen (1990, 1999) (i.e. social-democratic, conservative, or liberal) the post-communist welfare states do not fit in as easily. Is there a possibility that "collapse of bureaucratic state collectivism" (Deacon 1993: 191) might have caused the emergence of a new model of welfare? Both Deacon (2003), Fenger (2007), and

[18] It should however be noted that this is not particularly odd, as Esping-Andersen's *The Three Worlds of Welfare Capitalism* was published in 1990, shortly after the fall of communism.

Rostila (2007) show and argue that these post-communist countries constitute a separate kind of welfare regime, different from the three types distinguished by Esping-Andersen (1990). Fenger (2007: 3) has for instance claimed that half a century of communist rule has produced 'institutional legacies' that in turn "lead these states to following a path that deviates markedly from existing welfare states". This latter point has also been pointed out by Orenstein (2008: 82), who has stated that "[t]he socialist legacy has been cut back, but it has not entirely disappeared". So, what impact could one imagine the 'institutional legacies' to have when it comes to the level of social trust in the post-communist welfare states? Both Fukuyama (2001) and Gibney (1997) focus on how the communist rule undermined all forms of horizontal association, leaving "post-Soviet society bereft of both trust and a durable civil society" (Fukuyama 2001: 18). As Gibney (1997: 95) has highlighted: "In place of a sense of community, these 'societies' were instead marked by a mutual distrust between the state and its people, and between the people themselves". Bjørnskov (2007) refers to Paldam and Svendsen's (2001) dictatorship theory, which states that the levels of trust in Eastern and Central Europe to a large extent "deteriorated due to the oppressive behaviour of the communist dictatorships" (Bjørnskov 2007: 6). Gibney (1997: 93) has pointed out how "political terror and gross human rights abuses were an unfortunate hallmark of government policy" in the Soviet bloc. This, again, is expected to have a negative effect on the level of social trust within these countries: "The well documented nature of secret police activities during the communist period (…) demonstrated a rational basis for institutional and interpersonal distrust, both during and after the communist period" (Horne 2014: 225-6). Bjørnskov (2007) and Ferge and Kolberg (1992) have also highlighted how the collapse of communism *in itself* might have led to a deterioration in the level of social trust. Bjørnskov (2007:15) states that "[p]ost-communist societies are less trusting than others, partly due to the detrimental effects of having had a communist regime, partly due to the disruptive effects of dismantling the fundamental organization of society when communism collapsed". This collapse certainly brought much anxiety and uncertainty among the Soviet population regarding their future. As Ferge and Kolberg (1992: 16) has pointed out: "Adjustment to radically new challenges and a diametrically changed value system, is stressful for many". Both the experiences during communist rule, as well as the consequences and transformation following its collapse, makes it is reasonable to believe that individuals living in these countries, on average, should have a lower level of social trust than most other European citizens (Rothstein and Uslaner 2005). This leads to the formation of the following hypothesis:

H3: As a result of the communist legacy, people's level of social trust in the post-communist welfare regime[19] *will be, on average, lower than people's level of social trust in the four other regime types.*

2.4) Other contextual-level determinants of social trust: Ethnic fractionalisation and national wealth

In the previous section, we argued that welfare regimes have different influence on the level of social trust, since universal policies in social democratic welfare regimes create broad solidarities, while policies in conservative, liberal and Mediterranean welfare regimes create narrow solidarities. We focused on how government policies create a high degree of social stratification in the three latter welfare regimes by creating a cleavage between 'rich' and 'poor' in the liberal welfare regime (Rothstein and Uslaner 2005), or between 'insiders' and 'outsiders' in the conservative and Mediterranean welfare regimes (Moreno 2000). This stratification, again, we expect to have a negative impact on the level of social trust within a society, since "[t]he greater the perceived similarity of other people, the more they are trusted. The greater the dissimilarity, the more suspicion and distrust" (Delhey and Newton 2005: 312). If divisions in society are detrimental to social trust, it is also likely to believe that ethnic fractionalisation might have a negative impact on levels of social trust: "To the extent that the main social cleavages in modern society are formed around class (…) and ethnicity, we expect that societies divided along these lines will have lower generalized trust scores" (Delhey and Newton 2005: 312). In other words, we expect that the more homogenous a society, either in terms of class or ethnicity, the higher its level of social trust (and vice versa). The study of Bjørnskov (2007:1) suggests that "[s]ocial polarization in the form of (…) ethnic diversity reduces trust". In a later study, Bjørnskov (2008) found that the effect of ethnic diversity on social trust is negative, but not statistically significant. In the study of Delhey and Newton (2003), the effect of ethnic fractionalisation turned out to be negative and significant in all of the models. Similar results have also been obtained by Alesina and Ferrara (2002) and Knack and Keefer (1997). This leads us to the creation of the following hypothesis:

[19] To use the term 'post-communist *welfare* regime' to describe the collection of countries previously belonging to the USSR or being Soviet satellites is probably a bit misleading, since these countries have not been put in one category based on their policy design (and the level of social stratification that these policies are expected to create). Rather, they have been put in one category based on the assumption that the level of social trust in these countries is influenced by the former repressive rule and the legacy of communism. However, for simplifying purposes, this group of countries have been denoted as 'post-communist welfare regime' in this master's thesis.

H4: Ethnic fractionalisation should have a negative effect on the average level of social trust within a country.

GDP per capita – which is supposed to reflect a country's overall wealth and material conditions – has previously been shown to be related to social trust (Bjørnskov 2007; Delhey and Newton 2005; Knack and Keefer 1997; Zak and Knack 2001). According to Bjørnskov (2007: 7), this might reflect the simple fact that citizens living in rich societies "are more willing to take a chance in trusting strangers, hence capturing a difference of relative risk aversion that would tend to decrease as income increase". A similar line of reasoning has been put forward by Delhey and Newton (2005), who have emphasised the link between risk and trust. They claim that the wealthier a society is, and the more it is capable of meeting its basic needs, "the more its members are able to take risks by virtue of their trusting attitudes, while, at the same time, making it both less necessary and less rewarding to act in an untrustworthy manner" (ibid.: 312). In the academic literature, the view that national wealth has a positive impact on the level of social trust seems to be quite common and not a source of much controversy. According to OECD (2011: 90), high country trust is "strongly associated with high (…) income levels. In their study, Knack and Keefer (1997: 1251) found that "trust and civic norms are stronger in nations with higher (…) incomes". A similar result was obtained by Delhey and Newton (2005: 323), who state that "[w]ealthy (…) societies are trusting societies". Taking this into account, the following hypothesis has been constructed:

H5: National wealth should have a positive effect on the average level of social trust within a country.

2.5) Individual-level determinants of social trust

In addition to the contextual determinants of social trust, it is also reasonable to believe that individual factors might influence an individual's level of social trust. In this section, we will see how the success of one's life (in terms of human and economic capital), past negative experiences, and religion might impact on peoples' level of social trust. In the last part of this section, we will also discuss the possibility of a possible cross-level interaction effect.

2.5.1) Success in life: Human and socioeconomic capital

It has been claimed that those who are successful in their own life, for instance in terms of human and socioeconomic capital (education, income and work), on average have a higher level of social trust than unsuccessful people (Delhey and Newton 2003; Oorschot et al. 2006): "[S]ocial trust tends to be expressed by the 'winners' in society, as measured in terms of money, status, and high levels of job (…) satisfaction" (Delhey and Newton 2003: 96). On the contrary, distrust is something that is expected to be more common among the 'losers' in society, in other words, "those with a poor education, low income, and low status" (ibid.). So, what could explain the different level of trust between the 'winners' and the 'losers' in a society? One possible reason is that those who are better educated and wealthier, with a high socioeconomic status, often are treated with more respect (Putnam 2000) This, in turn, might have a positive impact on their level of social trust: "In virtually all societies, 'have-nots' are less trusting than 'haves', probably because haves are treated by others with more honesty and respect" (ibid.: 138). A second reason might be that successful people are less risk averse compared to those who are unsuccessful. Put differently, successful people can 'afford' to trust strangers to a much larger extent than people who are poor or vulnerable. This latter point is somewhat similar to the argument presented in Section 2.4, where the effect of GDP per capita on social trust was discussed. However, in this section we argue that in addition to income being of great importance at the *macro* level, it also matters at the *individual* level. Another channel through which education might breed social trust is through the socialisation effect. By attending schools or universities, one gets to know and has to cooperate with people from different socioeconomic and cultural backgrounds. This might contribute to people having less fear towards strangers, hence increasing the amount of trust in people they do not know. It is reasonable to believe that the socialisation effect, in addition to being present within the educational systems, also is present at the workplace. People who are participating in the economic life of a country – by working, participating in community/military services or being a student – interact and have to cooperate with other people (that sometimes are very different from themselves) on a daily basis. People who are unemployed, retired, sick or disabled, on the other hand, are usually more isolated. This might cause them to have greater fear in strangers and the unfamiliar. The analysis undertaken by Tamilina (2010: 21) confirms that unemployment negatively affects an individual's level of social trust. The study of Oorschot et al. (2006) found that students tend to have a higher trust level compared with other people, while retirees and housewives usually have a much lower level of social trust compared to the rest of the population (with employed people being the

reference category). By taking the various success factors discussed above into account, the following two hypotheses have been formed:

H6: The current success of one's life – as measured in education and income – should have a positive impact on a person's level of social trust.

H7: Not participating actively in the economy (for instance, by being unemployed, retired, sick or disabled), should have a negative impact on an individual's level of social trust.

2.5.2) Past negative experiences

As already mentioned above, people who are successful and have positive life experiences are expected to have more social trust than people who are unsuccessful and with negative life experiences. With regard to this, it is therefore logical to assume that past negative experiences might have a detrimental effect on a person's level of social trust. People who have experienced crime (such as burglary or assault) will probably be more suspicious of other people, at least in the time immediately following the event: "[D]istrust (…) tends to be expressed by victims of crime and violence" (Delhey and Newton 2003: 96). It is also likely to believe that discrimination will make a person trust other people less (Alesina and Ferrara 2002; Rothstein and Uslaner 2005). If a person is member of a group who has been discriminated against (because of age, sexuality, religion etc.), that person will probably be less trustful towards people that he or she does not know. As Alesina and Ferrara (2002: 209) have expressed it: A person will tend to trust other people more "if he is used to be treated fairly by his fellow men". A person who is member of a group that often experiences discrimination does not expect to be 'treated fairly' in the future, and as a result he or she will trust other people less. The study of Alesina and Ferrara (2002) did indeed reveal a strong negative association between social trust and being member of a discriminated group. As a result of this, we propose the following hypothesis:

H8: A recent experience of crime or discrimination should have a negative impact on a person's level of social trust.

2.5.3) Religious denomination

Several studies have focused on whether religious denomination could be an explanatory factor in explaining an individual's level of social trust. The theoretical argument is that some religions "encourage trusting attitudes and trustworthy behaviour" to a much larger extent than other religions (Delhey and Newton 2005: 314). Several authors have pointed out that hierarchical religions (such as Catholicism, Orthodox Christianity and Islam) often create vertical bonds of obligation in society that divide rather than unite people socially (Bjørnskov 2007; Inglehart 1999; Porta et al. 1997; Putnam 1993). On the other hand, people belonging to non-hierarchical religions (such as Protestantism and Eastern/Asian religions) should on average have a higher level of trust than other people in society. Bjørnskov (2007) and Delhey and Newton (2005) have focused on how differences in religious traditions and norms, originally being described by Weber (1992 [1930]), might also have an impact on the level of social trust. Delhey and Newton (2005: 313) have highlighted how the 'Protestant ethic' emphasises direct accountability to God and "the religious and economic importance of trust and trustworthiness". Delhey and Newton (2005), Glaeser et al. (2000) and Uslaner (2002), found that the average level of social trust increases with Protestant religious traditions. Based on their studies, Berggren and Jordahl (2006) and Porta et al. (1997) concluded that hierarchical religions have strong negative effects on social trust. The study of Lee (2012), Oorschot et al. (2006) and Tamilina (2010) revealed that Protestants tend to trust more compared to non-religious people, while Catholics tend to trust less. Based on this, we will therefore test the following hypothesis in our subsequent analyses:

H9: Being a Protestant should have a positive effect on a person's level of social trust (as compared with non-believers), while being a Catholic should have a negative effect.

2.5.4) Cross-level interaction effect: *Not economically active*Welfare regime*

In social democratic welfare states, where a large proportion of the policies are universal, the government do not usually discriminate between 'rich' and 'poor' when distributing their benefits and service, at least not to the same extent as in the liberal welfare states (or between 'insiders' and 'outsiders', as in the conservative and the Mediterranean welfare regimes). In liberal, conservative and Mediterranean welfare states, on the other hand, the middle and upper class are likely to perceive welfare recipients as 'free riders', and "to treat social

welfare programs merely as philanthropic contributions to the poor, rather than as a common pool of social safety nets that may benefit themselves in bad times" (Lee 2012: 606). As a result of this, welfare recipients in the three latter welfare regimes tend to "suffer from social stigmatization and psychological abuse by welfare institutions" (ibid.). Hence, it is reasonable to believe that not participating actively in the economy in liberal, conservative, and Mediterranean welfare states (e.g. by being unemployed, sick or disabled) will decrease a person's level of social trust to a greater extent than what would be the case for a 'not economically active' person living in a social democratic welfare regime. Huber and Stephens (2001) have emphasised how unemployed, disabled and unskilled workers have quite good prospects for higher skill qualification in the Nordic social democratic countries. This group of people is often offered the chance to improve their employment opportunities, typically in the form of "state-sponsored investment in training" (Lee 2012: 620). In most liberal and some conservative/Mediterranean European countries, on the other hand, the 'bottom of the social strata' usually suffer "from repeated cycles of unemployment and reemployment at low wage jobs" (ibid.: 606). This is another reason why we would expect 'marginalised' citizens in social democratic welfare states to possess a higher level of social trust, as compared with their counterparts in the liberal (and to a certain extent the conservative and the Mediterranean) welfare regimes. Based on this line of reasoning, the following hypothesis is proposed:

H10: As a large part of government programs in the liberal welfare regime involves means-testing, which is hypothesised to have a negative effect on social trust (see H1), we hypothesise that not participating actively in the economy should have an even stronger negative effect on social trust for a person living in the liberal welfare regime (and to a certain extent also the conservative and the Mediterranean welfare regimes), as compared with the effect of not participating actively in the economy in the social democratic welfare regime (where most welfare programs are universal).

2.6) A sum-up of the hypotheses

So far, we have given an account of the most common theoretical explanations that can shed some light on variations in social trust. We have tried to illustrate that no theory *by itself* can explain this variation, rather, the determinants of social trust are expected to be found both at the contextual- and at the individual-level The primary focus of the theory chapter has been to

highlight how welfare regime can impact the level of social trust within a country. We have argued that one of the main differences between social democratic, conservative/ Mediterranean, and liberal welfare regimes is to be found in the design of their policies; namely universal, familiaristic, and selective respectively. Taking into account previous literature and findings, we claim that the differences in these designs cause citizens in some welfare states are more divided economically and culturally than in other welfare states, which again is expected to influence the level of social trust. In addition, the level of social trust in Eastern, Central and Southeast European countries is hypothesised to be quite low compared to the level of social trust in the other four welfare regimes, due to the post-communist legacy these countries have in common. We have also briefly mentioned how two other contextual factors (ethnic fractionalisation and national wealth), as well as a number of individual-level factors, are expected to affect social trust. Based on the theory, hypotheses and previous research outlined above, we propose the following causal figure (Figure 2). In the next chapter, we will discuss the data and the method used in our analyses, the limitations to our study, as well as the operationalisation of all the employed variables.

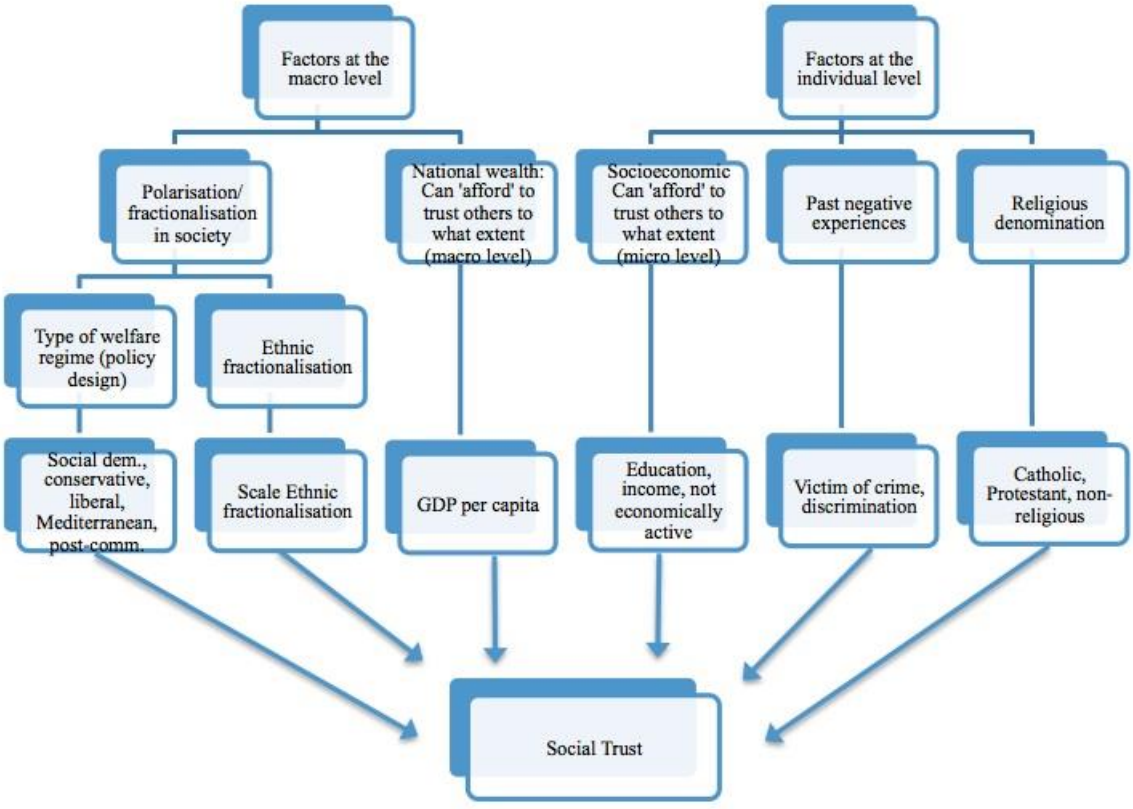

FIGURE 2: The proposed causal model

3) Data and Methods

In this chapter, we will focus on the process leading up to the choice of data and methods for our analyses, and how this could be justified. When undertaking academic research, it is important to be open and sincere about these issues in order for the study to be replicable. Our aim is to offer the reader a clear overview of how the models have been specified, and provide an account of the operationalisation of all the variables relevant to our multilevel regression analyses. We will start by outlining the methodological approach and the procedures connected to the collection and treatment of the data (Section 3.1). We will focus on the various data sources, and what country-years/countries have been included in our analyses. In Section 3.2, we will describe in more detail the justifications for choosing multilevel modelling, and the advantages connected to this method. This is followed by a discussion about the methodological challenges and the potential limitations to our analyses (Section 3.3). We will continue by giving the reader a detailed overview of how all the variables included in our analyses – both the dependent as well as the independent variables – have been operationalised and coded (Sections 3.4-3.6). At the end of this chapter, we will provide a table with descriptive statistics for all of the variables used in our study (Table 1).

3.1) The statistical method and the employed data material

In this master's thesis, we use a hypothetico-deductive approach (Moses and Knutsen 2007), since the hypotheses that we want to test have been derived from the theory outlined in Chapter 2. In order to do test our hypotheses, we have deemed the statistical method most appropriate, which allows us to draw general conclusions from empirical observations (ibid.).

Among the statistical methods, the simplest one is the purely descriptive form of statistics. However, moving beyond the field of descriptive statistics, and into the realm of inferential statistics, gives us the opportunity to examine correlations within the statistical material. If one from a theoretical standpoint believes that one variable should have an effect on the other, regression analysis becomes a suitable tool (Moses and Knutsen 2007: 84; Ringdal 2007: 238). We are interested in the effects of welfare regime and ethnic fractionalisation on social trust, and how this effect might be mediated by other factors. In this analysis, we therefore consider multilevel regression analysis the best and most relevant option, a method that allows us to study both individual-level as well as contextual determinants of social trust

simultaneously. The data presented in this study (categorisation 1 and 2)[20] consists of N=135,186 respondents (level-1). These respondents are hierarchically structured within 71 country-years (level-2), which again are nested within 17 European countries (level-3). For categorisation 3, the equivalent figure at level-1 is N=207,942. Here, the respondents are hierarchically structured within 115 country-years (level-2), nested within 30 European countries (level-3).

