The welfare state and social capital in Europe: Addressing a complex relationship through multidimensionality

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Abstract

This thesis examines the complex relationship between social capital and the welfare state. Focusing on the measurement of both social capital and the welfare state, it highlights the importance of accounting for dimensionality in explaining the role of the welfare state in effecting social capital outcomes. It draws attention to how conflicting evidence for the welfare states influence on social capital relates to theoretical and methodological choices. Building on existing theory and evidence, it provides a workable framework for social capital that is theoretical and empirically substantiated.

The framing of the debate for the welfare state's role in effecting social capital outcomes is primarily within the context of the 'crowding-out' debate, which reflects the broader ideological narratives of the relationship between the individual, market and state. Here I draw attention to two limiting assumptions; i) that the welfare state 'crowds-in' or 'crowds-out' ii) that it affects everyone equally. These two issues form the basis for the first two research questions, where we aim to understand in what circumstances 'crowding-out' occurs and whether this varies according to socioeconomic factors. In the final analytical, I consider how the established dimensions of social capital relate to one another, highlighting the central role of trust in social capital formation and implications for welfare state policy.

The analyses combine European Quality of Life Survey data and contextual information using a range of quantitative methods, including multilevel modelling, structural equation modelling and path analysis. The findings show that generous and universal welfare provision is important for social capital outcomes but is limited in alleviating the inequalities between socioeconomic groups.

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1 Introduction

As the impact of structural reforms and the ongoing program of austerity unfolds across Europe, the consequences for both the individual and society remain prescient. The importance of the welfare state in protecting its citizens from market failure continues to be brought into question (Farnsworth 2016). Within this context, social capital represents a vital resource that acts as an intermediary between the individual, state and the market. Its popularisation is embedded within the concerns of modernisation on society (Tönnies 1887; Durkheim 1893), alongside the politics of neoliberalism and rational choice theory (Fine 2010; Ferragina 2017), and the transfer of responsibility for provision to the individual (Gilbert 2005). As such, the nature of the role played by the welfare state in shaping our social environment and ability to participate within society demands critical reflection

Here in the UK, the current liberalisation processes present the need for deficit reduction whilst simultaneously promoting the positive outcomes of self-help, governance and provision laid out in the ideas of the big society (Cabinet Office 2010). The positive portrayal of shifting the responsibility to the individual and third sector for service provision is one of enhancement for both individual autonomy and civil society. In this context, social capital is an essential resource that enhances both economic and social development. Where individuals free from the confines of the state can innovate and mobilise their social resources to positive ends.

Despite the significant amount of research dedicated to the field, the nature of the relationship between the welfare state and social capital remains highly contested, both at the theoretical and empirical levels (Ferragina 2017). For some, the comprehensive welfare state impedes social capital development, crowding-out the networks of civic participation and creating distrust (Wolfe 1989; Etzioni 1995; Fukuyama 2000; Scheepers et al., 2002). For others, it is a significant determinant of social capital, which promotes solidarity, trust and wider participation (Kunemund and Rein 1999; Rothstein 2001; van Oorschot and Arts 2005; van Oorschot and Finsveen 2010).

The thesis presented here primarily concerns itself with disentangling this contradictory relationship of the welfare state and social capital. It does this by explicitly drawing attention to the limitations inherent within the crowding-out vs crowding-in debate, offering an alternative of social capital calibration. It does this by following a fully dimensional account of social capital, focussing on the measurement of both the dependent and independent

variables. Here I draw to the reader's attention the central importance of how varied measurement of social capital and the welfare state sustains contested outcomes. By addressing theoretical, analytical and empirical concerns, the thesis aims to provide clarity and rigour to the social capital welfare state discussion.

1.1 Structure of the thesis

The first chapter begins by introducing the literature and situates the research questions within the field of study. Here I present the existing theoretical positions on social capital that distinguishes between the individual-level and society-centred approaches to understanding social capital. The informed model proposed is most in line with the notion of access to individual resources yet establishes a bridge to the collective social environment via trust. This distinction is an important one. Acknowledging dimensionality is essential to understanding the multifaceted nature of social capital. Specifically, as we will find throughout the existing literature, the multitude of uses and applications of social capital's elements are critical factors in an unclear comprehension of outcomes. Only by separating the structural and relational elements, along with types of individual and collective resources, can we provide the necessary distinctions to address the crowding-out debate. In doing so, the hope is to clarify the nature of the welfare state on social capital outcomes.