For individual-level variables, we have used the European Social Surveys (ESS)[21] integrated data set, which contains repeated cross-sectional data from five surveys (Wave 1 – 2002, Wave 2 – 2004, Wave 3 – 2006, Wave 4 – 2008, and Wave 5 – 2010), covering thirty countries. The ESS integrated data set have been made available in an anonymous form through the Norwegian Social Science Data Services (NSD)[22]. The ESS is based on face-to-face interviews, and its purpose is "to describe and explain Europe's changing institutions and behaviour patterns, the attitudes and beliefs of its various populations" (Rostila 2007: 228). The same questionnaire and methodology have been used in all of the five surveys included in the ESS integrated data set. It is however important to notice that not all of the countries included in the analysis have been represented in all of the five waves. In other words, a country that has been included in one wave is not necessarily included in the next (for a complete list of all the country-years included in our analyses, please see Table B1 in the appendix). Originally, the number of country-years included in the ESS integrated data set (rounds 1-5) at level-2 was 123. However, eight of the 123 country-years for which we have social trust data had to be excluded because individual-level data for religious denomination was missing, leaving us a total of 115 country-years to be included in the analyses[23]. For each country-year, a representative sample of approximately 2,000 individuals is surveyed. In order to compare the different models properly, where variables are constantly taken in and out, it is important that the number of N in each of the models is the same. Respondent that have not given an answer to *all* of the questions related to the variables included in our study will be

[20] In this master's thesis, we have operationalised the independent variable *Welfare regime* in three different ways. We will undertake three separate multilevel regressions analyses, each one using a different regime categorisation. For more about this, see Section 3.5.1 'Welfare regime' and Table D1 in the appendix. From here onwards, to the end of this chapter, we will base our descriptions and reflections on the final categorisation (categorisation 3), where N level 1 = 207,942, N level 2 = 115, and N level 3 = 30, unless otherwise specified.
[21] For more information about the European Social Survey, please visit: http://www.europeansocialsurvey.org/
[22] http://www.nsd.uib.no/
[23] The excluded country-years were Bulgaria (wave 3 – 2006), Cyprus (wave 3 – 2006), Finland (wave 2 -2004), France (wave 1 -2002), France (wave 2 -2004), Hungary (wave 2 – 2004), United Kingdom (wave 2 – 2004) and United Kingdom (wave 3 -2006).

excluded. Originally, the number of cases in the data set (level-2 units=115, level=3 units=30) was N=223738. All of the cases that had a missing value on one or more of the variables were filtered out of the analysis. As a result, we ended up with N=207,942. In other words, 15796 cases were excluded from the analysis. This is not a very large number, as it means that only a bit more than 7% of the cases were filtered out. We could therefore undertake our analyses in Chapter 4 without worrying too much about missing values.

Although the ESS integrated data set are suffering from some weaknesses (e.g. missing values), we still consider it the best data set available with regards to measuring the level of social trust across countries. We could for instance have used data from the World Values Survey (WVS) instead. However, this data set only contains a *dichotomous* variable for social trust. Based on the argument of Zmerli and Newton (2008), we consider employing the ESS data (with a 11-point scale measuring social trust) a better option when operationalising our dependent variable (see a more detailed discussion of this in Section 3.4 'The Dependent Variable'). Another reason for using ESS data is that the countries are fairly similar, since they are all in Europe and assumed to be somewhat similar when it comes to their history, economic/political development and experiences. This point has been emphasised by Oorschot et al. (2006: 164), who have stated that "[f]rom a global vantage point Europe, today's European countries have much in common. They are all modern, relatively affluent, and have more or less comprehensive (post) industrial welfare states". At the country-year level (level-2) we have one continuous variable (*GDP per capita*), and at the country level (level-3) we have one continuous variable (*Ethnic fractionalisation)* and one categorical variable (*Welfare regime*). The data on the country-year level has been taken from the World Bank – World Development Indicators[24], and the ethnic fractionalisation data has been taken from Alesina et al. (2003). Our categorisation of welfare regimes is based on Esping-Andersen's (1990) work, while also taking into account the research of a number of other authors (this will be discussed in more detail in Section 3.5.1 – 'Welfare Regime'). Neither the ESS, the NSD, nor any of the other employed data sources, are responsible for the analyses or interpretations made in this master's thesis. The multilevel analysis has been performed using Stata, version 13.1. For descriptive statistics, we have used the Statistical Package for the Social Sciences (IBM SPSS), version 21.

[24] World Bank – World Development Indicators: http://data.worldbank.org/

3.2) Why multilevel analysis?

The 'workhorse' of modern social-science statistics is various kinds of regression analysis (Moses and Knutsen 2007: 81). In this master's thesis, the method chosen is *multilevel* regression analysis. The reason why this particular method has been chosen is because we previously have argued that variables observed at the *state-level* (i.e. welfare regime, ethnic fractionalisation, and GDP per capita), have impact on a variable at the *individual* level (i.e. social trust). According to Diez-Roux (2000: 172), "[t]he idea that individuals may be influenced by their social context is a key notion in the social sciences". The aim of multilevel analysis is to account for variance in a dependent variable measured at the lowest level (i.e. individual-level social trust), by considering information from all levels of analysis (Crepaz 2008; Steenbergen and Jones 2002). One of the primary assumptions of multilevel modelling is that the data used are hierarchically structured, in other words, the units at one level are nested within units at another level (Hox 2010; Strabac 2012). In our analyses, where we use the ESS data set, units at level-1 (respondents/individuals) are nested within units at level-2 (country-years), and the units at level-2 are nested within units at level-3 (countries). The macro variables are added at both the country-year level (*GDP per capita*), and at the country level (*Ethnic fractionalisation* and *Welfare regime*). There are different ways to perform a multilevel analysis. In this master's thesis, we have decided use a random intercept model. In the random intercept model we assume that the effects of the variables are the same, but that the intercept varies between the level-2 and, in this case, level-3 units (Strabac 2012: 216). This is different from a random coefficient (slope) model, where the level-1 variables are allowed to vary between the countries (ibid.: 220)[25].

Several authors have pointed out the advantages of multilevel modelling (Crepaz 2008; Diez-Roux 2000; Steenbergen and Jones 2002; Strabac 2012). Steenbergen and Jones (2002: 219) emphasise how multilevel data give researchers the possibility "to combine multiple levels of analysis in a single *comprehensive model* by specifying predictors at different levels". Since one is allowed to take into account multiple levels of analysis, the model "is less likely to suffer from model misspecification than when compared to models comprised of a single

[25] In order to justify the use of a random coefficient model, we need good theoretical reasons for believing that the effect of a level-1 variable should vary substantially from one level-2 or level-3 unit to another (Hox 2010: 33). In the academic literature and in the previous research we have been referring to throughout this master's thesis, we have not come across the existence of such theoretical reasons. Hence, the use of a random coefficient model cannot be justified, and we have therefore deemed the use of a random intercept model to be more appropriate.

level" (ibid.). Usually, one distinguishes between *statistical* (or methodological) and *substantive* reasons for choosing multilevel modelling over other research techniques (Steenbergen and Jones 2002; Strabac 2012).

As already mentioned, in data sets such as the ESS, the respondents (level-1) are nested in country-years (level-2), which are then nested in countries (level-3). Previously, we have discussed how an individual's level of social trust might be influenced by the society in which (s)he lives. In the theory presented in Chapter 2, we gave an account of how contextual factors such as national wealth, ethnic fractionalisation, and type of welfare regime could affect social trust. Kreft and De Leeuw (1998) have pointed out how observations that are close in space and/or time are likely to be more similar than observations far apart in space and/or time. Due to their shared history, contextual environment and experiences, it is reasonable to assume that respondents from the same country share certain characteristics that are different from individuals in other countries, and that this is something that could affect the dependent variable. In other words, factors at level-2 and level-3 might influence observations at level-1. If variables at the country-year and country level exert an impact on the dependent variable at the individual level, the observations at the micro level are not *independent*, one could rather say that they are *grouped* (Strabac 2012). According to Steenbergen and Jones (2002: 235), the presence of a common context causes "dependencies between observations". By using OLS-regression to analyse ESS data, and not taking into account that the respondents are clustered, the assumption of statistical independency is violated. From a statistical point of view, ignoring the hierarchical structure of this kind of data is likely to result in an inaccurate estimation of the standard errors and the coefficients (to be more precise, the estimated standard errors will typically be too low, and the test-statistics too high) (Steenbergen and Jones 2002; Strabac 2012). This would in turn increase the likelihood of committing a type I-error, i.e. discarding *H0,* even if it is correct; the "predictors appear to have a significant effect when in fact they do not" (Steenbergen and Jones 2002: 220). A multilevel model will take the statistical dependency of the observations into account. This allows us to combine several levels in one single model by specifying the different levels. The variables that are found at the different levels will be included in the models simultaneously, and the resulting coefficients will be estimated in a statistically correct way (Strabac 2012: 206). This is an important methodological reason for employing multilevel analysis.

While the choice of multilevel modelling thus can be justified from a *statistical* perspective, it is also important to remember that there are also *substantive* reasons for employing this method. As discussed earlier, the benefit of using a three-level model is not only confined to methodological issues, but also to theoretical ones. In the theory presented in Chapter 2, we have argued that social trust is affected not only by individual-level factors[26], but also by factors at the contextual level. The advantage of a multilevel analysis is that we in addition to controlling for variables at the individual level, also are able to control for variables at the country-year and the country level (level-2 and level-3 respectively), such as *GDP per capita, Ethnic fractionalisation,* and *Welfare regime.* In this master's thesis, it is the variables at level-3 that we are most interested in. By using another method of analysis, it would not have been possible for us to simultaneously measure the effect of these variables in an adequate way (Steenbergen and Jones 2002).

3.3) Limitations to our analyses

When undertaking quantitative analyses, it is important to take causality, validity, and reliability into consideration, and be aware of the potential problems related to these issues. The reason for this is that these three concepts tell us something about the statistical quality of our data and analysis. If one does not take these three issues into account, it is likely that the result of our analyses will be interpreted in a wrong way, and in the worst case leading us to the wrong conclusions (Ringdal 2007). In this section, we will discuss these three concepts in turn (Sections 3.3.1-3.3.2). In Section 3.3.2, we will also discuss a potential problem that might arise when using ESS data and similar kinds of data sets, namely that of cross-cultural comparability.

3.3.1) Causality

A potential problem when doing quantitative research is causality. The results of a regression analysis can only tell us if different variables are correlated, not how they are causally linked. As Moses and Knutsen (2007: 26) have pointed out, "patterns and regularities can be observed, causality cannot (…)". It is therefore very important to state whether trust is dealt with as a dependent or independent variable when undertaking research (in this master's thesis, social trust is considered to be the dependent variable). In the type of modelling

[26] In this case, an OLS-regression would have been sufficient.

employed in this master's thesis, there could for instance be a possibility of reverse causation. Stated differently, there is a possibility that the left-hand side variable (the dependent variable) has an influence on the right-hand side variables (the independent variables). As Delhey and Newton (2005: 314) have emphasised: "[I]n almost every case of an association between trust and another variable, the link may be one of cause or effect, or both". While we have argued that what type of welfare regime a country has, along with its level of ethnic fractionalisation and national wealth, exerts an impact on social trust, we could for instance imagine that the direction of causality goes in the opposite direction (Jensen and Svendsen 2011; Rostila 2007; Tamilina 2010). As Rostila (2007:236) has pointed out: "[T]he theoretical arguments about the impact of different types of welfare state regime on social trust could also suffer from reversed causality, since high-trusting countries could very well have developed into social-democratic ones". Similarly, national wealth may be associated with social trust either "because it helps to reduce risk, or because trust encourages economic growth" (Delhey and Newton 2005: 314). Such "chicken and egg" problems of cause and effect can often be difficult to sort out. Because of this, it is important that the interpretation of the regression results is firmly backed up by a solid theoretical framework that says something about the direction of causality. If such theoretical arguments are not provided, the result might be incorrect interpretations of the results, leading us to the wrong conclusion. In the case of welfare regime, the assumption prevailing in the academic literature is that the direction of causality goes from the welfare state to social trust (Tamilina 2010). Earlier in the master's thesis (Chapter 2), we have provided both theoretical and empirical arguments supporting this claim (Jensen and Svendsen 2011; Kumlin and Rothstein 2005; Larsen 2007; Lee 2012; Rothstein and Uslaner 2005). By relying on the work by a number of authors (Alesina and Ferrara 2002; Bjørnskov 2007; Delhey and Newton 2003, 2005; Knack and Keefer 1997; Zak and Knack 2001) we also assume that it is ethnic fractionalisation and national wealth that affect social trust, not the other way around. By taking these previous studies into account, we consider the direction of causality between our variables to be sufficiently clarified. This reduces the probability that our analyses and interpretations of results are incorrect due to the issue of reverse causation[27].

[27] Another way to deal with the potential problem of causality is to lag one or more of the independent variables. In this master's thesis, we have lagged the macro-economic measure at level-2, *GDP per capita*, one year for time dependence. This means that when predicting the value of social trust in a particular year (ESS wave), we use the GDP per capita value from the previous year. This reduces the possibility for reverse causality. An additional reason for lagging this variable is that it is reasonable to believe that an individual's level of social trust do not change immediately after a decrease or an increase in national wealth, and hence a one-year lag is necessary (this topic will also be discussed in Section 3.5.2 'Ethnic fractionalisation and national wealth').

3.3.2) Validity, reliability, and cross-cultural comparability

According to Ringdal (2007: 86), the concept of validity denotes whether the researcher measures what (s)he is in fact interested in examining. Does the employed survey questions and data actually measure what was intended from a theoretical point-of-view? Netemeyer et al. (2003: 71) uses the term 'construct validity', which basically refers to the extent to which an operational measure actually reflects the concept being investigated. More specifically, it is viewed as "the degree to which inferences legitimately can be made from measures used in a study to the theoretical constructs on which those operationalizations are based" (ibid.). In this master's thesis, it is for instance relevant to judge the validity of our dependent variable *Social trust*[28]. Even though this variable, which is a scale consisting of three items, at first glance seems to be very unproblematic, it is important to be aware that it has been criticised. One of the criticisms is that the trust items are "somewhat ambiguous with respect to which 'people' respondents have in mind" (Knack and Keefer 1997: 1256). Also Delhey and Newton (2005) have emphasised this, by pointing out how there might exist an ambiguity about what is meant by 'most people' in the question. While it is no doubt that this term covers a wider range than family, friends, and neighbours, how far the circle really extends is quite open to interpretation: "Trusting people may extend the boundaries wider than low trust people, who may restrict 'most people' to those they trust" (ibid.: 314). However, Delhey and Newton (ibid.) continue by saying these objections are rather speculative, and they admit that "there is good evidence to show that the question does its work adequately".

In addition to assessing the *validity* of our data, it is also important to take the concept of *reliability* into consideration. According to Ringdal (2007: 86), reliability tells us something about how reliable our measurements are, i.e. whether repeated measurements will give us the same results. If measurement errors have occurred when collecting, processing or analysing the data, this will have a negative impact on the reliability of our research. When using the ESS data, there might be problems connected to the execution of the survey. There is a possibility that there could be sporadic measurement errors in the data employed, and missing

[28] Usually, social trust data is based on the variable *ppltrs*t in ESS, where the question asked is: "Generally speaking would you say that most people can be trusted or that you need to be very careful in dealing with people?" In this analysis, additional two variables, namely *pplfair* and *pplhlp*, were also added, so that the dependent variable is a scale based on three different questions. The variable *pplfair* tells us whether the respondents think that most people try to take advantage of them, or try to be fair. In the variable *pplhlp*, the respondents have been asked if they think that other people are helpful most of the time, or mostly looking out for themselves.

or 'wrong' values[29] on some of the variables might pose a challenge. However, considering the large number of units in our multilevel analysis (N=207,942), it is not very likely that this will affect the results and conclusions of the analysis significantly. When constructing a scale, as we have done for the dependent variable *Social trust,* it is important to measure its *internal consistency reliability* (Ringdal 2007: 87; Netemeyer et al. 2003: 47) What this means, and how this is done will be dealt with in more detail in Section 3.4 'The Dependent Variable'. Another potential limitation to our study is the comparability between surveys, or more specifically the problem of 'cross-cultural comparability' (King et al. 2004). Are we really comparing the same in all of the countries included in the survey? A person's cultural background is very much dependent on the country in which s(he) lives. When analysing comparative survey data, it is important to be aware that questions or words may take on different meanings when translated into another language. Bjørnskov (2007) has pointed out that the problem of cross-cultural comparability might be present when dealing with the dependent variable of this study, namely social trust. He highlights that when asking respondents the survey questions related to social trust, it is not made clear to them "whom to trust, in which situations or under which circumstances" (ibid.: 2): "This ambiguity could make it rather difficult for people to answer the question, implying that it might pick up culturally specific perceptions of the context in which it is asked (…)" (ibid.). However, the problem of cross-cultural comparability would probably have been a much bigger problem if we had included countries from all over the world in our data set[30]. To reduce the likelihood of getting wrong results due to the issue of cross-cultural comparability, it also makes more sense to review variables that describe actual aspects or characteristics of the respondents (e.g. gender, age, income etc.), rather than attitudes. The reason for this is that attitude variables often are more inclined to be affected by the cultural context in which the respondent lives.

3.4) The dependent variable

The dependent variable of this study is social trust at the individual level. Usually, social trust data is based on the variable *ppltrs*t in ESS integrated data set, where the question asked is:

[29] For instance, this could be due to people not knowing the answer to a question, or not being willing to answer it.

[30] As we are only investigating the determinants of social trust in European countries, in which the culture and historical past is quite similar, we assume that the problem of cross-cultural comparability has not affected the validity or reliability of the data in any substantial way.

"Generally speaking would you say that most people can be trusted or that you need to be very careful in dealing with people?" According to Zmerli and Newton (2008), this question, which was devised by E. Noelle-Neumann in 1948, can be considered the 'classic trust question'. In addition to the *ppltrst* variable, we have also used the variables *pplfair* and *pplhlp* from the ESS integrated data set when operationalising the concept of social trust. These two questions were added by M. Rosenberg in the 1950s in order to "form a more reliable and valid trust scale" (ibid.: 709). The variable *pplfair* tells us whether the respondents think that most people try to take advantage of them, or try to be fair. In the variable *pplhlp,* the respondents have been asked if they think that other people are helpful most of the time, or mostly looking out for themselves.

In order to create an aggregated measure of social trust, we have used factor analysis and scale construction, so that the dependent variable is a scale based on these three different questions from the ESS integrated data set. In all of these three different questions, the respondent shall state how much they agree with the statement by using a 11-point scale with the lowest category denoting a low level of social trust. Zmerli and Newton (2008) argue that using a 11-point scale provides a great improvement over the dichotomous measure of social trust, which is for instance used in the World Values Survey (WVS) and the Eurobarometer[31]. The goal of factor analysis is to represent a relatively large amount of observed variables using a smaller amount of hypothetical underlying variables. There are two main types of factor analyses: *exploratory and confirmatory* (Ulleberg and Nordvik 2001). In this master's thesis we have used exploratory factor analysis since we have no a priori assumptions of the number of factors present within our set of variables. The method of extraction of factors used in this master's thesis is *principal component analysis*. The name *factor analysis* can also be used for this method as long as N is large (ibid.). In our analysis, we have 207,942 units at the individual level, so this could be done without any problems.

The result of the principal component analysis (see Table C1 in the appendix) shows that that the variables *pplfair, ppltrst,* and *pplhlp* have a single underlying factor. After combing all of these three variables into a scale, we end up with the dependent variable *Social trust*, where 0 denotes a very low level of social trust, and 30 means that the person has a very high level of social trust. When creating a scale, it is important to undertake a reliability analysis to make

[31] In these surveys, respondents are usually only offered a dichotomised option when being asked the trust questions.

sure that the questions are measuring more or less the same thing[32]. One of the easiest ways to test whether a scale has internal reliability is to use Cronbach's alpha, which always has a value between 0 and 1. The value will be 1 if all the respondents have answered the same category in all of the questions. Normally we would like the Cronbach's alpha to be higher than 0.7, but less than 0.8 (Nunnally 1978: 245). In this analysis, the Cronbach's alpha of the dependent variable *Social trust* was .781, which means that the internal reliability of the scale is good enough. For the purpose of our analysis, we therefore assume that our dependent variable represents an underlying continuous theoretical variable measuring social trust[33]. According to Strabac (2012: 207), one should also make sure that the dependent variable is approximately normally distributed before undertaking a multilevel regression analysis. In order to assess the distribution of our dependent variable *Social trust*, we must look at its skewness[34] and kurtosis[35]-values. In our case, the skewness value (standard error in parentheses) is -.279 (.005), while the kurtosis value is -.270 (.011). This indicates that our dependent variable is (sufficiently) normally distributed (see Figure C1 in the appendix), which means that the dependent variable *Social trust* could be used in our analysis without any noteworthy problems.

3.5) Independent variables at the contextual level

At the macro level, we will add three variables. At level-3 (country level), the categorical variable *Welfare regime* will be added, in addition to the continuous variable *Ethnic fractionalisation.* At level-2 (country-year level) we will add a control variable representing national wealth, namely *GDP per capita*, which is a continuous variable. In this section, these three variables will be discussed in turn[36].

[32] A scale should only be made if respondents who have a low value on one question also have low values on the other questions in the scale (and vice versa).

[33] Although we treat our dependent variable as a continuous variable (Ringdal 2007: 79-82) in our analysis, it should be noted that it is in reality a categorical variable with eleven categories. However, as this variable has more than five categories, this should not cause any severe problems (Strabac 2012: 207).

[34] Skewness denotes the situations in which one of the tails is longer than the other, concerning the distribution of a variable. In a normal distribution, the value of skewness is zero. Negative skewness values indicates a negative (pile up on the right) skewed distribution of the variable in question, and vice versa for positive skewness values (Field 2000; Wright and Herrington 2011)

[35] Negative kurtosis (platykurtic) values indicate a flat distribution whereas positive values (leptokurtic) indicate a pointy distribution. Values above 0 show kurtosis in excess of the normal distribution.
Values greater than 1.96 are considered problematic (Field 2000; Wright and Herrington 2011).

[36] When performing a multilevel analysis, it is necessary to make variables that identify the different levels. Since we use a three-level analysis in this thesis, we had to make variables identifying both level 2 and level 3. The three contextual variables used in this analysis (*GDP per capita*, *Ethnic fractionalisation*, and *Welfare regime*) were then coded according to the respective identification variables at level-2 and level-3.

3.5.1) Welfare regime

As mentioned previously, and as shown in the hypotheses 1-3, the aim of this master's thesis is to investigate the "stratification effects of welfare states" (Tamilina 2010: 11) and the impact this has on social trust. Ideally, we would have tested the mechanism at work in the different welfare regimes directly, by including various measures for universalism, familialism, and selectivism in our analyses[37]. However, as we do not have sufficient data for this for the country-years and/or countries covered by the ESS, we rather proxy for this by using various welfare regime categorisations[38]. It is however important to be aware of the limitations of this, as welfare regimes constitute much more than just the design of policies/measures of stratification (e.g. public expenditure, level of economic inequality, level of associational membership and participation etc.)[39]. It might very well be that the difference in social trust among the various welfare regimes could be partly explained by these factors as well, and not solely by the variation in policy design. If we base our categorisation on Esping-Andersen's (1990) original threefold typology and countries, the number of countries will be limited to thirteen, as five of the countries classified by Esping-Andersen are not included in the ESS integrated data set[40] (for an overview of the countries included in the original categorisation, please see Table D1 in the appendix). According to Maas and Hox (2005), higher-level sample sizes often impose limitations and restrictions when undertaking multilevel analyses. One rule of thumb is that there should be a minimum of 30 units at each level of the analysis (Hox 2010). Having only thirteen countries represented in our analyses would therefore impose a weakness on our study. One way to improve is to place more countries in Esping-Andersen's (1990) original threefold typology. Alternatively, one could

[37] Esping-Andersen (1990: 70-71) uses indices of 'average universalism' and 'average benefit equality' (the ratio of guaranteed basic social benefit to the legal maximum benefit possible in the system) as indicators of universal welfare policies. Indices of corporatism (number of occupationally distinct public pension schemes) and etatism (expenditure on pensions to government employees as % GDP) are employed as indicators of familiaristic welfare policies. The degree of selectivism is denoted by looking at the proportion of private pensions (as % of total pensions), the proportion of private health spending (as % of total health spending), as well as the proportion of means-tested poor-relief (as % of total public social expenditure).

[38] In other words, we argue that while universal policies are prevalent in social democratic welfare states, the majority of social policies in conservative and liberal welfare states can be characterised as familiaristic and selective respectively.

[39] As some authors (Jallade 1992; Rothstein and Uslaner 2005) have pointed out, the level of economic equality within a country is related to what kind of welfare regime it belongs to (and to the type of policy design dominating within each welfare regime). It would therefore be both theoretically as well as methodologically wrong to include a measure of economic equality (e.g. the gini coefficient) in the *same* model as the one where our measure representing welfare regime has been included. Rothstein and Uslaner (2005: 42-43) have for instance stated that "universal social policies are more effective than selective ones in creating [economic] equality and thereby social trust".

[40] These countries classified by Esping-Andersen that are not part of the ESS integrated data set are Australia, New Zealand, Canada, the United States, and Japan.

use a different welfare regime typology with additional categories. In this master's thesis, we will use both of these methods to expand the number of countries in our study. Hence, our analyses will be based on three different categorisations, where the number of countries and/or the number of categories varies between the different categorisations (see Table D1 in the appendix).

In our first categorisation (seventeen countries, three welfare regime categories), Esping-Andersen's (1990) original threefold typology is the point of departure. In this categorisation, Esping-Andersen's thirteen European countries of study have been included, as well as four countries that later have been categorised as conservative, namely Luxembourg, Greece, Portugal and Spain (Arts and Gelissen 2002; Esping-Andersen 1999; Rostila 2007). In our second categorisation (seventeen countries, four welfare regime categories), our sample consists of the same seventeen countries as in the first categorisation. However, in the second categorisation, four of the countries categorised as conservative in the first categorisation[41] have been singled out to form a new category of their own, namely the Mediterranean welfare regime category (Ferrera 1996). As the number of countries in the first and the second categorisations are the same, we can easily compare how the result of the analyses change when the Mediterranean regime type is included, and justify whether this addition constitute an improvement of our study. In the third categorisation (thirty countries, five welfare regime categories) we are following the suggestion by Gal (2010), who has argued that the Mediterranean welfare regime category should be extended[42]. Following the suggestion by a number of authors (Deacon 2003; Fenger 2007; Rostila 2007), we have included a fifth category, namely the post-communist welfare regime category[43].

Table A1 and Figure D1 in the appendix suggests clear differences between welfare regimes when it comes to levels of social trust. We can see that the social democratic welfare states generally have very high levels of trust compared with the other European countries. At the other extreme, the Mediterranean and post-communist countries have very low levels of trust. Somewhere in between, we find the liberal and conservative welfare regimes. Figures D2-D6

[41] These countries are Greece, Italy, Portugal and Spain.
[42] As a result of this, three additional countries have been included in the group representing the Mediterranean welfare regime: Cyprus, Israel, and Turkey.
[43] In this analysis, ten countries have been put in this category: Russia, Estonia and Ukraine (which were all part of the USSR), as well as Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Slovakia and Slovenia (countries that were not part of the USSR, but which were Soviet satellite states for a long time).

in the appendix illustrates that there is also some variation within each regime type. One of the main aims of this master's thesis is to see whether the indications given by the descriptive statistics also holds when controlling for other factors (at both the individual as well as the contextual level) by means of multilevel modelling. It is important to be aware that Esping-Andersen's (1990) typology, as well as other attempts to typologise welfare regimes, have been met with a substantial amount of criticism (Baldwin 1996; Fenger 2007; Lewis 1997). Baldwin (1996: 29) has for instance dismissed the business of welfare modelling in general, stating that "[t]ypologizing (...) is the lowest form of intellectual endeavour", being the "preserve (…) of the bean counter and bookkeeper". In his work, Esping-Andersen (1999: 73) himself also has pointed out the limitations connected to typologies: "They [i.e. typologies] provide a snapshot of the world at one point in time (…). Any typology of welfare regimes therefore remains valid only as long as history stands still". However, Abrahamson (1999: 394-5) has pointed out that although there is some disagreement about which particular typology to apply, "the assumption that welfare states cluster around certain distinct regimes has become commonplace to the extent that it is taken for granted".

3.5.2) Ethnic fractionalisation and national wealth

In order to test for hypothesis 4, we would like to include a measure of ethnic fractionalisation in our analyses. According to Patsiurko et al. (2012: 196), "[o]ne of the most ambitious and widely used" indices of ethnic fractionalisation is the one offered by Alesina et al. (2003) (for descriptive statistics see Table D2 in the appendix). This data set was originally compiled in order to examine the impact fractionalisation in society has on the quality of government institutions (ibid.). In this master's thesis, we will use parts of this data set to investigate the statistical relationship between ethnic fractionalisation and social trust. The variable representing ethnic fractionalisation has been manually coded into our data set as a variable at level-3. In this index, complete ethnic homogeneity is denoted by the value of 0, while complete ethnic heterogeneity is denoted by the value of 100[44]. Although Patsiurko et al. (2012) to a large extent highlight the advantages of this data set, they are also making us aware that it has been met with some criticism. They particularly focus on two weaknesses with this data set. First of all, the data set provided by Alesina et al. (2003) only offers one-time measures of ethnic fractionalisation, which makes us "unable to say anything about

[44] Originally, the index only ranges from 0 to 1, but in this master's thesis we have multiplied all the values by 100 so that it ranges from 0 to 100.

change over time" (Patsiurko et al. 2012: 196). Second, there is inconsistency in terms of the sources and the years covered. For the thirty countries included in our multilevel analysis, the data has been collected from six various sources. Although the majority of this data is from the 1990s and early 2000s, the data for Italy dates as far back as 1983. This clearly affects the comparability of the data. We could justify this by arguing that ethnic fractionalisation is something that does not change dramatically from year to year. However, due to the extensive globalisation in recent years, and the increased movement of people within Europe, it would probably have been more accurate to use country-year data covering the five different ESS rounds instead of the one-time measure provided by Alesina et al. (2003). Although this data set clearly has its weaknesses, we will still use it in our analysis, as it is, as far as we know, the best one currently available (Patsiurko et al. 2012).

In addition to welfare regime and ethnic fractionalisation, and taking hypothesis 5 into consideration, our multilevel analyses should be further adjusted for a contextual variable, namely national wealth. We proxy for the wealth of a nation by using *GDP per capita*[45] (in constant 2005 US$) (for descriptive statistics see Table D3 in the appendix). This data is taken from the World Bank – World Development Indicators[46], and it has been manually coded into our data set as a variable at level-2. Sometimes, if the variable representing GDP per capita is suffering from a non-normal distribution, the log-transformed version is used instead. However, in our case, the GDP per capita variable (in $1000) turned out to be more normally distributed than the natural logarithm (ln)-transformed version. Hence we have not decided to use the log-transformed version of the GDP per capita variable in our analyses[47]. Due to causality issues we lag independent variables whenever the theory would indicate that it takes time for it to influence the dependent variable. With this in mind, in order to predict the effect on individual-level social trust in a certain year (ESS round), we decided to use GDP values from the year previous to which each one of the surveys took place[48].

[45] GDP per capita is gross domestic product divided by midyear population. The values representing GDP per capita has been divided by 1000 in order for us to easier interpret the results (by avoiding many zeros in the coefficient). As a result of this, this variable shows us how much individual-level social trust changes when the GDP per capita at the country-year level increases by $1000.

[46] http://data.worldbank.org/

[47] For the GDP per capita variable (in $1000) (standard errors in parentheses), skewness is .377 (.005) and kurtosis is -.453 (.011). If log transforming the GDP per capita variable, skewness is -1.087 (.005) and kurtosis is .853 (.011). Hence, the former variable is more normally distributed than the log-transformed variable.

[48] Lagging is the number of periods that an independent variable in a regression model is 'held back' in order to predict the dependent variable. In other words, for Wave 1 – 2002, we have used the GDP per capita value from 2001, and so on.

3.6) Independent variables at the individual level

An advantage of multilevel modelling is that it allows us to explore the influence of contextual-level variables on peoples' level of social trust. However, H6-H9 shows that also individual level explanations are important, and need to be tested for. At the individual level, we have included measures in order to test for a person's 'success in life', as well as the influence of past negative experiences and religious denomination. We have also included several demographic control variables. One of the main reasons for why we do this is to avoid Hauser's (1970) contextual fallacy. Hauser (ibid.) claimed that contextual effects often lacked substance, and that these effects rather were the result of poorly specified individual-level variables. He used the term 'contextual fallacy' to describe this phenomenon.

Based on hypothesis 6, we would like to test for the variables *Education* and *Satisfied with household income*[49]. We argue that both of these variables can be used as indicators of individual success. The first of these variables (*eduyrs)* tells us how many years of full-time education the respondent has completed. This variable is a little bit problematic because of some extreme values (outliers). However, because of the large sample size at the individual level (N=207,942), we do not expect this to affect the results of our analyses in any substantial way. The variable *hincfel* has been recoded into the dummy variable *Satisfied with household income.* This is a subjective measure, telling us something about the individual's perception of the economic situation of the household. The categories 'Difficult on present income' and 'Very difficult on present income' have been given the value of 0 (this is the reference category, referring to those who are struggling with present income), while the categories 'Living comfortably on present income' and 'Coping on present income' have been given the value 1. Ideally, we would have preferred to use a variable measuring actual household income instead of just feelings about present income. The ESS data set contains such a measure, but as the method measuring household's total net income in ESS Rounds 4 and 5 (*hinctnta*) is different as compared with the three first rounds (*hinctnt*), this measure is difficult to use in our analyses without a substantial amount of recoding[50].

[49] Originally we would have preferred to include a measure on the individual's income. However, as such a variable does not exist in the data set, we have decided to use a measure on household income instead.

[50] In addition, the household's total net income variable contains a lot of missing values. For *hinctnt*, there are 25941 missing values. For *hinctnta*, there are 19348 missing values. Using the variable representing actual household income instead of *hincfel*, the number of units included in our analyses would have been reduced dramatically.

With regards to hypothesis 7, the dummy variable *Not economically active* should be tested for in our analyses. This variable is based on the variable *mnactic*, which tells us about the respondent's main activity the last seven days. This variable consists of nine categories. The categories paid work, education and community/military service have been given the value of 0, while the categories unemployed (looking for job), unemployed (not looking for job), permanently sick or disabled, retired, housework, and other have been given the value of 1. Taking hypothesis 10 into consideration, we will also test for the cross-level interaction term *Not economically active*Welfare regime* when conducting our analyses. Based on hypothesis 8, we would like to include the dummy variables *Crime victim* (*crmvct)* and *Member of a discriminated group* (*dscrgrp)* in our model. The value of 1 was given if the respondent or a household member had experienced burglary or assault the last 5 years, or if the respondent was a member of a group discriminated against in the country. Otherwise the value 0 was given. According to hypothesis 9, religious denomination might have an influence when it comes to a person's level of social trust. In order to test for this, the variable *rlgdnm* was used, which tells us what religious denomination the respondent belongs to at present. This variable was made into a set of dummy variables, representing 'Protestant', 'Catholic' and 'Other religions'. In this set of dummy variables, 'Not religious' was set as the reference category.

In addition to the independent variables highlighted by the theory, there are also other variables that potentially could influence the results of the multilevel regression analysis. As control variables, we are including a number of demographic measures that earlier have been shown to have an impact on social trust; namely gender, age and the geographic location of the domicile in which one resides (Alesina and Ferrara 2002; Ivarsflaten and Strømsnes 2013; Kumlin and Rothstein 2005; Oorschot and Arts 2005; Oorschot et al. 2006). The variable for gender (*gndr)* was recoded into the dummy variable *Woman*, where women were given a value of 1, while men were given a value of 0. The variable *agea*, renamed into *Age*, have been used to represent the age of the respondent. Similarly to what was the case for the variable *Education*, this variable should be treated with caution because of some extreme values (outliers). However, as we pointed out earlier, this is unlikely to cause any severe problems due to the large sample size. For age, we have also added a squared term, Age^2, since the study of Alesina and Ferrara (2002) showed a curvilinear relationship between age and social trust. Another variable that have been included as a control variable is the variable *domicil*, which tells us whether the respondent lives in an urban or a rural area. This variable was transformed into a set of dummy variables representing 'Living in the suburbs', 'Living

in a town', 'Living in a village' and 'Living on a farm/in the countryside', with 'Living in a big city' chosen to be the reference category. In addition to the demographic control variables already mentioned, we have also included a time control in our analyses. As the ESS integrated data set used in our analyses contains *repeated cross-sectional data*[51] from five different surveys, we are allowed to study trends in social trust over time (Hox 2010). The variable *essround* was made into a set of dummy variables: 'ESS Round 2', 'ESS Round 3', 'ESS Round 4', and 'ESS Round 5', with 'ESS Round 1' set as the reference category. This set of dummy variables will show us if there has been a significant change in social trust from 2002 to 2004, 2006, 2008, and 2010 respectively. In the following Table 1, descriptive statistics for all the variables employed in our analysis are presented. In the next chapter, we will test all the hypotheses previously mentioned in this master's thesis and present the results of our analyses, as well as providing an extensive discussion of our findings.

TABLE 1: Descriptive statistics (based on categorisation 3)

	N	Min	Max	Mean	%	Std. dev.
The dependent variable						
Social Trust	207,942	0	30	15.15		6.077
Time control						
ESS Rounds set of dummy variables[a]	207,942	0	4		0=18.2 / 1=17.8 / 2=17.1 / 3=23.8 / 4=23.0	1.429
Independent variables: Level 1						
Woman (dummy)	207,942	0	1		0=46.3 / 1=53.7	.498
Age	207,942	13	123	47.29		18.350
Domicile (set of dummy variables)[b]	207,942	0	4		0=21.7 / 1=11.7 / 2=29.9 / 3=30.8 / 4=6.0	1.230
Education	207,942	0	50	11.99		4.119
Satisfied with household income (dummy)	207,942	1	1		0=27.8 / 1=72.2	.447
Not economically active (dummy)	207,942	0	1		0=57.7 / 1=42.3	.493
Crime victim (dummy)	207,942	0	1		0=81.8 / 1=18.2	.385
Member of a discriminated group (dummy)	207,942	0	1		0=93.7 / 1=6.3	.243
Religious denomination (set of dummy variables)[c]	207,942	0	3		0=31.0 / 1=13.8 / 2=18.6 / 3=36.5	1.260
Independent variables: Level 2						
GDP per capita (in $1000)	115	1.57	75.87	28.60		17.012
Independent variables: Level 3						
Ethnic Fractionalisation	30	4.68	55.54	22.95		.162
Welfare regime (set of dummy variables)[d]	30	0	4		0=15.8 / 1=26.7 / 2=7.8 / 3=20.6 / 4=29.1	1.491

[a] 0=ESS Round 1 (2002), 1=ESS Round 2 (2004), 2=ESS Round 3 (2006), 3=ESS Round 4 (2008), 4=ESS Round 5 (2010).
[b] 0=Big city, 1=Suburbs/outskirts, 2=Town/small city, 3=Country village, 4=Farm/home in countryside.
[c] 0=Not religious, 1=Catholic, 2=Protestant, 3=Other religion.
[d] 0=Social democratic, 1=Conservative, 2=Liberal, 3=Mediterranean, 4=Post-communist.

[51] Repeated cross-sectional data is characterised by the same questionnaire being used for at least two separate surveys (conducted at different points in time), where the representative sample is different from survey to survey, but drawn from the *same* population.

4) Results and Discussion

Earlier in this master's thesis, we have argued in favour of a model that takes into account both contextual as well as individual-level factors. Employing multilevel modelling is thus preferred from both a theoretical as well as a methodological perspective. The main aim of this chapter is to present the findings from our multilevel regression analyses in a clear and understandable manner. This is done in order to find out whether the ten hypotheses (H1-H10) presented in Chapter 2 are confirmed, or whether they rather should be rejected. In Section 4.1, we will give a brief overview of the model building process. This will be followed by a presentation of the most important results, findings and interpretations from our multilevel regression analyses (Section 4.2). In Section 4.3 we will review all the hypotheses presented previously in this master's thesis, and discuss whether they have been confirmed or rejected by our study. This will help us to answer the research question already presented in the introductory chapter: *"What impact does welfare regime have on social trust?"* In Section 4.4, in order for our interpretations and conclusions to be deemed reliable, the assumptions of the final model will be tested.

4.1) Model building

In our analyses, we will follow a bottom-up strategy of model building by starting with a simple model, and then adding complexities. In Hox' opinion (2010:55-6), this is a more useful method in multilevel modelling as compared with the top-down approach, as the latter may lead to convergence problems due to starting with a large, complicated model. Since the sample size is largest at the lowest level (the individual level), it is natural to build the model from there. By doing so, we are avoiding Hauser's *contextual fallacy*[52] (Hauser 1970). The bottom-up strategy also makes us able to see how much of the level-2 and level-3 variations are explained by compositional effects. The way we will proceed with our analyses is as follows: As already explained in Section 3.5.1 'Welfare regime', we have three different categorisations of welfare regime that we would like to test for (see Table 2)[53].

[52] Hauser (1970) criticised contextual analyses because he maintained that most alleged contextual effects lacked substance and were nothing but the artefacts of poorly specified individual-level models. Hauser (ibid.) used the term *contextual fallacy* to describe this phenomenon.

[53] For a more extensive overview of these three categorisations (including, for instance, a list of what specific countries have been included in each of the three different categorisations), please see Table D1 in the appendix.

TABLE 2: Overview of the three different welfare regime categorisations

	Categorisation 1	Categorisation 2	Categorisation 3
Based on the work of	Arts and Gelissen (2002); Esping-Andersen (1990, 1999); Rostila (2007)	Ferrera (1996)	Gal (2010); Deacon (2003); Fenger (2007); Rostila (2007)
Number of countries	17	17	30
Number of categories	Three categories: Social democratic, conservative, and liberal	Four categories: Social democratic, conservative, liberal, and Mediterranean	Five categories: Social democratic, conservative, liberal, Mediterranean, and post-communist
Main difference from previous categorisation	–	Four of the countries (Greece, Italy, Portugal and Spain) classified as 'conservative' in Categorisation 1 have now been singled out to form a distinct 'Mediterranean' welfare regime category.	Three countries (Cyprus, Israel and Turkey) have been added to the 'Mediterranean' welfare regime category. In addition, a fifth category has been included, namely the 'post-communist' welfare regime (encompassing ten countries previously belonging to the USSR/being Soviet satellites).
Where could I find the multilevel regression results?	Table E1 in the appendix (only including individual-level variables) and Table 3 (also including macro variables).	Table E1 in the appendix (only including individual-level variables) and Table 3 (also including macro variables).	Table E2 in the appendix (only including individual-level variables) and Table 4 (also including macro variables).

In Table E1 in the appendix and Table 3 we are testing Esping-Andersen's (1990) original threefold categorisation (Categorisation 1) with 17 countries. In the same tables, we are also providing the regression results for Categorisation 2[54]. Here the same 17 countries are included in the analysis, but following the suggestion of Ferrera (1996), a distinct Mediterranean welfare regime category has been added. In this way, we can test for H2, which predicted that people's level of social trust in the Mediterranean welfare states should be, on average, lower than people's level of social trust in the conservative welfare states, as a result of the even higher degree of familiaristic policies in the former compared to the latter[55]. In Table E2 in the appendix and Table 4, taking the work of Deacon (2003), Fenger (2007) and Rostila (2007) into consideration, ten countries have been included to form a fifth category, namely the post-communist welfare regime. In order to test for H3, it is necessary for us to include this welfare regime into our analysis. Following the argument of Gal (2010),

[54] Since N for categorisation 1 and 2 are the same at all of the three levels, Models 0-5 reported in Table E1 in the appendix are similar for the two categorisations.

[55] Since the sample sizes are the same for the two categorisations (N level 1=135,186, N level-2=71 and N level-3=17), we can easily compare the models, and see whether there is a justification for denoting some of the conservative countries in a distinct Mediterranean category.

three countries have been added to the Mediterranean category. One of the assumptions in multilevel analysis is that there are enough units at the highest level(s). Since multilevel analysis involves two or more levels, questions on the optimal sample sizes are difficult to answer. In OLS-regression, a rule of thumb is that one should have at least 10 units for each variable in the model, and the same goes for multilevel regression (Strabac 2012: 218). When undertaking multilevel analyses, Kreft has suggested that researchers should strive for a sample of at least 30 groups with at least 30 individuals per group (the '30/30 rule') (Hox 2010: 235). Our large sample sizes make us able to include several variables at the higher levels without having to worry about biased results (Hox 2010: 233-235).