At the same time, we can only achieve clarity concerning crowding-out through an adequate representation of the welfare state, which has thus far been insufficient. Here I address the existing limitations of expenditure and regime approaches, emphasising the importance of generosity in understanding the social capital, welfare state relationship. Alongside generosity, I also account for the welfare state through its level of universalism. Together, the dimensional account of social capital and the welfare state allows a comprehensive assessment of whether the welfare state matters for social capital outcomes.

In the second part of the literature review, I address a second substantive issue with the crowding-out debate - the assumption that everyone has equal access to resources. It is perhaps somewhat of an omission that the crowding-out debate has largely ignored the potential for welfare states to vary in social capital outcomes between groups (see van Oorschot and Finsveen 2009). Even if we endorse the society-centred approach, rather than the inequality of resources at the individual-level (perhaps more easily delineated from Bourdieu's theory of access to resources), there are still significant discrepancies in the ideas

of civic participation that presupposes the requisite tools to participate - one that ignores any potential structural inequalities. Such as class, education and employment that may act as a barrier to participation.

Part of this inadequacy derives from the lack of attention towards the equalising tendencies of the welfare state that the mainstream approach overlooked- opting instead for the appealing Tocquevillian prescription promoted by Putnam. The idea of variation in outcomes because of social structures was pivotal to Coleman's conceptualisation of social capital, which makes the admittance more surprising, considering his recognition within the field and rational choice applications. In acknowledging the social structure, the patterns of structural inequality are themselves a key area for exploration.

Drawing on Bourdieu's theory of social capital, we identify the role that existing economic and cultural inequalities play in the development of social capital. Specifically, how existing capital translates into social capital in a mutually reinforcing process. Here we acknowledge the welfare state's role in reducing structural inequalities and social capital inequalities. This forms the basis for our second research question that asks whether the welfare state does reduce social capital inequalities.

If we are to understand the role of the welfare state in affecting individual outcomes of social capital, it is vital that what we are measuring is both theoretically and empirically substantiated. This critical assessment has been surprisingly lacking in a large number of applications. The central importance of measurement to social capital exploration has demanded a dedicated chapter to the dependent variable. Here I provide the necessary theoretical and empirical work to support coherent and valid operationalisation of social capital for analysis. Chapter 4 focuses on establishing clearly defined measures that are both reliable and theoretically driven. Here, the confirmatory factor analysis (CFA) application within the structural equation modelling (SEM) framework enables the reliable construction of latent variables. Considering social capital is a latent variable construct, the fact that it has been inadequately addressed is somewhat of an omission within the literature. (Since writing, Ferragina (2017) has applied this method to address the social capital welfare state relationship; finding a mostly positive association of welfare state generosity and social capital will observing a negative association of welfare state size.).

The second analytical chapter (chapter 5) is primarily concerned with assessing the importance of welfare state generosity and universalism for an individual's social capital. This takes place within the context of the crowding-out debate, where I propose the distinction of calibration. In doing so, the aim is to move beyond simple dichotomies and provide a more considered understanding of the impact of the welfare state on social capital. Realising this aim requires a more comprehensive and robust measurement of both the dimensions of social capital and the welfare state itself. Measurement is, therefore, central to the contribution of this chapter and provides clarity to the crowding-out debate.

By fully recognising the complexity of measuring social capital and its dimensionality, I acknowledge the likely causal mechanisms of the welfare state that can simultaneously promote both positive and negative social capital outcomes. Attention to the conditions and circumstances is extended in the third analytical chapter, where the focus is on who has access to social capital and under what conditions this varies.