Strabac (2012: 218-219) has emphasised that when discussing the statistical significance of the coefficients, one should take into account the large difference in units at level-1 as compared with level-2 and level-3. What is common for most multilevel models, is that they contain a very high number of units at the individual level, while the amount of units at the higher levels usually is substantially lower. In our data set, the low number of macro-level units limits the possibility of very significant findings for the variables at the contextual level. In our case, we have 207,942 units at the individual level (when using categorisation 3), and as a result of this also very weak coefficients can become statistically significant at the .05 level. On the other hand, we only have 115 units at the country-year level and 30 units at the country level. Here the coefficients must be strong in order for them to become statistically significant at the .05 level (ibid.). In our model, we therefore have decided to ignore level-1 effects that are not statistically significant at the 0.05 level or below, while variables on level-2 and level-3 that are statistically significant at the 0.1 level have been taken into account in the discussion. Coefficients that are statistically significant at the .001 level have been denoted by four stars, while three, two, and one stars have been given to coefficients that are statistically significant at the .01, .05, and .1 level respectively[56].

For each of the three categorisations, we have built the models in exactly the same way. After examining the empty model (Model 0), we will continue by adding the time control (Model 1), and the individual-level control variables (Models 2 and 3)[57]. We are then going to add the theoretically important independent variables at level-1 (Models 4 and 5). This is done in

[56] What this means, then, is that individual level variables with only one star of significance ($p<0.1$) in reality should be viewed as non-significant.

[57] The reason why we add the control variables first is that we want to see how much the non-theoretical variables affect our dependent variable before the theoretically important variables are added.

order to avoid Hauser's contextual fallacy, and to find out the extent to which level-2 and level-3 variations could be explained by compositional effects. After having included the time control and all the variables at the individual level, we will then proceed by adding the control variable *GDP per capita* at level-2 (Model 6), and the two theoretically important variables *Ethnic fractionalisation* and *Welfare regime* at level-3 (Models 7 and 8). In the last model (Model 9), we will test for the cross-level interaction effect *Not economically active*Welfare regime.* The models are estimated using *Maximum Likelihood*, and the test statistics is *Z* = (estimate)/(standard error of the estimate), also known as the *Wald test* (Hox 2010: 45-6). In order to compare the various models, we will look at the change in log likelihood (more specifically the –2 log likelihood, abbreviated –2LL), and see whether this change is significant or not by taking the likelihood-ratio test (LR-test) into account[58]. The –2LL tells us whether the model improves, as well as how good the model fits. If the value of –2LL is zero, this implies a perfect model.

For reasons discussed in Section 4.3 'Review of all the hypotheses', we consider Model 9 in Table 4 to be the best, and hence the final, model of our analyses. As a result of this, we have therefore focused more on this model as compared with the other models. For this model, we have for instance provided a figure to illustrate the curvilinear effect of age, as well as a figure to illustrate the cross-level interaction effect between *Not economically active* and *Welfare regime* (which we, due to space constraints, have not been able to offer for any of the other models in our analyses).

4.2) Results from the multilevel regression analyses

Table E1 in the appendix reports the findings from the five models including the time control and the independent variables at the individual level for categorisation 1 and 2, as well as the empty model. The empty model, Model 0, is without any explanatory variables. By running the empty three-level model[59], which shows us the total residual variation of the country-year and country levels, we find that the variance of the level-1 residual $Var(e_{ijk})$ is 25.793, the variance of the level-2 residual $Var(u_{0jk})$ is .095, and the variance of level-3 residual $Var(v_{0k})$

[58] The formula for the *log likelihood ratio* test is as follows: X^2_H (chi-square) = -2 ($LL_{K-H} - LL_K$).

[59] The equation representing the empty model is as follows: $Y_{ijk} = \beta_0 + e_{ijk} + u_{0jk} + v_{0k}$ In this equation, *e* represents the level-1 residual, and *u* and *v* represents the level-2 and level-3 residual respectively. The subscript *i* varies across level-1 units (individuals), while *j* varies across level-2 units (country-years), and *k* varies across level-3 units (countries).

is 6.369. These values can be used to calculate the Variance Partition Coefficient (VPC)[60] for the different levels in the analysis. The VPC shows us how much variance there is on each level. For the empty model, the VPC for level-1 = .7996, the VPC for level-2 = .0029, and the VPC for level-3 = .1974. This means that a bit less than 20% of the total variance in the dependent variable can be explained by differences between level-3 units (countries), and around .29% of the total variance can be explained by differences between level-2 units (country-years). This illustrates that the variation over time is less important than variation between countries. Almost 80% of the total variance in the dependent variable is on the individual level. Level-2 and level-3 does not explain a large proportion of the variance in the dependent variable. However, although the results from the empty model show us that these two levels explain a quite modest amount of the variance in social trust, the VPC values are still large enough to warrant further enquiry into how factors at the contextual level affect individual-level social trust. According to Ringdal (no date), the hierarchical data structure should not be ignored if the VPC for the higher levels is 5 % or more. If the VPC is smaller, one could consider one-level models with robust estimation of standard errors (ibid.).

TABLE 3: Multilevel regression results for categorisation 1 and 2 (17 countries)

Justification for the introduction of a distinct *Mediterranean* welfare regime category.

Random intercept model with three levels (individual, country-year, and country).

Dependent variable: Social Trust. Regression coefficients with standard error in parentheses.

	Categorisation 1 and 2		Categorisation 1		Categorisation 2	
	Model 6	**Model 7**	**Model 8a**	**Model 9a**	**Model 8b**	**Model 9b**
Intercept	10.881****	11.200****	14.327****	14.291****	15.688****	15.647****
	(1.047)	(1.023)	(1.017)	(1.018)	(.898)	(.898)
Time control[a]						
ESS Round 2 (2004)	.008	-.000	.028	.027	.053	.052
	(.105)	(.105)	(.104)	(.104)	(.104)	(.104)
ESS Round 3 (2006)	-.015	-.042	.048	.047	.117	.116
	(.123)	(.123)	(.117)	(.118)	(.115)	(.115)
ESS Round 4 (2008)	-.173	-.224	-.059	-.062	.073	.071
	(.154)	(.153)	(.138)	(.139)	(.132)	(.133)
ESS Round 5 (2010)	.017	-.009	.079	.074	.148	.142
	(.121)	(.121)	(.115)	(.115)	(.112)	(.113)
Level 1						
Woman	.306****	.306****	.306****	.309****	.306****	.309****
	(.027)	(.027)	(.027)	(.027)	(.027)	(.027)
Age	-.047****	-.047****	-.047****	-.046****	-.046****	-.046****
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)

[60] The variance partition coefficient is also known as *the intraclass correlation coefficient (ICC)*, and is calculated in the following way for the level-1 variance: VPC = $Var(e_{ijk})/ [Var(e_{ijk}) + Var(u_{0jk}) + Var(v_{0k})]$, and for the level-2 variance the formula is as following: VPC = $Var(u_{0jk})/ [Var(e_{ijk}) + Var(u_{0jk}) + Var(v_{0k})]$. For the level-3 variance: VPC = $Var(v_{0k})/ [Var(e_{ijk}) + Var(u_{0jk}) + Var(v_{0k})$, where $Var(v_{0k})$ = the variance of the country level residual, $Var(u_{0jk})$ = the variance of the country-year level residual and $Var(e_{ijk})$ = the variance of the individual level residual, taken from an empty three-level model (Strabac 2012: 226).

Age^2	.000****	.000****	.000****	.000****	.000****	.000****
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Domicile[b]						
Living in the suburbs	-.095*	-.095*	-.096*	-.094*	-.096*	-.095*
	(.049)	(.049)	(.049)	(.049)	(.049)	(.049)
Living in a town	-.144****	-.144****	-.144****	-.145****	-.144****	-.145****
	(.042)	(.042)	(.042)	(.042)	(.042)	(.042)
Living in a village	.100**	.101**	.101**	.101**	.101**	.099**
	(.042)	(.042)	(.042)	(.042)	(.042)	(.042)
Living on a farm/in the countryside	.400****	.400****	.400****	.395****	.399****	.394****
	(.061)	(.061)	(.061)	(.061)	(.061)	(.061)
Education	.165****	.165****	.165****	.164****	.165****	.165****
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Satisfied with household income	1.368****	1.368****	1.369****	1.364****	1.369****	1.366****
	(.037)	(.037)	(.037)	(.037)	(.037)	(.037)
Not economically active	-.473****	-.473****	-.473****	-.311****	-.473****	-.309****
	(.035)	(.035)	(.035)	(.064)	(.035)	(.064)
Crime victim	-.641****	-.641****	-.641****	-.638****	-.641****	-.638****
	(.034)	(.034)	(.034)	(.034)	(.034)	(.034)
Member of a discriminated group	-1.454****	-1.454****	-1.453****	-1.457****	-1.454****	-1.457****
	(.058)	(.058)	(.058)	(.058)	(.058)	(.058)
Religious denomination[c]						
Protestant	.570****	.570****	.569****	.564****	.569****	.565****
	(.041)	(.041)	(.041)	(.041)	(.041)	(.041)
Catholic	.225****	.225****	.226****	.235****	.227****	.238****
	(.039)	(.039)	(.039)	(.039)	(.039)	(.039)
Other religions	-.080	-.080	-.084	-.079	-.084	-.081
	(.067)	(.067)	(.067)	(.067)	(.067)	(.067)
Level 2						
GDP per capita (in $1000)	.070***	.081****	.045**	.045**	.015	.015
	(.024)	(.024)	(.020)	(.020)	(.018)	(.018)
Level 3						
Ethnic fractionalisation		-.036	.011	.011	.009	.009
		(.023)	(.019)	(.019)	(.014)	(.014)
Welfare regime[d]						
Conservative			-3.841****	-3.749****	-3.333****	-3.224****
			(.792)	(.792)	(.623)	(.623)
Liberal			-2.222**	-2.326**	-2.361****	-2.465****
			(.957)	(.957)	(.726)	(.727)
Mediterranean			–	–	-5.486****	-5.425****
					(.771)	(.771)
Cross-level interaction effects						
*Not ec act*Wel reg*[e]						
Not ec act*Conservative				-.283****		-.320****
				(.068)		(.073)
Not ec act*Liberal				.165*		.165*
				(.098)		(.098)
Not ec act*Mediterranean				–		-.216***
						(.083)
$Var(e_{ijk})$	24.629	24.629	24.629	24.622	24.629	24.622
	(.094)	(.094)	(.094)	(.094)	(.094)	(.094)
$Var(u_{0jk})$	.064	.064	.063	.064	.064	.065
	(.014)	(.015)	(.014)	(.014)	(.014)	(.015)
$Var(v_{0k})$	3.250	2.787	1.172	1.171	.664	.662
	(1.135)	(.983)	(.410)	(.410)	(.235)	(.235)
-2LL	816981.92	816979.76	816964.36	816927.08	816955.24	816915.86
-2LL change	6.65***	2.16	15.40****	37.27****	24.51****	39.40****

[a] ESS Round 1 (2002) is set as the reference category.
[b] Big city is set as the reference category.
[c] Not religious is set as the reference category.
[d] Social democratic is set as the reference category.
[e] Not economically active*Social democratic is set as the reference category.
N (level-1) = 135,186, N (level-2) = 71, N (level-3) = 17.
$Var(e_{ijk})$ = Variance of level-1 residual, $Var(u_{0jk})$ = Variance of level-2 residual, $Var(v_{0k})$ = Variance of level-3 residual.
**** = p<0.001, ***= p<0.01, ** = p<0.05, * = p<0.1.
Note: In all of the models in this table, it looks like the coefficient of Age^2 is .000. However, the reader should be made aware that in all of the models, the coefficients were actually slightly positive.

After running the empty three-level model, we proceed by adding the time control. The time control variables *ESS Round 2 (2004), ESS Round 3 (2006), ESS Round 4 (2008) and ESS Round 5 (2010)* measure levels of social trust in these years compared to *ESS Round 1 (2002)*. The main reason why we add this time control, is to see whether there has been a significant increase or decrease in social trust over the last years. Bjørnskov (2007) has pointed out that sceptics of the increased international integration of recent years claim "that globalization undermines features such as trust and social cohesion" (ibid.: 7). In Uslaner's (2000/2001: 574) opinion, on the other hand, social trust can be considered "a core value that people hold" that is quite stable over time: "Trust in people doesn't ebb and flow with the tides of people's sentiments about political figures or the state of the economy, as confidence in government does" (ibid.). The regression coefficients from our multilevel analyses support this view, as they do not reveal a particular trend or change over time in the level of social trust. From the LR-test we can see that the *Time control* variable is significant, but only at the .1 level. Models 1-5 (Table E1 in the appendix) show that social trust was slightly higher in ESS Round 2 (2004) compared to the reference category, ESS Round 1 (2002). From ESS Round 2 (2004) to ESS Round 3 (2006), there was a further increase in social trust. However, from ESS Round 3 (2006) to ESS Round 4 (2008), there was a miniscule decrease in social trust. In all of the Models 1-5, the highest level of social trust is to be found in ESS Round 5 (2010). By looking at the z-test, we can see that the dummy variable *ESS Round 2 (2004)* was non-significant in all of the models. In Models 4-5, where the theoretically important independent variables have been added, none of the dummy variables representing *ESS Rounds* turned out to be significant. By looking at Table 3, we can see that the same is true for the Models 6-9. Hence, our findings do not reveal a particular trend – neither an increase nor a decrease –in individual-level social trust in the time period 2002-2010.

After examining the time control, we continue by including the control variables at the individual level in our models. In all of the Models 2-9, the z-tests of the variables *Woman, Age, and* Age^2 turned out to be significant at the .001 level. On average, women have a higher level of social trust than men. This confirms the findings of Ivarsflaten and Strømsnes (2013), who came to a similar conclusion in their study. The effect of age on social trust turned out to be curvilinear, more specifically u-shaped (i.e. young and old people tend, on average, to have a higher level of social trust than middle-aged people). A possible explanation for the u-shape might be that, regardless of what welfare regime they are situated within, people are usually more dependent upon getting help and support from others in their early and late stages of

life. This involves interacting with other people that are both known to them (such as friends and family), but also people that initially are unknown to them (such as health personnel, nurses, kindergarten staff, just to mention a few). This interaction (which as we have already mentioned, usually is more common in the early and late stages of life), involving unknown people who give care, might have a positive impact on the level of social trust. By looking at Models 2-9, we can see that the z-tests for all of the dummy variables representing *Domicile* also turned out to be statistically significant, although at various levels of significance[61]. The LR-test shows that this set of dummy variables is significant at the .001 level, meaning that the introduction of this variable leads to a statistically significant improvement of our model[62]. In terms of the geographic location of the domicile in which one resides, people living in suburbs and towns have, on average, lower levels of social trust compared to people living in big cities (the reference category), while people living in villages and on a farm/in the countryside on average have higher levels of social trust.

Almost all of the theoretically important individual-level variables turned out to have the effect on social trust as predicted by our hypothesis. The only exception to this is the set of dummy variables representing *Religious denomination.* The z-tests of the variables *Education, Satisfied with household income, Not economically active, Crime victim* and *Member of a discriminated group* were all significant at the .001 level in Models 4-9, and with the coefficients being in the direction as expected by hypotheses 6-8. Our analyses clearly show that the variables *Education* and *Satisfied with household income* have a positive effect on social trust, thus confirming H6 and the predictions put forward by Delhey and Newton (2003), Oorschot et al. (2006) and Putnam (2000) that successful individuals on average tend to have a higher level of social trust than non-successful people. On the other hand, not participating actively in the economy, having a recent experience of crime or being a member of a discriminated group reduces, on average, an individual's level of social trust. As already mentioned, all these effects were highly statistically significant, thus confirming H7 and H8. In Model 5 (Table E1 in the appendix) a set of dummy variables representing *Religious denomination* has been added. The LR-test shows that this set of dummy variables

[61] It should however be noted that the dummy variable *Living in the suburbs* was only significant at the .1 level, meaning that in reality this variable should be classified as non-significant (since for individual-level variables, only variables that are significant at the .05 level or below should be considered statistically significant).
[62] The reason why the sets of dummy variables (e.g. *Domicile* and *Religious denomination*) have been included in separate models is to see whether they improve the models in statistically significant ways. This cannot be determined by only taking the Z-values into account. One needs to look at the change in -2LL and whether this change is statistically significant or not (by means of a LR-test).

has a highly statistically significant effect on social trust, being significant at the .001 level. For both of the dummy variables *Protestant* and *Catholic*, the coefficients were positive and the z-tests were significant at the .001 level in all of the Models 5-9. The dummy variable representing *Other religions,* on the other hand, turned out to be negative and non-significant. By looking at Table 3, we can see that both Protestants and Catholics on average have a higher level of social trust than non-believers, and that the positive effect of religion is stronger for Protestants as compared with Catholics. Thus H9 is partly confirmed, as this hypothesis suggested that Protestants on average should have a higher level of social trust than non-religious people, while Catholics should have less.

Even though the European countries included in our study are normally considered to be quite similar with regards to economic, social, and political conditions, there are still noteworthy differences between them. It is therefore important to take into account various contextual-level factors when explaining the differences in the level of social trust among them. In Table 3, variables at both the individual level as well as the contextual level have been included in our models. In model 6 we have included the control variable *GDP per capita* at level-2, and in Model 7 we have added the *Ethnic fractionalisation* variable at level-3. In Model 8a, we have included the set of dummy variables representing *Welfare regime,* using categorisation 1 (see Table D1 in the appendix). In Model 8b, we have done exactly the same thing, but using categorisation 2 instead of categorisation 1. In Model 9a and 9b, we have added the cross-level interaction effect *Not economically active*Welfare regime* for the two different categorisations respectively.

In Model 6, the control variable *GDP per capita* turned out to be statistically significant at the .01 level, and in Model 7 at the .001 level. The effect of this variable on social trust is in accordance with H5, which predicted that national wealth should have a positive effect on the average level of social trust within a country. By looking at the regression coefficient in Model 6, we can see that a one unit increase (i.e. a $1000 increase) in the GDP per capita increases individual-level social trust with .070 units, the other independent variables being held constant. In Model 7, the regression coefficient of the variable *Ethnic fractionalisation* is negative, something that indicates that ethnic fractionalisation has a negative effect on social trust. However, both the LR-test as well as the z-test show us that this variable is not

statistically significant[63], hence we are not able to neither confirm nor reject H4, which suggested that ethnic fractionalisation has a negative effect on the average level of social trust within a country. In Model 8a, we have included the set of dummy variables representing *Welfare regime*, using categorisation 1 (see Table D1 in the appendix). The LR-test shows us that this set of dummy variables is significant at the .001 level, leading to a statistically significant improvement of our model. Thus the introduction of the *Welfare regime* variable is by all means justified. When adding this variable, we can see that the effect of *GDP per capita* is still positive, but slightly weaker than what the case in Model 6 and Model 7. The variable continues to be statistically significant, but only at the .05 level. The regression coefficient of the variable *Ethnic fractionalisation* in Model 8a is positive (in contrast to Model 7, where the regression coefficient was negative), however, it is still not statistically significant. Hence, we are still not able neither to confirm nor reject H4. These conclusions still hold in Model 9a, where the cross-level interaction effect *Not economically active*Welfare regime* has been added (using categorisation 1). This implies that our hypothesis concerning the relationship between welfare regime and social trust seems to have been confirmed. The regression coefficients *Conservative* and *Liberal* are both negative and statistically significant (the negative effect of *Conservative* being stronger than the negative effect of *Liberal*), thus indicating that the level of social trust in these two welfare regimes are lower as compared to the reference category (*Social democratic).* This gives support to H1, which predicted that people's level of social trust in the social democratic regime (where a large degree of government programs are universal) will, on average, be higher than individuals' level of social trust in conservative and liberal welfare regimes (where the majority of government programs are familiaristic or means-based).

As previously mentioned, the cross-level interaction effect *Not economically active*Welfare regime* has been added in Model 9a. According to Hamilton (1992: 84), an interaction effect is present "if an X variable's effect does depend on the values of other X variables". H7 stated that people who are not participating actively in an economy (for instance, by being unemployed, retired, sick or disabled), on average should have a lower level of social trust

[63] The change in -2LL (i.e. the measure that we use to compare models directly), reveals that the difference between Model 6 (where *Ethnic fractionalisation* is not included) and Model 7 (where *Ethnic fractionalisation* has been added) amounts to 2.16. When testing this change against the chi-square distribution, with one added degree of freedom, we can see that this change is only significant at the 0.1415 level. As this variable is non-significant, we can conclude that it does not lead to a noteworthy improvement of the model and that this macro-factor has little or no effect on the level of social trust.

than people who are working or in some other way is participating actively in a county's economic life (e.g. students or people doing their military service). However, by taking into account the work of Huber and Stephens (2001) and Lee (2012), we would expect this effect to vary depending on which level-3 unit the individual in question belongs to (to be more precise: it should depend on their country's type of *Welfare regime*). Just as what was the case for the set of dummy variables representing welfare regime, the inclusion of the set of dummy variables *Not economically active*Welfare regime* into our model is statistically significant at the .001 level. H10 suggested that since a large part of government programs in the liberal welfare regime involves means-testing (which, according to H1, is hypothesised to have a negative effect on social trust), we would predict that not participating in the economy (e.g. by being unemployed, sick or disabled) should have an even stronger negative effect on social trust for a person living in a liberal welfare regime (and to a certain extent also conservative and Mediterranean welfare regimes), as compared with the effect of not participating actively in the economy in a social democratic welfare regime. By looking at the regression coefficients in Model 9a, we can see that this hypothesis is only partly confirmed. Compared to the reference category (*Not economically active*Social democratic)*, we can see that the negative effect of not participating actively in the economy is stronger in the conservative welfare regime (which is in accordance with H10). However, and somewhat surprisingly, this is not true for the liberal welfare regime, where the regression coefficient turned out to be positive and significant at the .01 level. This means that the effect of *Not economically active* on social trust is still negative overall in the liberal welfare regime, but not as negative as in the conservative or the social democratic welfare regimes[64] (thus contradicting H10). Based on the theory outlined in Chapter 2, it is difficult to find a reasonable explanation for why this is the case. However, as we will see in the final model of this master's thesis (Model 9 in Table 4, including 30 countries instead of only 17), the z-test for the dummy variable *Not economically active*Liberal* actually turns out to be non-significant. Hence, the somewhat surprising result in Table 3 cannot really be generalised so that it holds for the population at large when more countries are included in our analysis (Table 4).