Drawing on the resources perspective, chapter 6 aims to understand how conflict over resources and existing inequalities may translate into further social capital inequalities and the likely mechanisms by which the welfare state may alter this relationship. In utilising a multilevel modelling framework, random slopes allow us to explore the between-group cross-national variation. Here we address each social capital dimension according to the socioeconomic factors of income, education, benefit recipients and the unemployed. In doing so, we provide insight into the role the welfare state generosity and universalism has on reducing social capital inequalities.

In the final analytical chapter (chapter 7), I aim to bring together the existing analysis towards a more reflected understanding of the relationship between the dimensions of social capital. Here, I explicitly acknowledge how the determinants of social trust locate within the society-centred and institutionalist approaches to social capital. The purpose of this is to build on the established idea of dimensionality while informing the likelihood of the necessary conditions for social capital development. Remaining within the SEM framework, I apply path analysis to test a theoretical model and explore the causal relationships between each of the social capital dimensions.

Together what these analytical chapters present is an attempt to understand the relationship between the systems of welfare provision at the macro-level and access to social capital at the

micro-level. Importantly, it does this from a position of considered measurement with construct validity at the centre of its analysis. Having formed a coherent theoretical and analytical approach, we can then expand on what this means for the individual in a time of austerity and the broader implications for social policy.

Chapter 8 revisits the literature, research question and hypotheses, within the context of the research aims. It provides a discussion on the key insights from the literature and the thesis contributions. Building on the findings of the previous empirical chapters, the final chapter considers directions for social policy and the welfare state that may be most conducive to the social capital environment. Appropriate consideration is also given to the study's limitations, highlighting potential areas of improvement before offering some thoughts on possible future research and concluding remarks.

2 Literature Review

The contribution of this thesis to the debate about social capital and the welfare state is to stress the importance and complexity of measurement and highlight the role of social capital inequality in outcomes. This debate has played out under the auspices of the 'crowding-out hypothesis', forming two opposing views within the literature. The communitarian position portrays the comprehensive welfare state as an impediment to social capital development, 'crowding-out' the networks of civic participation and trust (Nisbet 1962; Wolfe 1989; Etzioni 1995). For institutionalists, the comprehensive welfare state is a major determinant of social capital, 'crowding-in' through solidarity, trust and broader participation (Skocpol 1996; Rothstein 2001; van Oorschot and Arts 2005).

Part of this is political, often ideological, where the state is perceived either in direct competition with individual rights or enhancing an individual's autonomy (Kääriäinen and Lehtonen 2006). Part of this dispute relates to the conception and measurement of both social capital and the welfare state. There is no universally agreed-upon definition of social capital, whether it is an individual or collective property or what characterises adequate measurement and operationalisation. Equally, the debate over defining and measuring the welfare state to capture its generosity remains a 'dependent variable problem' (Clasen and Siegel 2007).

It is somewhat surprising that so much research proliferated without a critical basis for measurement. Such was the desire to unlock the potential of social capital; the political project [of social capital] superseded the theoretical and analytical work required for critical establishment. Indeed, statistical offices and supranational organisations quickly adopted social capital into their workings and policies. Social capital was seen as a core component of understanding the 'well-being of nations' (OECD 2001) and 'the missing link' in development outcomes (World Bank 1998). It is not until 2013 that the OECD asks what social capital is, with the paper 'an agenda for measurement' (OECD 2013). It is important to recognise that the establishment of concepts can take time. However, the research and application of social capital to all aspects of the social structure without a coherent theoretical and methodological framework often created confusion over outcomes (Portes 1998). This uncertainty is particularly true of its relationship to the welfare state, where the focus on aspects of social capital has perpetuated claims of the crowding-out thesis.

This chapter forms two main two parts. The first part of the chapter visits the social capital theory, paving the way to identify and measure a multidimensional construct. Focussing on the relationship between social capital and the welfare state, we address the theory and empirical evidence within the context of the crowding-out debate. I highlight the central importance of measurement to understanding this relationship and the need to move beyond dualistic interpretations of the welfare state. The second part of the review brings structure back into the social capital debate, acknowledging the importance of resources in identifying social capital outcomes. Here the focus is on social capital inequality, specifically how the welfare state may affect the process of social capital accumulation.