In Model 8b and Model 9b, we have done exactly the same thing as we did in Model 8a and Model 9a respectively, but using categorisation 2 instead of categorisation 1. The sample

[64] In the liberal welfare regime, the effect of *Not economically active* on social trust amounts to (-.473) + (.165) = -.308. In the conservative welfare regime, the equivalent value is (-.473) + (-.283) = -.756, and in the social democratic welfare regime (the reference category) it is -.473 (using categorisation 1).

sizes in all of the three levels are exactly the same in these two categorisations, the only difference being that we in categorisation 1 have placed the countries in three categories (social democratic, conservative, and liberal), while in categorisation 2 we have placed them in four (in addition to the three aforementioned categories, we have also added a category encompassing the Mediterranean welfare states). The reason why we have done this, is to see whether there is any hold in the argument of Ferrera (1996) that some of the conservative countries should be singled out to form a distinct Mediterranean welfare regime category. Since the sample sizes are exactly the same in the two different categorisations, we can easily compare the models. When adding the set of dummy variables representing *Welfare regime* in Model 8b, and the cross-level interaction effect *Not economically active*Welfare regime* in Model 9b, we see that our conclusions drawn previously from Model 8a and Model 9a about the relationship between welfare regime and social trust still holds. In Model 8b and Model 9b, the regression coefficients *Conservative* and *Liberal* are still both negative compared to the reference category *Social democratic*, with the negative effect of *Conservative* continuing to be stronger (although not as strong as in Model 8a and Model 9a) than the negative effect of *Liberal*. The regression coefficient for *Mediterranean* is even more negative than what is the case for both *Conservative* and *Liberal,* thus confirming H2, where we expected people's level of social trust in the Mediterranean welfare regime to be, on average, lower than people's level of social trust in the conservative welfare states. All of the dummy variables representing *Welfare regime* turned out to be statistically significant at the .001 level. This supports the suggestion of Ferrera (1996) that Esping-Andersen's (1990) welfare regime typology should be extended to also include a distinct category containing the Mediterranean welfare states. Concerning the cross-level interaction effect, our conclusions drawn from Model 9a are still valid. The *Not economically active*Welfare regime* variable shows that the effect of not participating actively in the economy on social trust varies among the different welfare regimes. The dummy variable *Not economically active*Mediterranean* is significant at the .01 level and negative, although not to the same extent as what is the case for the dummy variable *Not economically active*Conservative.* This means that the negative effect of not participating actively in the economy is stronger in the conservative welfare regime, as compared with the Mediterranean welfare regime.

When controlling for *Welfare regime,* a noticeable difference appears between Models 8a/9a and Models 8b/9b when it comes to the variable representing national wealth (*GDP per capita).* In Table 3, using categorisation 1, we can see that *GDP per capita* is significant in all

of the models where this variable has been added. However, in the models where the set of dummy variables representing *Welfare regime* has been added (Models 8a and 9a), the positive effect of *GDP per* capita becomes less strong than what was the case in Models 6 and 7. It also loses some significance, as it was significant at the .01 and .001 Models 6 and 7 respectively, while it is only significant at the .05 level in Models 8a and 9a. When using categorisation 2 (also Table 3)[65], this variable actually loses its significance entirely when the set of dummy variables representing *Welfare regime* is added (Models 8b and 9b). One plausible reason for this is that the effect of *GDP per capita* is partially shown through the *Welfare regime* variable. When adding a distinct Mediterranean category, most conservative countries with a low GDP per capita fall into this group (see Figure D7 in the appendix). From the descriptive statistics offered in Table A1 in the appendix, we can also see that the Mediterranean countries on average have a lower level of social trust than conservative welfare states. This means that when using categorisation 2 (as well as categorisation 3) where the distinct Mediterranean welfare category has been added, the difference in national wealth is to a greater extent captured by the *Welfare regime* variable than what was the case when using categorisation 1. Thus, by looking at the -2LL change, we can see that the *Welfare regime* variable becomes more important; for categorisation 1 -2LL (Model 8a) = 15.40, while for categorisation 2 (Model 8b) -2LL=24.51. At the same time, the variable *GDP per capita* gets less important as it loses its significance. This means that for Models 8b and 9b, we cannot generalise the results from our multilevel regression analyses so that they cover the entire population. Thus, we cannot state for sure whether H5 has been confirmed or rejected. When it comes to the *Ethnic fractionalisation* variable, the regression coefficients are positive but not statistically significant in both Model 8b and Model 9b. This is similar to the findings from Model 8a and Model 9a. Just as what was the case for the *GDP per capita* variable, this means that we cannot generalise the results from our analyses so that they hold for the population at large. Thus, similar to H5, H4 can be neither confirmed nor rejected.

The building of the models using categorisation 3 is identical to the model building using categorisation 1 and 2. In Table E2 in the appendix, one could find the multilevel regression results for the models including the time control and the independent variables at the individual level (Models 1-5) for categorisation 3, as well as the empty model. In Table 4, variables at the contextual level have been added to our models (Models 6-9). By running the

[65] As we will see later, this is also the case in Models 8 and 9 when using categorisation 3 (see Table 4).

empty three-level model for categorisation 3, we find that the variance of the level-1 residual $Var(e_{ijk})$ is 29.363, the variance of the level-2 residual $Var(u_{0jk})$ is .213, and the variance of level-3 residual $Var(v_{0k})$ is 7.355. For the empty model, the VPC for level-1 = .7950, the VPC for level-2 = .0057, and the VPC for level-3 = .1991. Just as what the empty model for categorisation 1 and 2 showed us, this means that almost 80% of the total variance in the dependent variable is on the individual level. Around .57% of the total variance can be explained by differences between level-2 units (country-years), and slightly less than 20% of the total variance in the dependent variable can be explained by differences between level-3 units (countries).

TABLE 4: Multilevel regression results for categorisation 3 (30 countries)

Random intercept model with three levels (individual, country-year, and country).

Dependent variable: Social Trust. Regression coefficients with standard error in parentheses.

	Model 6	**Model 7**	**Model 8**	**Model 9**
Intercept	10.514****	10.929****	15.503****	15.442****
	(.505)	(.699)	(1.046)	(1.046)
Time control[a]				
ESS Round 2 (2004)	.051	.053	.095	.093
	(.130)	(.130)	(.129)	(.130)
ESS Round 3 (2006)	.033	.037	.159	.157
	(.135)	(.135)	(.137)	(.137)
ESS Round 4 (2008)	-.103	-.096	.116	.113
	(.135)	(.135)	(.143)	(.143)
ESS Round 5 (2010)	.103	.107	.250*	.245*
	(.129)	(.129)	(.132)	(.132)
Level 1				
Woman	.331****	.331****	.331****	.333****
	(.023)	(.023)	(.023)	(.023)
Age	-.061****	-.061****	-.061****	-.061****
	(.003)	(.003)	(.003)	(.003)
Age^2	.000****	.000****	.000****	.000****
	(.000)	(.000)	(.000)	(.000)
Domicile[b]				
Living in the suburbs	-.076*	-.076*	-.076*	-.074*
	(.044)	(.044)	(.044)	(.044)
Living in a town	-.145****	-.145****	-.145****	-.145****
	(.034)	(.034)	(.034)	(.034)
Living in a village	.102***	.102***	.102***	.103***
	(.034)	(.034)	(.034)	(.034)
Living on a farm/in the countryside	.369****	.369****	.368****	.365****
	(.058)	(.058)	(.058)	(.058)
Education	.158****	.158****	.158****	.159****
	(.003)	(.003)	(.003)	(.003)
Satisfied with household income	1.256****	1.256****	1.256****	1.253****
	(.029)	(.029)	(.029)	(.029)
Not economically active	-.426****	-.426****	-.426****	-.255****
	(.030)	(.030)	(.030)	(.066)
Crime victim	-.669****	-.669****	-.669****	-.667****
	(.030)	(.030)	(.030)	(.030)
Member of a discriminated group	-1.477****	-1.477****	-1.477****	-1.477****
	(.049)	(.049)	(.049)	(.049)
Religious denomination[c]				
Protestant	.583****	.583****	.581****	.578****
	(.041)	(.041)	(.041)	(.041)

Catholic	.206****	.206****	.208****	.214****
	(.035)	(.035)	(.035)	(.035)
Other religions	.207****	.207****	.206****	.209****
	(.049)	(.049)	(.049)	(.049)
Level 2				
GDP per capita (in $1000)	.088****	.087****	.030	.030
	(.015)	(.015)	(.020)	(.020)
Level 3				
Ethnic fractionalisation		-.015	.014	.014
		(.018)	(.014)	(.014)
Welfare regime[d]				
Conservative			-3.404****	-3.294****
			(.745)	(.745)
Liberal			-2.315**	-2.414***
			(.932)	(.933)
Mediterranean			-5.385****	-5.353****
			(.894)	(.895)
Post-communist			-4.945****	-4.870****
			(1.085)	(1.086)
Cross-level interaction effects				
*Not ec act*Wel reg*[e]				
Not ec act*Conservative				-.320****
				(.078)
Not ec act*Liberal				.158
				(.105)
Not ec act*Mediterranean				-.135
				(.082)
Not ec act*Post-communist				-.230***
				(.077)
Var(e_{ijk})	28.288	28.288	28.288	28.283
	(.087)	(.087)	(.087)	(.087)
Var(u_{0jk})	.147	.146	.144	.145
	(.025)	(.025)	(.025)	(.025)
Var(v_{0k})	2.594	2.538	1.098	1.098
	(.687)	(.672)	(.297)	(.297)
-2LL	1285536.32	1285535.6	1285510.02	1285474.66
-2LL change	21.96****	.73	25.58****	35.35****

[a] ESS Round 1 (2002) is set as the reference category.
[b] Big city is set as the reference category.
[c] Not religious is set as the reference category.
[d] Social democratic is set as the reference category.
[e] Not economically active*Social democratic is set as the reference category.
N (level-1) = 207,942, N (level-2) = 115, N (level-3) = 30.
Var(e_{ijk}) = Variance of level-1 residual, Var(u_{0jk}) = Variance of level-2 residual, Var(v_{0k}) = Variance of level-3 residual.
**** = p<0.001, ***= p<0.01, ** = p<0.05, * = p<0.1.
Note: In all of the models in this table, it looks like the coefficient of *Age*^{2} is .000. However, the reader should be made aware that in all of the models, the coefficients were actually slightly positive.

Similar to the findings for the analyses using categorisation 1 and 2, the regression coefficients for categorisation 3 do not reveal a particular trend or change over time in the level of social trust. The LR-test reveals that the *Time control* variable is significant at the .01 level. Models 1-5 (Table E2 in the appendix) show that social trust increases slightly from one ESS Round to the next. However, it should be noted that the level of significance (z-test) changes from model to model, with the dummy variable *ESS Round 2 (2004)* being non-significant in all of the models. When adding the contextual level variables in Table 4, we can see that the regression coefficients do not reveal a consistent trend in social trust at all, with the value as well as the direction of the regression coefficients changing a lot between the various models. In addition, by looking at the z-test, we can see that most of the time control

dummy variables lose their significance after the inclusion of the contextual level variables. Also the findings concerning the variables *Woman, Age, and Age²* turned out to be quite similar to the regression results for categorisation 1 and 2. The z-tests of all of these variables were significant at the .001 level in all of the eight models containing these variables. From these result one could conclude, just as previously stated, that women have a higher level of social trust than men (according to the final Model 9, this amounts to .333 units) and that the effect of age on social trust is curvilinear (u-shaped)[66]. In Figure E1 (see the appendix) we have offered an illustration of the curvilinear relationship between age and social trust, based on the multilevel regression results of the final Model 9 in Table 4[67]. This figure shows that on average, age has a negative effect on social trust up until the age of 39.73, after which it has a positive effect[68]. By looking at the regression coefficients in Models 3-9, we can see people living in suburbs and towns have, on average, lower levels of social trust compared to people living in big cities (the reference category), while people living in villages and on a farm/in the countryside on average have higher levels of social trust[69]. This is equivalent to the findings obtained when using categorisation 1 and 2. By taking the LR-test into consideration, we can see that the inclusion of the set of dummy variables representing *Domicile* is justified, since it was significant at the .001 level. The z-tests of the dummy variables *Living in a town* and *Living on a farm/in the countryside* were both significant at the .001 level in all of the models. The z-tests for the dummy variable *Living in a village* were significant at the .01 level in all of the models, except for Model 4 where it was significant at the .001 level. The z-tests for the dummy variable *Living in the suburbs* were only statistically significant at the .1 level in most of the models, hence, this variable should be classified as non-significant (since for individual-level variables, only variables that are significant at the .05 level or below should be considered statistically significant).

All of the theoretically important variables at the individual level were significant at the .001 level in all of the Models 4-9. In addition, their coefficients turned out to be in the direction as suggested by our hypotheses, the only exception to this being the set of dummy variables representing *Religious denomination.* This is exactly the same as what the regression results

[66] Although it appears that the values of the coefficients representing *Age²* are .000 in all of the models, the truth is that they are in fact slightly positive. In the final Model 9 (Table 4), the corresponding value is .0007747.
[67] As previously mentioned, due to space constraints, we have not been able to include similar figures based on the multilevel regression results of the other models discussed in this master's thesis.
[68] The turning point of *Age* (categorisation 1 and 2) is calculated in Stata by using the command: display -1*_b[agea]/(2*_b[agea2]) = 39.73.
[69] The only exception to this in to be found in Model 3, where the regression coefficient for the dummy variable *Living in a village* was negative.

for categorisation 1 and 2 showed us as well, thus confirming H6, H7, and H8. While the LR-test demonstrates that the inclusion of the *Religious denomination* variable is indeed statistically significant at the .001 level, the directions of the regression coefficients are slightly different from what we would expect from our hypothesis. We predicted that Protestants on average should have a higher level of social trust than non-religious people (the reference category), while Catholics should have less. The regression result tells us that *both* Protestant and Catholics on average have a higher level of social trust than non-believers. Thus, we can conclude that H9 is only partly confirmed. However, it should be noted that just as what was the case in the analyses using categorisation 1 and 2, the positive effect of religion is stronger for Protestants as compared with Catholics. Contrary to the findings in Table 3, the regression coefficients for the dummy variable *Other religions* were positive and statistically significant at the .001 level (z-test) in all of the models where this variable was included (Models 5-9).

In Models 6-7, the control variable *GDP per capita* is positive and statistically significant at the .001 level. In these two models, the effect of this variable on social trust is in accordance with H5, namely that national wealth should have a positive effect on the average level of social trust within a country. However, just as what we saw for categorisation 2, this variable becomes non-significant in Models 8-9, where the set of dummy variables representing *Welfare regime* (using categorisation 3) and the variable testing for a cross-level interaction effect have been added respectively. In Model 7, the variable *Ethnic fractionalisation* is negative but not statistically significant. In Models 8-9, the regression coefficients for this variable become positive, but they are still non-significant. This is exactly the same as what the regression results presented in Table 3 demonstrated for us. Since none of the variables *GDP per capita* and *Ethnic fractionalisation* turned out to be statistically significant in the final model (Model 9), H4 and H5 can be neither confirmed nor rejected.

By studying the regressions results in Model 8, we can see that our hypotheses concerning the variation in social trust among welfare regimes to a large extent have been confirmed. According to the LR-test, adding the set of dummy variables representing *Welfare regime* to our model is justified, since it is statistically significant at the .001 level. The regression coefficients for the dummy variables *Conservative, Mediterranean,* and *Post-communist* are all negative and statistically significant at the .001 level (z-test). The regression coefficient for the dummy variable *Liberal* is also negative, but the z-test shows that this variable is only

significant at the .05 level. This means that compared to the reference category (*Social democratic*), all of these four welfare regimes exert a negative influence on social trust. Thus, we could conclude that H1 is confirmed, since, all else equal, the average levels of social trust in the conservative and liberal welfare regimes are lower than what is the case in the social democratic welfare regime. In addition, the regression results tell us that the negative effect of *Mediterranean* is stronger than the negative effect of *Conservative*. This gives support to H2, where we predicted that people's level of social trust in the Mediterranean welfare regime should be, on average, lower than people's level of social trust in the conservative welfare states. H3, on the other hand, is only partly confirmed. This hypothesis suggested that people's level of social trust in post-communist welfare states on average should be lower than people's level of social trust in the four other regime types, due to the communist legacy. From the regression results in Table 4, we can see that while the negative effect on social trust of the dummy variable *Post-communist* is stronger than the negative effect of the dummy variables *Conservative* and *Liberal*, this is not true when compared with the dummy variable *Mediterranean*. In other words, the Mediterranean welfare regime has a stronger negative influence on social trust than the post-communist welfare regime. In the final Model 9, where the variable testing for the presence of a cross-level interaction effect has been added, these conclusions still hold. The most notable difference between Model 8 and Model 9 concerning the *Welfare regime* variable, is that in the latter model, the dummy variable *Liberal* is significant at the .01 level, while in the former it was only significant at the .05 level.

In Figure E2 in the appendix, an illustration of the cross-level interaction effect between *Not economically active*Welfare regime* has been provided, which is based on the multilevel regression results of the final Model 9 in Table 4[70]. Analysing an interaction effect just by looking at the regression coefficients could be very difficult. Because of this, Figure E2 in the appendix consists of a conditional effect plot, where predicted values of Y (i.e. *Social trust*) have been graphed against an X variable (i.e. *Not economically active*), with the other X variables being held constant. As we can see, this figure contains five separate lines, and these lines represent predicted social trust in each of the five welfare regimes. The 'starting point' of each line (to the left in the figure, where the value of *Not economically active* = 0), gives us the predicted level of social trust for a person who *is* economically active in each of the five

[70] As previously mentioned, due to space constraints, we have not been able to include similar figures based on the multilevel regression results of Model 9a and Model 9b in Table 3 (where categorisation 1 and categorisation 2 have been used respectively).

welfare regimes. The 'ending point' of each line (to the right in the figure, where the value of *Not economically active* = 1), gives us the predicted level of social trust for a person who *is not* economically active in each of the five welfare regimes. We can see that in four of the five welfare regimes, people who are not economically active have a lower predicted level of social trust compared to people who *are* economically active. This is however not the case for the liberal welfare regime, where the predicted level of social trust for people who are not economically active actually is slightly higher than the predicted level of social trust for economically active people. However, as we will point out later, the z-test for the dummy variable *Not economically active*Liberal* turned out to be non-significant. Hence we must treat our finding with caution, as we cannot generalise it to cover the entire population. The LR-test shows that taken together, the set of dummy variables *Not economically active*Welfare regime* is significant at the .001 level, thus leading to an improvement of our model. By looking at Figure E2 in the appendix, as well as the regression coefficients listed in Table 4, we can see that H10 has only been partly confirmed. The z-test of the dummy variable *Not economically active*Conservative* is statistically significant at the .001 level. This variable demonstrates that the negative effect of not participating actively in the economy is stronger in the conservative welfare regime as compared with the social democratic welfare regime, something that is in accordance with H10. Also the dummy variable *Not economically active*Mediterranean* is negative, although not to the same extent as the dummy variable *Not economically active*Conservative.* In addition, this dummy variable turned out to be non-significant. Just as what the findings in Table 3 showed us, the coefficient of the dummy variable *Not economically active*Liberal* is, somewhat surprisingly, positive. This contradicts our predictions laid out in H10. However, this variable is not statistically significant, meaning that our findings cannot be generalised to hold for the population at large. Although H10 does not suggest in what way we expect the effect of not being economically active in the post-communist welfare regime should differ from the other welfare regimes, we can still note that the variable *Not economically active*Post-communist* is negative and significant at the .01 level (the negative effect not being quite as strong as what was the case for the variable *Not economically active*Conservative*). In the next section, we will provide an overview of the different hypotheses that we have tested for in this master's thesis, accompanied by a coherent discussion of whether they have been confirmed or rejected by our study.

4.3) Review of all the hypotheses

In our study, Model 9 in Table 4 (where categorisation 3 has been used) is considered to be the final model. This model, which is the most complex model, contains all the individual-level variables as well as all the macroeconomic measures, as described in Chapter 3. When using categorisation 3, N at all the three different levels becomes higher as compared with categorisation 1 and 2, something which makes the results from our analyses more valid (the number of countries included in our final model is 30, while it was only 17 in the analyses using categorisation 1 and 2). In this model, the majority of the regression coefficients turned out to be statistically significant and in the directions as predicted by our hypotheses. Model 9 in Table 4 is argued to be the final model because the inclusion of the *Welfare regime* variable and the cross-level interaction variable *Not economically active*Welfare regime* constitute an important and significant improvement (at the .001 level) from the previous models. By looking at the change in -2LL and the statistical significance of the LR-test, one could see that this is the model that best explains the variation in social trust. The final model could be formally defined as in the following equation, where *i* represents individuals, *j* represents country-years, and *k* represents countries:

$$\begin{aligned}Social\ Trust_{ijk} = {} & \beta_0 + \beta_1 ESS\ Round\ 2_{ijk} + \beta_2 ESS\ Round\ 3_{ijk} + \beta_3 ESS\ Round\ 4_{ijk} + \beta_4 ESS\ Round\ 5_{ijk} + \beta_5 Woman_{ijk} + \beta_6 Age_{ijk} + \beta_7 Age2_{ijk} + \beta_8 Living\ in\ the\ suburbs_{ijk} + \beta_9 Living\ in\ a\ town_{ijk} + \beta_{10} Living\ in\ a\ village_{ijk} + \beta_{11} Living\ on\ a\ farm/in\ the\ countryside_{ijk} + \beta_{12} Education_{ijk} + \beta_{13} Satisfied\ with\ household\ income_{ijk} + \beta_{14} Not\ economically\ active_{ijk} + \beta_{15} Crime\ victim_{ijk} + \beta_{16} Member\ of\ a\ discriminated\ group_{ijk} + \beta_{17} Protestant_{ijk} + \beta_{18} Catholic_{ijk} + \beta_{19} Other\ religions_{ijk} + \beta_{20} GDP\ per\ capita_{jk} + \beta_{21} Ethnic\ fractionalisation_k + \beta_{22} Conservative_k + \beta_{23} Liberal_k + \beta_{24} Mediterranean_k + \beta_{25} Post\text{-}communist_k + \beta_{26} Not\ economically\ active_{ijk} * Conservative_k + \beta_{27} Not\ economically\ active_{ijk} * Liberal_k + \beta_{28} Not\ economically\ active_{ijk} * Mediterranean_k + \beta_{29} Not\ economically\ active_{ijk} * Post\text{-}communist_k + e_{ijk} + u_{0jk} + v_{0k}\end{aligned}$$

So far, we have mostly commented on the direction and significance of each of the variables, and linked them to their respective theoretical expectations. However, when interpreting the results from the multilevel analyses, it is also important to take into account the change in the variance terms. A decrease in the level 1-, 2-, or 3-variance means that the introduced variable(s) explain some of the variance on that level. By looking at Table E2 in the appendix and Table 4, we can see that the level of explained variance at the individual level, $Var(e_{ijk})$, decreases from Model 1 to Model 5. However there is no change in the level of explained variance at the individual level between Model 5 (where all of the individual-level variables

have been added) and the subsequent Models 6-8[71]. In Model 9, where the cross-level interaction terms *Not economically active*Welfare regime* have been added, the level of explained variance at the individual level decreases slightly. By comparing the final Model 9 with the empty Model 0, we can see how much of the level-1 variance is explained by the variables included. In the empty model, the level-1 variance was 29.363, while in the final model it is 28.283. By dividing the difference (29.363 – 28.283 = 1.080) on the individual-level variance found in the empty model, and multiplying this by a hundred, we get the amount of total explained variance on the individual-level (i.e. 3.678 percent). This means that almost 3.7 percent of the individual-level variance could be explained by the micro-level variables that we have included. When comparing the explained variance at level-2 and level-3, we can see that the introduction of variables at the contextual level affects the latter to a greater extent than the former. In Model 5 (where all the individual –level variables have been included), the explained variance at the country level $Var(v_{0k})$ = 5.628, while in the final Model 9 it has decreased to $Var(v_{0k})$ = 1.098.