2.1 Social capital theory - Part one

Social capital broadly encapsulates those resources available to an individual through networks of social relations, which has both individual and collective aspects. By its very nature, social capital is a complex concept. Something that is intangible demands a certain amount of discussion and agreement on just what that something is. Perhaps the fuzziness of social capital is part of its attraction, one that allows multiple disciplines to engage with the concept while having the freedom to define it on their terms. As a result, there are a plethora of social capital definitions found within the literature (see Adler and Kwon 2002 for an overview; appendix A). These definitions vary depending on whether the focus is on the sources, the function, or the effects of social capital (Robison et al., 2002). In addition, they vary depending on whether the focus is on the relations maintained between individuals, the structure of ties within a collectivity, or both types of linkages (Adler and Kwon 2002). This diversity in the application relates to the three distinct schools of thought from which social capital was developed and is principally attributable. We discuss the theories of the three foremost exponents in turn before summarising their contribution.

2.2 Bourdieu

For Bourdieu (1986), social capital is a resource acquired through social networks. The volume of an individual's social capital is dependent on other forms of capital, or rather the ability to mobilise existing resources to generate social capital. Thus, the 'social' is placed within the context of other existing symbolic and material dimensions of valuable resources and powers (Bourdieu, 1979), stating that:

‘the volume of social capital an individual possesses depends on the size of the network of connections he can mobilise and the volume of capital (economic, cultural or symbolic) possessed in his own right’ (Bourdieu 1986:249).

Bourdieu stresses that the primacy of economic capital is at the ‘root of all other types of capital’ (1986: 252) but maintains other forms are not simply reducible to the economic; rather, they are 'inextricably linked' (Bourdieu, 1979) through transformations and concealment. Social capital is neither reducible nor exists independently because of the related exchanges within the network of connections that also act as a multiplier with the other forms possessed. Thus, it is within the interrelations of networks and resources that we begin to understand social capital as an entity.

The logic of functioning capital can be understood from the conversions of one type to another (Bourdieu 1986: 252). Transforming economic capital into social capital requires the specific endeavour of investing time and energy into social relations, which in terms of social exchanges, are a good investment that will provide returns later on (Bourdieu 1986). The maintenance and accrual of social capital require skills and knowledge to ensure a profitable outcome and create lasting connections. Likewise, the transformation of economic capital into cultural capital requires the expenditure of time. Indeed it is only through having the economic capital that provides the opportunity (available time) to generate cultural capital.

This process of capital accumulation, where one form leads to an increase in another form, creates the potential for inequality in obtaining social capital, as it is inherently linked to an individuals' economic position. Indeed Bourdieu's position on social capital is based on an understanding of social hierarchy, where combined forms of capital led to the creation and reproduction of inequality. Social capital, in terms of social assets, is the product of accumulated labour where the profits gained from membership are made possible on the basis of solidarity (Bourdieu, 1986). Accumulation is not necessarily pursued consciously but is derived from the networks of connections, which themselves are not a given, but are the 'product of endless effort at institution … that produce and reproduce lasting, useful relationships that can secure material or symbolic profits' (Bourdieu, 1986:249).

The density and durability of relationship ties are central to Bourdieu's social capital, where: 'the aggregate of the actual or potential resources are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition

(Bourdieu, 1986:248). While group membership to the family or association is essential for the acquisition of social capital, it is the sum of resources accrued through social exchanges within networks that are significant (Bourdieu 1986).

Bourdieu's strong emphasis on privilege as the basis for social capital offers little in the way of how those less fortunate individuals could accumulate and utilise such a resource. It does, however, provide us with a position from which we can explore social capital, namely, differentiating between the levels of available resources between individuals. After all, if there is an unequal distribution of social capital between individuals in society, then access to social capital is to some extent contingent upon social policies.