In Table 5, we have offered a review of all the hypotheses that have been tested for in this master's thesis. The confirmation of H1 is in accordance with the results of the previous multilevel studies conducted by Lee (2012) and Tamilina (2010). Tamilina (ibid.: 22-23) concluded that while universalism conducts a positive effect on interpersonal trust, conservatism, "with its class-related and status-oriented preferences" rather tend to reduce trust among people. The same is true for liberalism, which, due to its "deeply rooted dualism" (ibid.: 23) conducts a negative effect on interpersonal trust. Due to non-significant result, the hypotheses related to ethnic fractionalization (H4) and national wealth (H5) could be neither confirmed nor rejected. All of the hypotheses at the individual level (H6-H9) were either confirmed or partly confirmed. The hypothesis concerning a possible interaction effect between *Not economically active*Welfare regime* (H10) was also partly confirmed. Although our findings demonstrate that the explanation for most of the variation in social trust is to be found at the individual level[72], factors at the contextual level should not be neglected. While the variables *Ethnic fractionalisation* and *GDP per capita* turned out to be non-significant, the set of dummy variables representing *Welfare regime* and *Not economically active*Welfare regime* were both highly significant (taking the LR-test into account).

[71] This is not very surprising, since we did not add any new individual-level variables in Models 6-8.
[72] This is for instance apparent when considering the change in –2LL, which is much more extensive for the models where the individual-level variables have been added, than for the models where the contextual-level variables have been added.

TABLE 5: Review of the hypotheses – Have they been confirmed (✓) or rejected (✗)?

Factors at the contextual level

H1: People's level of social trust in the social democratic regime will be, on average, higher than people's level of social trust in the conservative and the liberal welfare regimes.	✓
H2: People's level of social trust in the Mediterranean welfare regime will be, on average, lower than people's level of social trust in the conservative welfare regime.	✓
H3: People's level of social trust in the post-communist welfare regime will be, on average, lower than people's level of social trust in the four other regime types.	✓ (only partly confirmed)
H4: Ethnic fractionalisation should have a negative effect on the average level of social trust within a country.	NS*
H5: National wealth should have a positive effect on the average level of social trust within a country.	NS*

Factors at the individual level

H6: The current success of one's life – as measured in education and income – should have a positive impact on a person's level of social trust.	✓
H7: Not participating actively in the economy (for instance, by being unemployed, retired, sick or disabled), should have a negative impact on an individual's level of social trust.	✓
H8: A recent experience of crime or discrimination should have a negative impact on a person's level of social trust.	✓
H9: Being a Protestant should have a positive effect on a person's level of social trust (as compared with non-believers), while being a Catholic should have a negative effect.	✓ (only partly confirmed)

Cross-level interaction effect:
Not economically active*Welfare regime

H10: Not participating actively in the economy should have an even stronger negative effect on social trust for a person living in the liberal welfare regime (and to a certain extent also the conservative and the Mediterranean welfare regimes), as compared with the effect of not participating actively in the economy in the social democratic welfare regime.	✓ (only partly confirmed)

* NS means that the results were non-significant. If this is the case, the hypothesis can be neither confirmed nor rejected.

Referring back to the research question of this master's thesis: *"What impact does welfare regime have on social trust?"* we could certainly conclude that a person's level of social trust is indeed affected by what welfare regime he or she is situated within. The results of our multilevel modelling demonstrate that when investigating the determinants of social trust, it surely makes sense to continue placing countries into groups based on what welfare regime they belong to. In Table 6, we have offered an overview of the five different welfare regimes as outlined in our study (categorisation 3). In this table, we have briefly stated what countries (thirty in total) are included in each of the five regime types, as well as a short description of what are the main characteristics of the various welfare regimes.

TABLE 6: Overview of categorisation 3

Welfare regime type	Countries included	Welfare regime characteristics (Design of policies)
Social Democratic (One of Esping-Andersen's three original categories)	Denmark, Finland, Norway, Sweden	Universal
Conservative (One of Esping-Andersen's three original categories)	Austria, Belgium, Switzerland, Germany, France, Luxembourg, The Netherlands	Familiaristic
Liberal (One of Esping-Andersen's three original categories)	United Kingdom, Ireland	Selective (means-testing)
Mediterranean (Additional category)	Cyprus, Greece, Israel, Italy, Portugal, Spain Turkey	Familiaristic (to an even higher extent than in the conservative welfare states).
Post-communist (Additional category)	Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Poland, Russia, Slovakia, Slovenia, Ukraine	A category encompassing all Eastern, Central, or Southeast European countries that were previously part of the USSR or under Soviet influence/military domination[73].

4.4 Testing the assumptions of the final model

In this section, we will discuss what assumptions are necessary to test for and fulfil in order for the final model (i.e. Model 9 in Table 4) to be deemed reliable. The most important thing to remember when creating a statistical model is to include all the relevant variables and exclude all the irrelevant ones. In this model, most of the variables have been added based on theoretical considerations. Some control variables were also included in order to improve the model. In addition, it is important that one is aware that the relationship between the dependent and the independent variables might not be linear. This problem could be avoided if one tests for curvilinearity. Based on the previous study by Alesina and Ferrara (2002), who found that relationship between age and social trust is curvilinear, we included the variable Age^2, which turned out to be statistically significant. In addition, we have also tested for a

[73] Much research is still required on the post-communist welfare regime. They do not form an equally comprehensive category as the other categories in the analysis (Oorschot and Arts 2005). According to Oorschot and Arts (ibid.: 12), "[a]lthough [these countries] face similar challenges, [their] differences in institutional design and in social structure are quite large". In this analysis, these countries have not been put in one category based on the policy design in these countries, but rather on the fact that they all share a common history of communism and former repressive rule that we hypothesise have had a negative effect on the level of social trust between citizens in these countries.

possible interaction effect between *Not economically active*Welfare regime,* which were added based on the theoretically important arguments presented by Huber and Stephens (2001) and Lee (2012). Also this set of dummy variables turned out to be statistically significant.

Another assumption that it is necessary to test for when undertaking multilevel regression analyses (as well as other kinds of regression analyses) is the absence of multicollinearity. Multicollinearity is a problem that occurs when the X-variables are too highly intercorrelated, and in order to find out whether this constitutes a problem in our analysis, one should test for *tolerance.* The tolerance value of each independent variable is the proportion of its variance that is not shared with the other independent variables. In Table F1 in the appendix, tolerance values for all of the independent variables included in our final model are given. In cases of perfect multicollinearity, tolerance will equal zero, something that makes regression impossible. According to Hamilton (1992: 134), tolerance values below .2 or .1 do not prevent regression, but they will make the results of the analysis less stable. It should be noted that the inclusion of squared terms or interaction variables in a model often results in multicollinearity (ibid.: 107). Because of this, in the first column of Table F1 in the appendix, we have offered tolerance values for all the independent variables except Age^2 and the set of cross-level interaction variables *Not economically active*Welfare regime*. In the second column, the squared term and the set of cross-level interaction variables have been added.

In the first column of Table F1 in the appendix, we can see that the variables *GDP per capita*, *Mediterranean,* and *Post-communist* all have tolerance values below .2. In the second column, where the squared term and the set of cross-level interaction variables have been included, the tolerance values of *Age* and *Not economically active* turn out to be much lower than what was the case for these independent variables in the first column. The reason for this is that we have included the variable Age^2, and that the variable *Not economically active* now takes part in the cross-level interaction effect *Not economically active*Welfare regime.* The most problematic value is the tolerance value for *Post-communist* in the second column, which is as low as .093. As this is a very important independent variable, from a theoretical perspective, we retained this dummy variable in our analysis. We consider this to be appropriate as long as we make the reader aware that this may make the regression results less stable.

5) Conclusion

The development of multinational surveys (such as the European Social Survey), combined with the development of multilevel modelling as a method of analysis in political science and sociology, enables us to focus on how contextual factors such as regime characteristics, ethnic fractionalisation, and economic development play a crucial part in influencing social trust at the individual level. In this concluding chapter, we will first give a summary of the master's thesis and shortly repeat the main findings. We will then discuss the scientific contribution of this master's thesis, which is accompanied by some suggestions for future research.

5.1) Summary and main findings

As social trust might have an influence how well a country performs, both politically but also in more general terms, it is both interesting and important to undertake a study on the *determinants* of social trust. In this master's thesis, by using data from five waves (2002-2010) of the European Social Survey, covering thirty European countries, ten different hypotheses have been tested by means of multilevel modelling. While five of these hypotheses focused on societal factors, four hypotheses concerned individual characteristics and experiences. The last hypothesis predicted a cross-level interaction effect between *Not economically active* (level-1) and *Welfare regime* (level-3).

Our multilevel regression analyses suggest large and statistically significant differences among welfare regimes when it comes to their levels of social trust. Even after controlling for other factors, the social democratic welfare regime was still found to have much higher levels of social trust compared to the four other welfare regimes (especially the Mediterranean and the post-communist welfare regimes). Referring back to the research question of this master's thesis, *"What impact does welfare regime have on social trust?"*, we could therefore conclude that welfare regime does indeed have an effect on the level of social trust within a country, with the conservative, liberal, Mediterranean, and post-communist welfare regimes causing lower levels of social trust as compared with their social democratic counterpart. These results confirm that it is reasonable to continue analysing European countries grouped into the five different welfare regimes as indicated previously in this master's thesis (Table 6). Several authors (Jensen and Svendsen 2011; Kumlin and Rothstein 2005; Larsen 2007; Rothstein and Uslaner 2005; Tamilina 2010) have provided an explanation for these findings

by focusing on how the *design* of welfare policies might have an influence on people's level of social trust, through the form/degree of stratification that these policies create within society. While universal welfare policies tend to mobilise social trust, experiences with familiaristic or selective/means-based welfare policies tend to undermine it.

In addition to welfare regimes, the multilevel analyses undertaken in this master's thesis also controlled for two other contextual factors; namely ethnic fractionalisation and national wealth. We hypothesised that ethnic fractionalisation should have a negative impact on the level of social trust, while national wealth should have a positive effect. However, as both of these variables eventually turned out to be non-significant in the final model (Model 9 in Table 4), we have not been able to neither confirm nor reject these two hypotheses. Although the main focus on this master's thesis has been on contextual determinants of social trust, the effect of individual level factors should not be ignored. When it comes to individual level determinants of social trust, our study gives support to the hypotheses that the success of a person's life has a positive effect on social trust, while not participating actively in the economy, or past negative experiences have a negative effect. The findings of this study also partly confirm our hypothesis concerning religious denomination as a determinant of social trust. Just as we hypothesised, Protestants were found to, on average, have a higher level of social trust than non-religious people. Our multilevel regression results also revealed that Catholics, on average, have a higher level of social trust than non-believers. This finding is not in accordance with our expectations, as we, due to the hierarchical features of Catholicism, actually had hypothesised the level of social trust among Catholics to be lower. Despite this, we could conclude that overall, most of our findings are in accordance with the existing theory and hypotheses about the determinants of social trust presented earlier in this master's thesis.

5.2) Suggestions for future research

Although our approach to test the link between welfare regime and social trust has been slightly different from the two previous multilevel studies conducted by Lee (2012) and Tamilina (2010), our conclusions are quite similar. First of all, all of the studies found that both individual as well as contextual factors matter when it comes to the level of social trust. This justifies the use of multilevel modelling, and should serve as an encouragement for future studies on the determinants of social trust to employ this method. Second, even after

controlling for other factors, it is apparent that welfare regime or particular welfare regime characteristics have a statistically significant impact on social trust levels. Our study supports the findings of both Lee (2012) and Tamilina (2010) that people in social democratic welfare regimes are more likely to trust each other, while people in conservative and liberal welfare states on average have a lower level of social trust. This means that Kolberg and Uusitalo (1992) indeed do have a point when requesting the use of welfare states as an *independent* variable. Even though this master's thesis to a large extent have been based on previous work and research conducted within the field, this study has contributed to enhancing our knowledge about the determinants of social trust by 1) improving the operationalisation of the dependent variable, by using an 11-point scale instead of the WVS dichotomous measure; 2) extending Esping-Andersen's (1990) original threefold typology to also include the Mediterranean and the post-communist welfare regimes; and 3) using more recent data as compared to previous studies, covering the time period 2002-2010. However, during the work with this master's thesis, a number of interesting topics came up that we were not able to address due to space and time constraints. We will now mention some of these issues, accompanied by a very brief proposal of how these topics could be further investigated and dealt with.

As we have previously pointed out, one of the main finding in this master's thesis is that it makes sense to continue classifying countries according to an extended version of Esping-Andersen's (1990) welfare regime typology, as this can shed some light on the variation in social trust among a number of European countries. We have suggested that in order to understand why especially the social democratic countries have a high level of social trust, while the conservative, liberal, and Mediterranean welfare states have comparably lower, one must take into account the variation in policy design among these countries. However, it is important to be aware that welfare regimes constitute much more than just policy design. There might be other characteristics that we have not mentioned in this master's thesis or only briefly commented on, that potentially could have an impact on social trust. It would be interesting if future studies could go more in depth and examine what exactly it is in the social democratic welfare regime that causes its high level of social trust, and what it is that causes the comparably lower levels of social trust in the other regime types. Is it really the design of policies that best explains this, or could this rather be due to any other underlying

mechanisms?[74] Although we in this master's thesis have used an extended, and in our opinion improved, version of Esping-Andersen's (1990) original threefold welfare regime typology, we do admit that more work is still needed within this area. This is especially true when it comes to the classification of the post-communist welfare states. In this master's thesis, these countries have been put in the same welfare regime category simply based on the fact that they all share a communist past and legacy. However, according to Fenger (2007: 13), it is important to be aware that the post-communist welfare regime comprises a group of very heterogeneous countries when it comes to their "institutional characteristics and paths of development"[75]. It would maybe therefore have been better if the post-communist welfare states had been placed in groups based on characteristics of their policy design, and the type of stratification caused by these characteristics, as we have done for the other four regime types. In addition, one could maybe consider simply adding a post-communist dummy to catch up the negative effect on social trust in these countries, due to the former repressive rule and the spying activities that took place during the communist era.

As mentioned in Section 3.5.1, we would ideally have preferred to test *directly* the mechanism at work in the different welfare regimes on the dependent variable, by including various measures for universalism, familialism, and selectivism as independent variables. This is similar to what Tamilina (2010) has done in her study. However, due to a lack of data with regards to the countries and the time period covered by our analyses, we were not able to do this. However, if this kind of data becomes available in the future, it would surely be interesting to undertake such a type of analysis. One of the motivations of this master's thesis has been Bjørnskov's (2007) request for an increased focus on the *determinants* of social trust. Although we have attempted to improve and enhance the research within this field, it is still apparent that more work needs to be done. We hope that some of the suggestions presented in this section could serve as a starting point for future research on this very interesting and highly important topic. We are convinced that addressing these issues, combined with the continued use of multilevel modelling, will surely enhance our knowledge on why the level of social trust varies both within, but especially between, countries.

[74] In future studies, it would for instance be interesting to look at how welfare regimes affect economic inequality and/or civic participation, and what impact this in turn has on the level of social trust. Rothstein and Uslaner (2005: 59) have for example highlighted that "[u]niversal welfare policies fare much better at reducing inequality than do simple redistribution schemes that imply selective policies". A number of studies have also examined the link between inequality and social trust (Alesina and Ferrera 2002; Delhey and Newton 2005; Knack and Keefer 1997; Uslaner and Brown 2003; Wilkinson and Pickett 2010).

[75] This is something that also has been highlighted by Oorschot and Arts (2005) and Rostila (2007).

6) References

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Appendices[76]

APPENDIX A: DESCRIPTIVE STATISTICS OF SOCIAL TRUST

TABLE A1: SOCIAL TRUST IN THE FIVE DIFFERENT WELFARE REGIMES

Standard deviation in parentheses.

Social democratic welfare regime

Year	**2002**	**2004**	**2006**	**2008**	**2010**
Denmark	20.50 (4.62)	20.11 (4.94)	20.56 (4.65)	20.42 (4.72)	20.20 (4.43)
Finland	19.02 (4.64)	-	19.31 (4.44)	18.95 (4.56)	19.08 (4.51)
Norway	19.59 (4.47)	19.53 (4.38)	19.94 (4.38)	19.56 (4.38)	19.74 (4.29)
Sweden	18.75 (4.91)	18.51 5.13)	18.97 (4.68)	19.12 (4.55)	19.21 (4.58)
Average	**19.46**	**19.38**	**19.69**	**19.51**	**19.55**

Conservative welfare regime

Year	**2002**	**2004**	**2006**	**2008**	**2010**
Austria	15.77 (6.14)	16.26 (5.67)	16.11 (5.98)	-	-
Belgium	14.94 (5.36)	14.80 (5.05)	15.35 (5.10)	15.83 (4.84)	15.68 (4.60)
Switzerland	17.18 (4.84)	17.62 (4.71)	17.86 (4.63)	17.70 (5.05)	17.64 (4.99)
Germany	15.30 (5.12)	15.33 (5.25)	15.49 (5.18)	15.80 (5.23)	15.53 (5.16)
France	-	-	14.77 (4.89)	14.73 (4.90)	14.61 (4.81)
Luxembourg	15.39 (5.46)	15.53 (5.67)	-	-	-
The Netherlands	17.14 (4.83)	17.39 (4.59)	17.31 (4.58)	17.69 (4.80)	18.17 (4.36)
Average	**15.95**	**16.15**	**16.14**	**16.35**	**16.32**

Liberal welfare regime

Year	**2002**	**2004**	**2006**	**2008**	**2010**
United Kingdom	16.07 (5.17)	-	-	16.59 (5.27)	16.78 (4.92)
Ireland	17.43 (5.65)	18.21 (5.49)	16.99 (5.50)	17.46 (4.91)	16.47 (5.59)
Average	**16.75**	**18.21**	**16.99**	**17.02**	**16.62**

Mediterranean welfare regime

Year	**2002**	**2004**	**2006**	**2008**	**2010**
Cyprus	-	-	-	13.85 (6.11)	11.81 (5.83)

[76] All the Tables and Figures in the appendix are based on the data for the third categorisation (thirty countries, five welfare regime categories), where level-1 N = 207,942, level-2 N = 115 and level-3 N = 30, unless otherwise specified.

Greece	10.33 (6.02)	10.88 (5.85)	-	10.91 (5.85)	11.18 (5.78)
Israel	14.49 (6.09)	-	-	15.58 (5.56)	15.40 (5.55)
Italy	13.24 (5.58)	12.57 (5.41)	-	-	-
Portugal	12.84 (5.20)	12.53 (4.77)	12.84 (5.66)	12.41 (5.41)	12.60 (5.20)
Spain	14.51 (5.47)	14.39 (5.29)	14.97 (4.49)	14.63 (4.91)	15.23 (4.37)
Turkey	-	10.07 (6.87)	-	8.39 (7.05)	-
Average	**13.08**	**12.08**	**13.90**	**12.62**	**13.24**

Post-communist welfare regime

Year	**2002**	**2004**	**2006**	**2008**	**2010**
Bulgaria	-	-	-	10.80 (6.26)	11.15 (6.08)
Croatia	-	-	-	12.09 (6.29)	13.22 (6.04)
Czech Republic	13.47 (5.86)	13.37 (5.73)	-	14.29 (6.04)	13.88 (6.05)
Estonia	-	15.39 (5.13)	15.67 (5.59)	16.16 (5.18)	17.10 (5.53)
Hungary	12.88 (5.92)	-	13.42 (6.39)	13.11 (5.80)	14.09 (5.73)
Poland	11.48 (5.40)	11.41 (5.53)	12.46 (5.44)	12.72 (5.35)	13.28 (5.51)
Russia	-	-	12.41 (6.45)	13.02 (6.40)	13.50 (6.07)
Slovakia	-	12.23 (5.41)	13.21 (5.79)	12.75 (6.15)	12.60 (6.17)
Slovenia	12.91 (6.07)	10.13 (7.14)	13.51 (6.03)	14.15 (5.83)	12.85 (6.06)
Ukraine	-	12.92 (6.16)	12.10 (6.52)	12.01 (7.00)	12.54 (6.33)
Average	**12.68**	**12.57**	**13.25**	**13.11**	**13.42**

Source: ESS Cumulative Data Set Rounds 1-5.

APPENDIX B: THE EMPLOYED DATA MATERIAL

TABLE B1: OVERVIEW OF ALL THE COUNTRY-YEARS INCLUDED IN OUR FINAL ANALYSIS, N (LEVEL-2) = 115

Country	**Wave 1 (2002)**	**Wave 2 (2004)**	**Wave 3 (2006)**	**Wave 4 (2008)**	**Wave 5 (2010)**
Austria	X	X	X	---	---
Belgium	X	X	X	X	X
Bulgaria	---	---	---	X	X
Croatia	---	---	---	X	X
Cyprus	---	---	---	X	X
Czech Republic	X	X	---	X	X
Denmark	X	X	X	X	X
Estonia	---	X	X	X	X
Finland	X	---	X	X	X
France	---	---	X	X	X
Germany	X	X	X	X	X
Greece	X	X	---	X	X
Hungary	X	---	X	X	X
Ireland	X	X	X	X	X
Israel	X	---	---	X	X
Italy	X	X	---	---	---
Luxembourg	X	X	---	---	---
Netherlands	X	X	X	X	X
Norway	X	X	X	X	X
Poland	X	X	X	X	X
Portugal	X	X	X	X	X
Russia	---	---	X	X	X
Slovakia	---	X	X	X	X
Slovenia	X	X	X	X	X
Spain	X	X	X	X	X
Sweden	X	X	X	X	X
Switzerland	X	X	X	X	X
Turkey	---	X	---	X	---
Ukraine	---	X	X	X	X
United Kingdom	X	---	---	X	X

Source: World Bank – World Development Indicators: http://data.worldbank.org/

APPENDIX C: THE DEPENDENT VARIABLE – SCALE CONSTRUCTION AND DISTRIBUTION

TABLE C1: PRINCIPAL COMPONENT ANALYSIS FROM THE EUROPEAN SOCIAL SURVEY (WAVES 1-5)

Rotated Component Matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Trust in politicians	.838					
Trust in political parties	.831					
Trust in country's parliament	.806					
Trust in the European Parliament	.757					
Trust in the legal system	.736					
Trust in the United Nations	.711					
Trust in the police	.645					
Most ppl try to take advantage of you, or try to be fair		.812				
Most ppl can be trusted or you can't be too careful		.782				
Most of time ppl helpful or mostly looking out for themselves		.777				
Politics too complicated to understand			.792			
Making mind up about political issues (recoded)			.785			
How interested in politics			.670			
Newspaper reading, politics/current affairs on average weekday				.878		
Newspaper reading, total time on average weekday				.870		
Radio listening, total time on average weekday					.878	
Radio listening news/politics/current affairs on average weekday					.840	
TV watching, total time on average weekday						.884
TV watching news/politics/current affairs on average weekday						.782
Cronbach's alpha	**.900**	**.781**	**.673**	**.752**	**.608**	**.549**

Note: All factor loadings less than 0.35 have been suppressed. The KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy, which measures the homogeneity in the variables, is .801. High KMO-values (between 0.5 and 1.0) indicate that factor analysis is appropriate.
Rotation Method: Varimax with Kaiser Normalisation. Rotation converged in 5 iterations.
Source: ESS Cumulative Data Set Rounds 1-5.

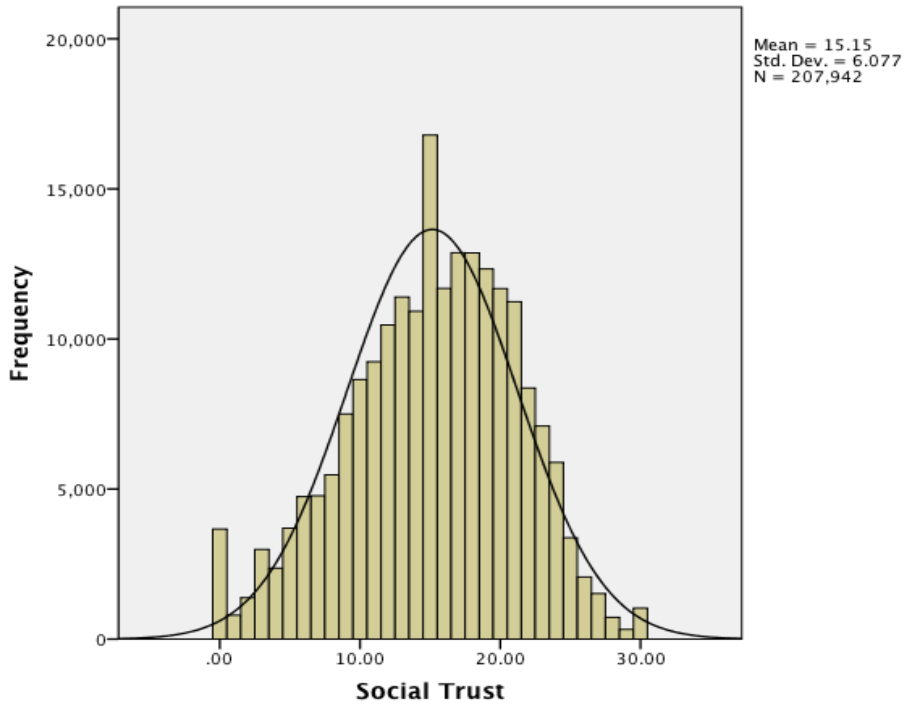

FIGURE C1: DISTRIBUTION OF THE DEPENDENT VARIABLE
Source: ESS Cumulative Data Set Rounds 1-5.

APPENDIX D: VARIABLES AT THE CONTEXTUAL LEVEL

TABLE D1: THREE DIFFERENT CATEGORISATIONS OF WELFARE REGIMES

Country	In Esping-Andersen's (1990) original typology)[a]	**Categorisation 1** (17 countries, 3 welfare regime categories)	**Categorisation 2** (17 countries, 4 welfare regime categories)	**Categorisation 3** (30 countries, 5 welfare regime categories)
Austria	X	Conservative	Conservative	Conservative
Belgium	X	Conservative	Conservative	Conservative
Bulgaria		---	---	Post-communist
Croatia		---	---	Post-communist
Cyprus		---	---	Mediterranean
Czech Republic		---	---	Post-communist
Denmark	X	Social democratic	Social democratic	Social democratic
Estonia		---	---	Post-communist
Finland	X	Social democratic	Social democratic	Social democratic
France	X	Conservative	Conservative	Conservative
Germany	X	Conservative	Conservative	Conservative
Greece		Conservative	Mediterranean	Mediterranean
Hungary		---	---	Post-communist
Ireland	X	Liberal	Liberal	Liberal
Israel		---	---	Mediterranean
Italy	X	Conservative	Mediterranean	Mediterranean
Luxembourg		Conservative	Conservative	Conservative
Netherlands[b]	X	Conservative	Conservative	Conservative
Norway	X	Social democratic	Social democratic	Social democratic
Poland		---	---	Post-communist
Portugal		Conservative	Mediterranean	Mediterranean
Russia		---	---	Post-communist
Slovakia		---	---	Post-communist
Slovenia		---	---	Post-communist
Spain		Conservative	Mediterranean	Mediterranean
Sweden	X	Social democratic	Social democratic	Social democratic
Switzerland[b]	X	Conservative	Conservative	Conservative
Turkey		---	---	Mediterranean
Ukraine		---	---	Post-communist
United Kingdom	X	Liberal	Liberal	Liberal

[a] Five of the countries included in Esping-Andersen's (1990) original threefold typology have not been included in our study, as they are not situated in Europe and hence not covered by the ESS integrated data set. These countries are Australia, New Zealand, Canada, the United States, and Japan.

[b] The Netherlands and Switzerland have been categorised as conservative in all the three categorisations mentioned above. It should however be noted that the Netherlands share many characteristics with the social democratic regime type (Esping Andersen 1990; Kumlin 2004: 53), while Switzerland has some liberal characteristics (Esping-Andersen 1990; Esping-Andersen 1999). In most work on this topic, however, these countries have been classified as conservative regime types (Arts and Gelissen 2002; Esping-Andersen 1999; Fenger 2007; Visser and Hemerijck 1997). We therefore treat them as conservative in our analysis.

Sources: Arts and Gelissen (2002), Deacon (2003), Esping-Andersen (1990, 1999), Fenger (2007), Ferrera (1996), Gal (2010), Rostila (2007), Visser and Hemerijck (1997).

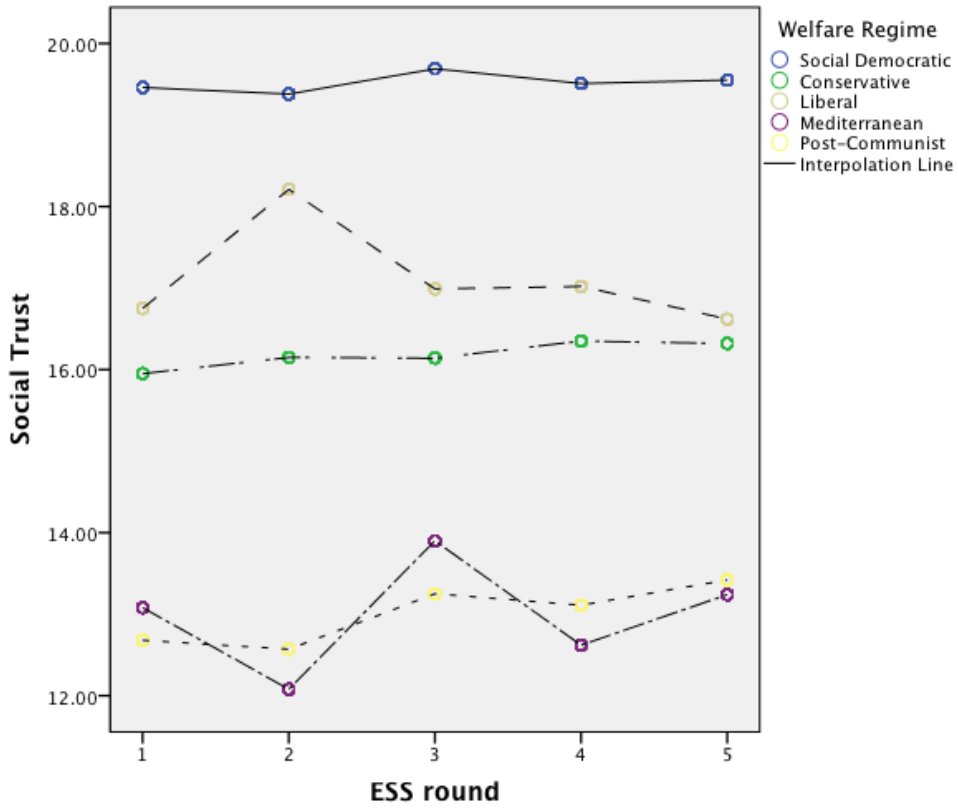

FIGURE D1: SOCIAL TRUST IN THE DIFFERENT WELFARE REGIMES
Source: ESS Cumulative Data Set Rounds 1-5.

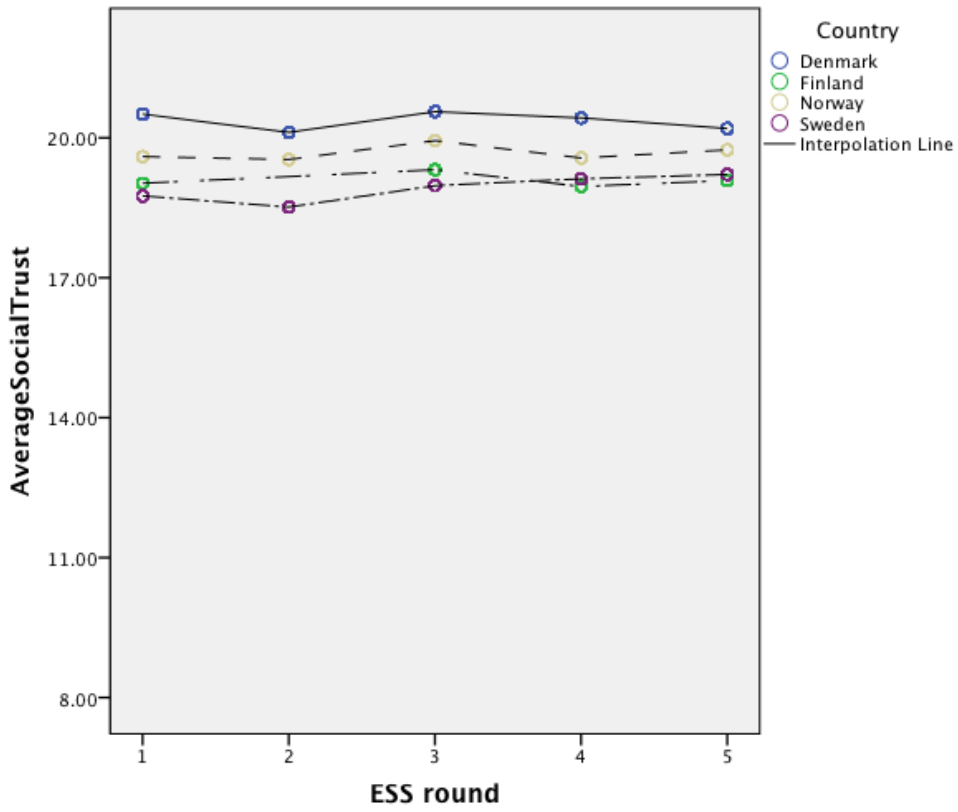

FIGURE D2: SOCIAL TRUST IN SOCIAL DEMOCRATIC WELFARE STATES
Source: ESS Cumulative Data Set Rounds 1-5.

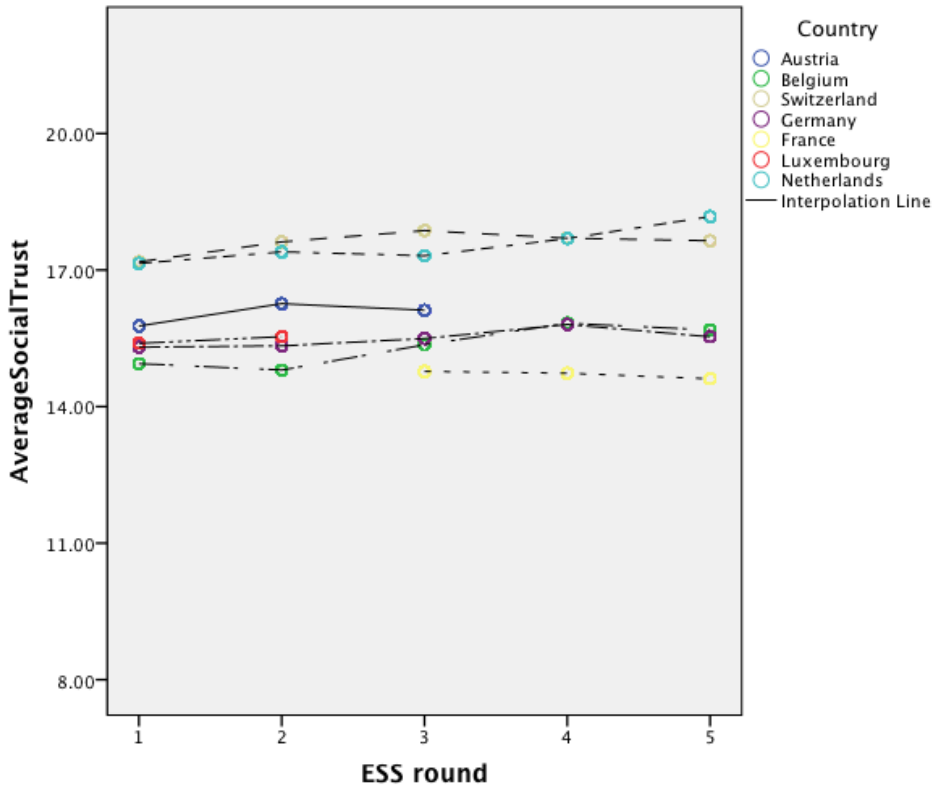

FIGURE D3: SOCIAL TRUST IN CONSERVATIVE WELFARE STATES
Source: ESS Cumulative Data Set Rounds 1-5.

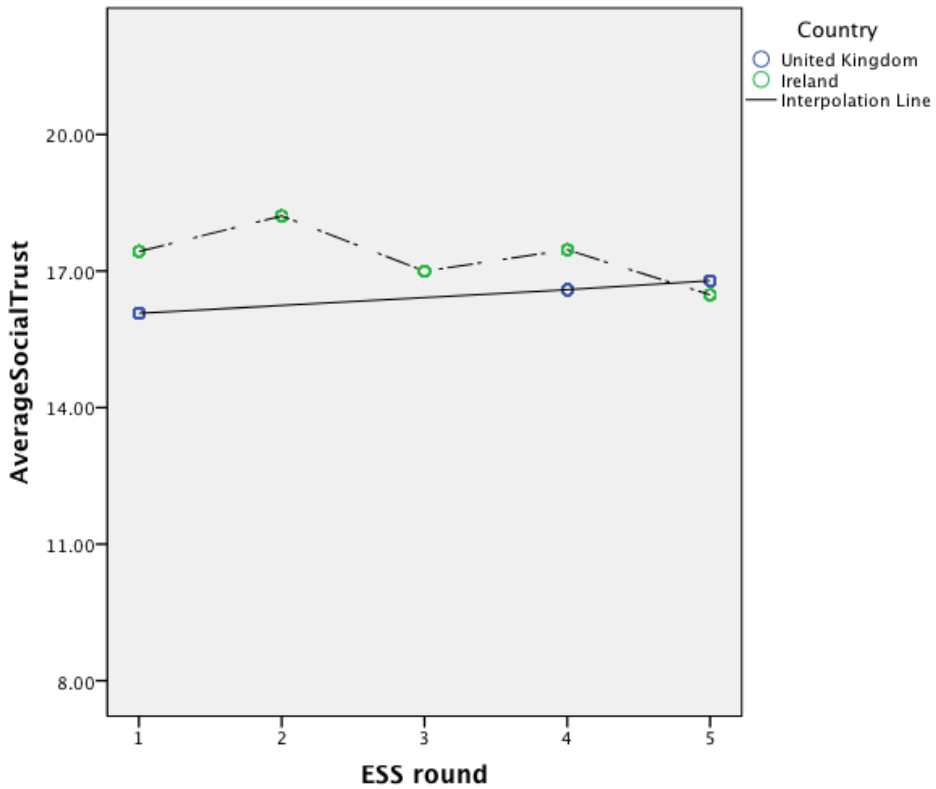

FIGURE D4: SOCIAL TRUST IN LIBERAL WELFARE STATES
Source: ESS Cumulative Data Set Rounds 1-5.

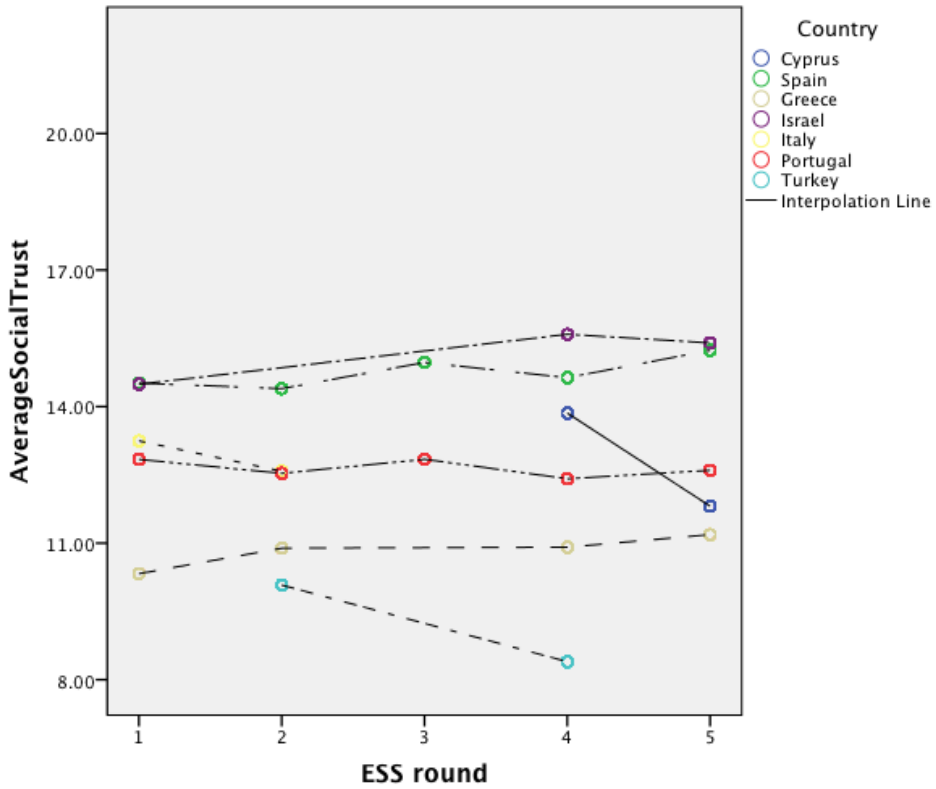

FIGURE D5: SOCIAL TRUST IN MEDITERRANEAN WELFARE STATES
Source: ESS Cumulative Data Set Rounds 1-5.