2.3 Coleman

James Coleman has been particularly influential in the study of education (Field, 2003) and developed his social capital theory in response to his findings on adolescent educational attainment. His longitudinal study of US high school sophomores showed a significant difference between the drop-out rates of Catholic and state schools, the former being considerably lower. This disparity between the levels of attainment, according to Coleman, was a result of the lack of social capital (Coleman, 1988). Coleman aimed to import the economists' principle of rational action into the analysis of social systems (Coleman, 1988:97), where rational choice theory interprets social interaction as a form of exchange. Social capital is defined as:

'A particular kind of resource available to an actor', comprising a 'variety of entities with two elements: they all consist of some aspects of social structures, and they facilitate certain actions of actors' (Coleman, 1988:98).

For Coleman, social capital is both an individual and collective property; aspects of the social structure can be used to achieve individual interests and common goals. In practice, this could involve accessing information that would be unattainable or too costly to obtain without the social relationship, or by individuals coming together to improve neighbourhood conditions that alone would not be possible. Social capital provides a way of understanding how combined resources can produce different behaviours and outcomes (Coleman, 1988). It is this interaction of the individual within the collective social structure, understood as a property of networks, that produces an outcome – social capital.

Unlike other forms of capital, social capital inheres in the structure of relations, which depends on two elements; ‘the level of trustworthiness of the social environment [and] the actual extent of obligations held’ (Coleman, 1988:102).

Contextually, if I were to help a friend or neighbour (and trusting that person), I would expect them to reciprocate the favour at a future date and that they would be obligated to do so. This interaction of expectations and obligations can be conceived as a credit slip. An individual can generate and hold many slips for a number of persons, which by direct analogy is financial capital. In social structures, outstanding credit slips can be held on both sides of a relation, creating a body of credit. Because these slips appear not entirely fungible, they do not cancel each other out, which, provided the trust is not eroded, maintains the body of social capital (Coleman 1998:102). As differences in the social structure shape both trust and obligations (Coleman 1988), it is possible to understand how welfare states can create situations favourably or indeed detrimental to the development of social capital. This acknowledgement of the social structure and how it influences social capital is a key contribution from Coleman. Particularly within the context of our aim to understand the welfare states' influence on individual and social circumstances.

2.4 Putnam

The most renowned proponent of social capital is Robert Putnam, who is mainly attributable to the popularisation and entry of the concept into mainstream political discourse (Baron et al., 2000). His macro-sociological approach places civic associations at the centre of social capital discourse. In the formative study 'Making Democracy Work', Putnam (1993) looked to explain the differences in effectiveness between the regional administrations of North and South Italy through the lens of social capital. According to Putnam, the cause of the North's superior performance compared to the ineffective south, where civic engagement is weak, resides in the 'associations of civil life'. Following Tocqueville's (1835) writings on American democracy, observing peoples' civic engagement, associational participation and interest in public affairs provided the framework for explaining these apparent disparities.

Social capital thus became defined as those ‘features of social organisation, such as; trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions’ (Putnam, 1993:167).

Putnam subsequently turned his attention to the perceived decline of American civil society, which he characterised as ‘bowling alone’ (Putnam, 1995; 2000). Here the emphasis is on the positive externalities of communities. Rather than individuals being the sole recipients of their network investment strategies, network interactions have spill-over effects. Putnam's example is how neighbours keeping an eye on one another's houses can reduce the local crime rate, which benefits all individuals regardless of whether every individual participates. Social capital is, thus, simultaneously a 'private good' and a 'public good' (Putnam 2000:17). From the networks of community, we find the norms of reciprocity to facilitate social capital - the idea that I do something for you with the expectation that you or someone else will do something for me in the future. It is this idea of generalised reciprocity that is deemed essential for efficient and productive societies.

Following Coleman, Putnam employs the similar analogies of physical and human capital where tools and training enhance individual productivity; ‘social capital refers to the productive benefit of connections between individuals - social networks, the norms of reciprocity and trustworthiness that arise from them’ (Putnam, 2000:18-19).

Putnam stresses the importance of the decline in social capital by relating it to a broad number of indicators, such as health, well-being, education, economic prosperity and democratic engagement. Putnam is clear of the positive correlations of social capital, which 'makes us smarter, healthier, safer, richer, and better able to govern a just and stable democracy' (Putnam, 2000:290). Indeed, such is his faith in associations; he explains that joining an association or group cuts your chances of dying in half. Naturally, such claims have attracted a great deal of attention from critics and optimists wishing to harness social capitals potential.