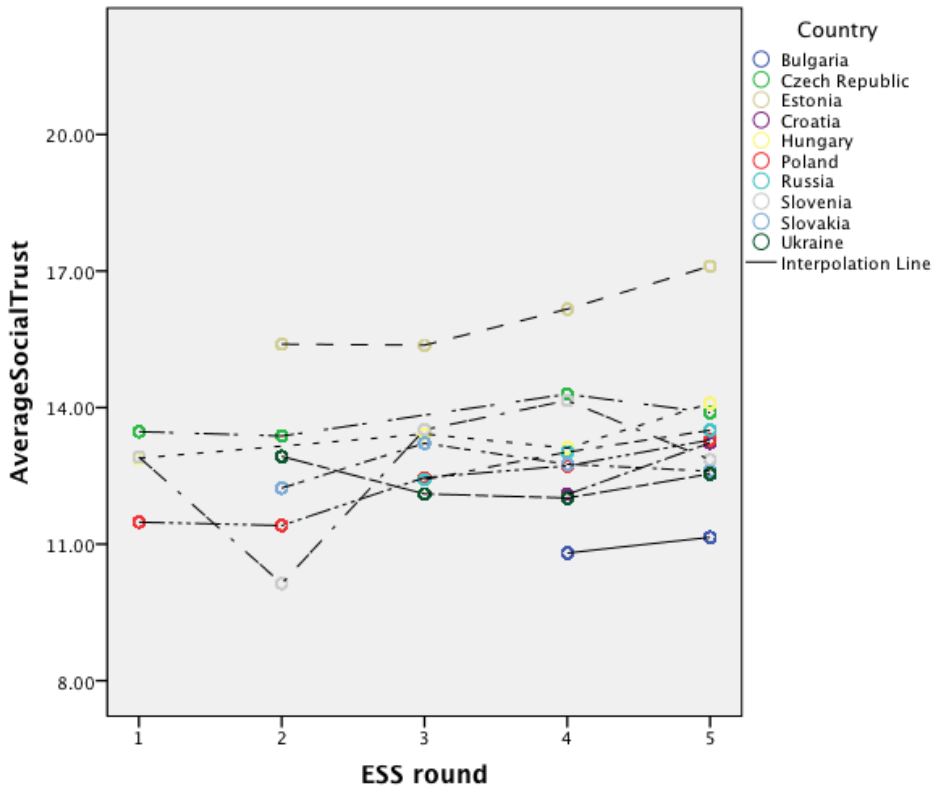

FIGURE D6: SOCIAL TRUST IN POST-COMMUNIST WELFARE STATES
Source: ESS Cumulative Data Set Rounds 1-5.

TABLE D2: INDEX ETHNIC FRACTIONALISATION

	Country	Index Ethnic Fractionalisation	Year	Source*
Social democratic welfare regime	Denmark	8.19	1996	eb
	Finland	13.15	2001	cia
	Norway	5.86	1998	lev
	Sweden	6.00	1998	lev
Conservative welfare regime	Austria	10.68	1998	lev
	Belgium	55.54	2001	cia
	Switzerland	53.14	2001	cia
	Germany	16.82	1997	eb
	France	10.32	1999	census
	Luxembourg	53.02	1996	eb
	Netherlands	10.54	1995	lev
Liberal welfare regime	United Kingdom	12.11	1994	eb
	Ireland	12.06	1995	eb
Mediterranean welfare regime	Cyprus	9.39	1992	eb
	Greece	15.76	1998	lev
	Israel	34.36	1995	census
	Italy	11.45	1983	eb
	Portugal	4.68	1998	lev
	Spain	41.65	1991	eb
	Turkey	32.00	2001	cia
Post-communist welfare regime	Bulgaria	40.21	1992	wdm
	Croatia	36.90	1991	eb
	Czech Republic	32.22	1991	eb
	Estonia	50.62	1994	eb
	Hungary	15.22	1993	eb
	Poland	11.83	1998	lev
	Russia	24.52	1997	eb
	Slovakia	25.39	1996	eb
	Slovenia	22.16	1991	cia
	Ukraine	47.37	1998	eb

* eb=Encyclopedia Britannica, cia=CIA, lev=Levinson (1998), census=National census data, wdm=World Directory of Minorities.
Source: Alesina et al. (2003).

TABLE D3: DESCRIPTIVE STATISTICS GDP PER CAPITA (IN $1000, CONSTANT 2005 US$)

Social democratic welfare regime

Year	**2001**	**2003**	**2005**	**2007**	**2009**
Denmark	45.49	45.61	47.54	49.55	45.86
Finland	33.89	-	37.31	40.71	36.99
Norway	61.62	62.45	65.76	67.80	65.08
Sweden	36.93	38.47	41.04	43.65	40.53
Average	**44.48**	**48.84**	**47.91**	**50.42**	**47.11**

Conservative welfare regime

Year	**2001**	**2003**	**2005**	**2007**	**2009**
Austria	35.19	35.74	37.06	-	-
Belgium	34.16	34.60	36.01	37.51	36.24
Switzerland	50.49	49.84	51.73	54.89	53.63
Germany	33.10	32.90	33.54	36.01	34.68
France	-	-	33.81	34.98	33.49
Luxembourg	73.33	75.87	-	-	-
Netherlands	37.98	37.71	39.12	41.87	40.70
Average	**44.04**	**44.44**	**38.54**	**41.05**	**39.74**

Liberal welfare regime

Year	**2001**	**2003**	**2005**	**2007**	**2009**
United Kingdom	34.67	-	-	40.02	37.55
Ireland	43.21	45.91	48.74	51.72	46.77
Average	**38.94**	**45.91**	**48.74**	**45.87**	**42.16**

Mediterranean welfare regime

Year	**2001**	**2003**	**2005**	**2007**	**2009**
Cyprus	-	-	-	23.73	23.70
Greece	18.74	20.40	-	23.43	22.46
Israel	18.73	-	-	20.78	20.91
Italy	30.41	30.20	-	-	-
Portugal	18.23	17.95	18.18	18.78	18.19
Spain	24.52	25.16	26.05	27.13	25.76
Turkey	-	6.17	-	7.77	-
Average	**22.12**	**19.97**	**22.11**	**20.27**	**22.20**

Post-communist welfare regime

Year	**2001**	**2003**	**2005**	**2007**	**2009**
Bulgaria	-	-	-	4.27	4.33
Croatia	-	-	-	11.13	10.59
Czech Republic	10.72	11.39	-	14.24	13.81
Estonia	-	8.87	10.33	12.26	10.11
Hungary	9.15	-	10.93	11.41	10.98
Poland	6.90	7.28	7.96	9.04	9.65
Russia	-	-	5.33	6.31	6.13
Slovakia	-	10.17	11.38	13.60	13.62
Slovenia	15.45	16.48	17.85	20.02	18.87
Ukraine	-	1.56	1.82	2.14	1.88
Average	**10.55**	**9.29**	**9.37**	**10.44**	**9.99**

Source: World Bank – World Development Indicators: http://data.worldbank.org/

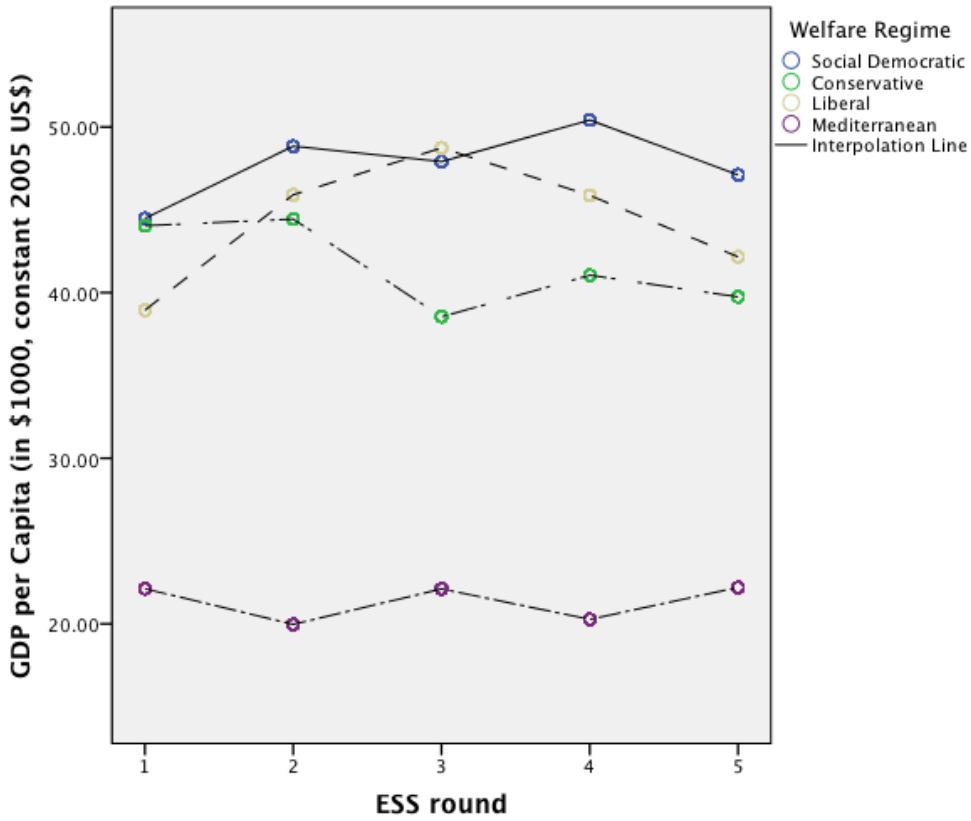

FIGURE D7: GDP PER CAPITA IN FOUR DIFFERENT WELFARE REGIMES (CATEGORISATION 2, 17 COUNTRIES)

Sources: ESS Cumulative Data Set Rounds 1-5; World Bank – World Development Indicators: http://data.worldbank.org/

APPENDIX E: RESULTS OF THE MULTILEVEL REGRESSION ANALYSES

TABLE E1: CATEGORISATION 1 AND 2 – ONLY INDIVIDUAL LEVEL VARIABLES

Random intercept model with three levels (individual, country-year, and country).
Dependent variable: Social Trust. Regression coefficients with standard error in parentheses.

	Model 0	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Intercept	16.187****	16.025****	16.147****	16.248****	13.581****	13.533****
	(.613)	(.613)	(.621)	(.619)	(.554)	(.539)
Time control[a]						
ESS Round 2 (2004)		.070	.067	.065	.064	.063
		(.112)	(.112)	(.112)	(.104)	(.103)
ESS Round 3 (2006)		.264**	.257**	.261**	.146	.151
		(.117)	(.117)	(.116)	(.108)	(.108)
ESS Round 4 (2008)		.263**	.255**	.256**	.136	.145
		(.114)	(.114)	(.113)	(.106)	(.105)
ESS Round 5 (2010)		.285**	.273**	.272**	.173	.186*
		(.114)	(.114)	(.113)	(.106)	(.105)
Level 1						
Woman			.173****	.178****	.334****	.306****
			(.027)	(.027)	(.027)	(.027)
Age			-.016****	-.017****	-.046****	-.047****
			(.003)	(.003)	(.003)	(.003)
Age^2			.000****	.000****	.000****	.000****
			(.000)	(.000)	(.000)	(.000)
Domicile[b]						
Living in the suburbs				-.093*	-.081*	-.096*
				(.050)	(.049)	(.049)
Living in a town				-.250****	-.120***	-.144****
				(.042)	(.042)	(.042)
Living in a village				-.016	.146****	.101**
				(.042)	(.042)	(.042)
Living on a farm/in the countryside				.299****	.465****	.400****
				(.062)	(.061)	(.061)
Education					.166****	.165****
					(.003)	(.003)
Satisfied with household income					1.390****	1.369****
					(.037)	(.037)
Not economically active					-.475****	-.473****
					(.035)	(.035)
Crime victim					-.647****	-.641****
					(.034)	(.034)
Member of a discriminated group					-1.482****	-1.454****
					(.058)	(.058)
Religious denomination[c]						
Protestant						.570****
						(.041)
Catholic						.225****
						(.039)
Other religions						-.079
						(.067)
Var(e_{ijk})	25.793	25.793	25.768	25.747	24.667	24.629
	(.099)	(.099)	(.099)	(.099)	(.094)	(.094)
Var(u_{0jk})	.095	.078	.078	.077	.065	.065
	(.020)	(.017)	(.017)	(.017)	(.015)	(.015)
Var(v_{0k})	6.369	6.305	6.334	6.272	4.954	4.667
	(2.194)	(2.170)	(2.180)	(2.159)	(1.706)	(1.608)
-2LL	823249.92	823240.92	823112.02	822999.74	817199.06	816988.56
-2LL change	–	8.99*	128.90****	112.29****	5800.67****	210.49****

[a] ESS Round 1 (2002) is set as the reference category.
[b] Big city is set as the reference category.
[c] Not religious is set as the reference category.
N (level-1) = 135,186, N (level-2) = 71, N (level-3) = 17.
Var(e_{ijk}) = Variance of level-1 residual, Var(u_{0jk}) = Variance of level-2 residual, Var(v_{0k}) = Variance of level-3 residual.
**** = p<0.001, ***= p<0.01, ** = p<0.05, * = p<0.1.
Note: In all of the models in this table, it looks like the coefficient of Age^2 is .000. However, the reader should be made aware that in all of the models, the coefficients were actually slightly positive.

TABLE E2: CATEGORISATION 3 – ONLY INDIVIDUAL LEVEL VARIABLES

Random intercept model with three levels (individual, country-year, and country).

Dependent variable: Social Trust. Regression coefficients with standard error in parentheses.

	Model 0	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Intercept	14.765	14.495****	15.145****	15.277****	12.875****	12.763****
	(.497)	(.509)	(.515)	(.515)	(.456)	(.452)
Time control[a]						
ESS Round 2 (2004)		.100	.097	.097	.123	.123
		(.142)	(.142)	(.141)	(.129)	(.129)
ESS Round 3 (2006)		.318**	.314**	.315**	.217*	.219*
		(.144)	(.144)	(.144)	(.131)	(.131)
ESS Round 4 (2008)		.373***	.369***	.366***	.228*	.233*
		(.135)	(.135)	(.135)	(.123)	(.123)
ESS Round 5 (2010)		.464****	.457****	.454****	.316*	.323***
		(.509)	(.136)	(.135)	(.123)	(.123)
Level 1						
Woman			.207****	.209****	.355****	.331****
			(.023)	(.023)	(.023)	(.023)
Age			-.037****	-.037****	-.062****	-.061****
			(.003)	(.003)	(.003)	(.003)
Age^2			.000****	.000****	.000****	.000****
			(.000)	(.000)	(.000)	(.000)
Domicile[b]						
Living in the suburbs				-.129***	-.071	-.075*
				(.044)	(.044)	(.044)
Living in a town				-.285****	-.131****	-.145****
				(.034)	(.034)	(.034)
Living in a village				-.107***	.133****	.103***
				(.034)	(.034)	(.034)
Living on a farm/in the countryside				.199****	.416****	.369****
				(.059)	(.058)	(.058)
Education					.159****	.158****
					(.003)	(.003)
Satisfied with household income					1.264****	1.257****
					(.029)	(.029)
Not economically active					-.423****	-.426****
					(.030)	(.030)
Crime victim					-.674****	-.669****
					(.030)	(.030)
Member of a discriminated group					-1.475****	-1.477****
					(.048)	(.049)
Religious denomination[c]						
Protestant						.583****
						(.041)
Catholic						.207****
						(.035)
Other religions						.207****
						(.049)
Var(e_{ijk})	29.363	29.363	29.334	29.317	28.316	28.288
	(.091)	(.091)	(.091)	(.090)	(.087)	(.087)
Var(u_{0jk})	.213	.178	.178	.177	.145	.145
	(.036)	(.030)	(.030)	(.030)	(.025)	(.025)
Var(v_{0k})	7.355	7.464	7.492	7.476	5.757	5.628
	(1.916)	(1.942)	(1.949)	(1.945)	(1.499)	(1.466)
-2LL	1293353.16	1293339.34	1293130.32	1293012.56	1285769.26	1285558.28
-2LL change	–	13.82***	209.02****	117.76****	7243.30****	210.98****

[a] ESS Round 1 (2002) is set as the reference category.

[b] Big city is set as the reference category.

[c] Not religious is set as the reference category.

N (level-1) = 207,942, N (level-2) = 115, N (level-3) = 30.

Var(e_{ijk}) = Variance of level-1 residual, Var(u_{0jk}) = Variance of level-2 residual, Var(v_{0k}) = Variance of level-3 residual.

**** = p<0.001, ***= p<0.01, ** = p<0.05, * = p<0.1.

Note: In all of the models in this table, it looks like the coefficient of Age^2 is .000. However, the reader should be made aware that in all of the models, the coefficients were actually slightly positive.

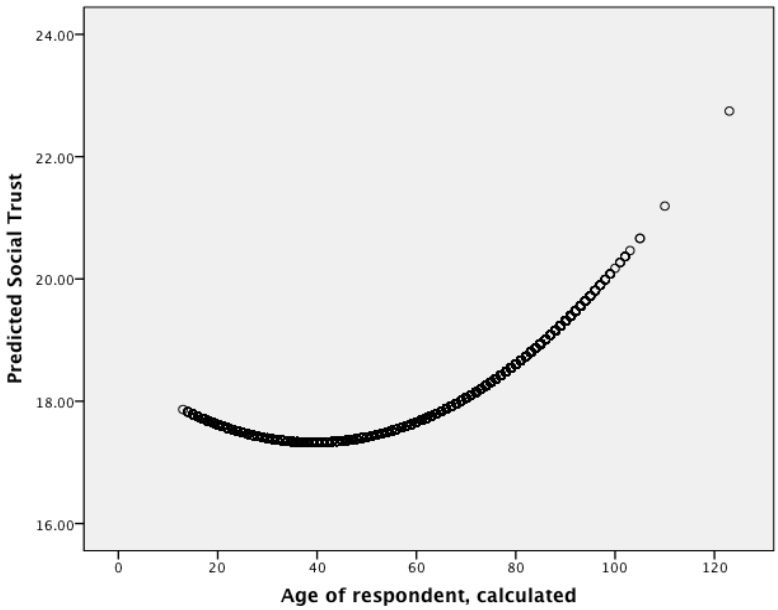

FIGURE E1: ILLUSTRATING CURVILINEAR RELATIONSHIP BETWEEN AGE AND SOCIAL TRUST (CATEGORISATION 3)

Note: Predicted probabilities for different values of *Age*. All dummy variables are set to the reference category. All categorical values are set at their mean values found in the data material. The turning point of *Age* is calculated in Stata by using the command: display -1*_b[agea]/(2*_b[agea2]) = 39.73.

Source: ESS Cumulative Data Set Rounds 1-5.

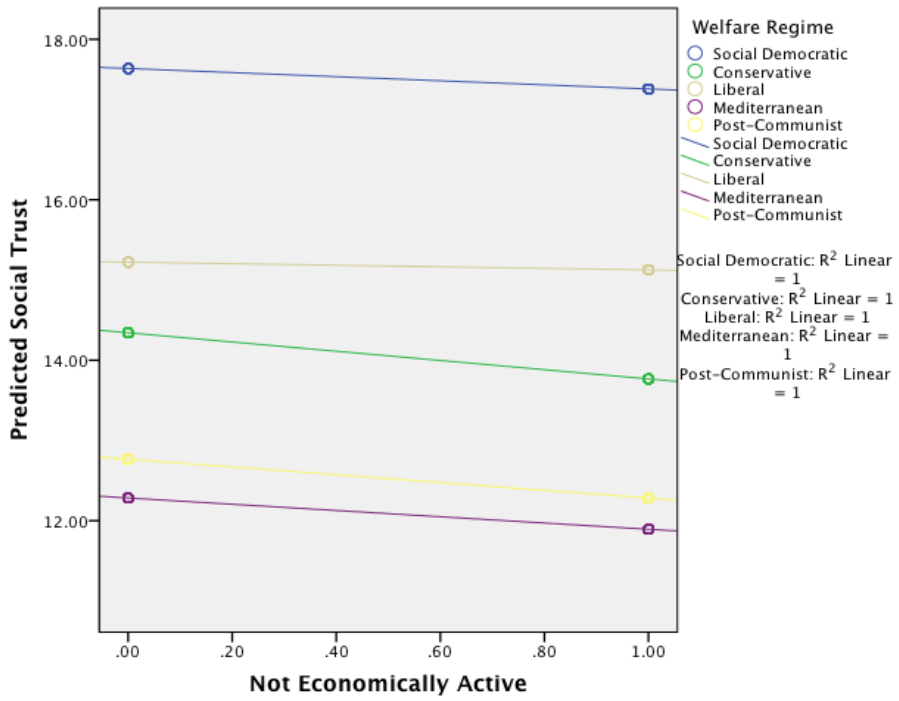

FIGURE E2: ILLUSTRATING THE CROSS-LEVEL INTERACTION EFFECT BETWEEN *NOT ECONOMICALLY ACTIVE* AND *WELFARE REGIME* (CATEGORISATION 3)

Note: Predicted probabilities for different values of *Not economically active* and *Welfare regime*. All dummy variables are set to the reference category. All categorical values are set at their mean values found in the data material.

Source: ESS Cumulative Data Set Rounds 1-5.

APPENDIX F: TESTING THE ASSUMPTIONS OF THE FINAL MODEL

TABLE F1: TOLERANCE VALUES FOR THE INDEPENDENT VARIABLES

Variables	**Without squared term/interaction terms**	**Including squared term/interaction terms**
ESS Round 2	.606	.606
ESS Round 3	.609	.609
ESS Round 4	.549	.549
ESS Round 5	.551	.550
Woman	.966	.964
Age	.667	**.035**
Age^2	–	**.033**
Living in the suburbs	.691	.690
Living in a town	.568	.567
Living in a village	.546	.543
Living on a farm/in countryside	.730	.728
Education	.774	.734
Satisfied with household income	.808	.798
Not economically active	.633	**.125**
Crime victim	.967	.967
Member of a discriminated group	.973	.971
Protestant	.728	.726
Catholic	.659	.658
Other religions	.610	.609
GDP per capita (in $1000)	**.187**	**.186**
Ethnic Fractionalisation	.681	.680
Conservative	.315	.236
Liberal	.616	.386
Mediterranean	**.189**	**.158**
Post-communist	**.104**	**.093**
Not economically active*Conservative	–	.225
Not economically active*Liberal	–	.358
Not economically active*Mediterranean	–	.230
Not economically active*Post-communist	–	.201

Note: Tolerance values less than .2 have been marked in bold.
Source: ESS Cumulative Data Set Rounds 1-5.