Some are critical of Putnam's theory for conflating ends and means. As Portes (1998:19) points out, there is an apparent circularity in the argument, where social capital is simultaneously a cause, and an effect that leads to positive outcomes and its existence is inferred from the same outcomes. Cities that are productive and governed well do so because they have high levels of social capital, those that underperform are uncivic and have low social capital. Also, his focus on civic, political associations as ‘civic culture’ does not take account of other important social situations and settings that enable the development of social capital, such as universities and cyberspace (Misztal 2000:121). Like Coleman, Putnam has been criticised from a functionalist perspective failing to address power and inequality. The overemphasis on the role of the community downplays the state's role, which Leonard (2004:941) finds to be crucial in

facilitating or inhibiting the emergence of social capital. That said, his definition provided a straightforward way to identify aspects of social capital that could be readily measured and compared.

2.5 Understanding social capital perspectives

What these three perspectives have in common is an understanding of networks and relationships as a resource derived through group membership. For Bourdieu, social capital is an asset used by the elite alongside other forms of capital who mobilise resources to get ahead. Coleman too places emphasis on social relationships providing resources for individuals- social capital allows the achievement of certain ends that would not be attainable (1990:302). Although there is the suggestion, it has resonance for the underprivileged. Both see it as a resource accessed by families and individuals (Field, 2003; Foley and Edwards, 1999). Putnam also acknowledges how social connections affect an individual's life chances, potentially mitigating socio-economic disadvantage (2000:319). He maintains it has a function at the societal level- emphasising the norms of reciprocity and trust that sustain our cooperative behaviour. The generalised reciprocity and trustworthiness are also central to Coleman's understanding of social capital's emergence- derived from the relationships of exchange through mutual expectations.

Bourdieu's position resides at the individual level, where the focus is on individual resources accrued from the group or network. While group membership in the family or association is essential for the acquisition of social capital, the sum of resources accrued from the social exchanges within the networks is significant (Bourdieu 1986). From this position, we can measure social capital by differentiating the level of available individual resources. Here resources are derived from the privileged position of access to the group or network, which is particularly relevant to understanding social capital variation and the broader context in which this happens.

Coleman likewise approaches social capital from an individual level, focusing on the available resources to individuals. However, there is also a collective element to his understanding of the possible variations created by social structures. His contribution does bring to our attention the potential role of the state in shaping the social structures for social capital to develop and the opportunity for everyone to accrue social capital resources, which is central to our research

questions. The attention to network resources is somewhat overshadowed in mainstream operationalisation and macro [Putnam] approaches.

For Putnam, civil society relates directly to the level of social capital reflected in civic associations. His measurement basis consisted of a single social capital index comprising of 14 indicators under five dimensions, related to organisational life, engagement in public affairs, community volunteerism, informal sociability and social trust (Putnam 2000:291). Aside from the criticisms faced with Putnam's analysis and his inductive approach (see Portes 1998), perhaps the most prominent issue lies with the composition of multiple facets that lead to varying social capital outcomes. Individual and collective characteristics are often discussed interchangeably when, in fact, they measure separate aspects. This has led some scholars to specify the need for a distinction between the collective and individual forms.

2.6 Bridging the individual and Collective Divide

From the literature, we understand that social capital consists of the resources an actor can mobilise from their embeddedness in the network of social relations, which has both individual and collective properties. The relational nature of social capital (derived from group relations) is conceived independently from the sum of relations; (Meulemann 2008:8), where an actor invests and mobilises resources through direct or indirect personal relations (Esser 2008). At the individual level, relations come together in a common shared goal through networks and civic associations, which creates the system capital (Meulemann 2008). The collective system highlights the trust of a network. It is not something possessed by an individual actor per se but has benefits to the individual regardless of whether they have invested in the network (Esser 2008). Although both types of capital are interlinked due to the nature of social relations within a structure, the distinction helps us to realise the specific nature of social capital.

Figure 2.1: Individual and collective social capital

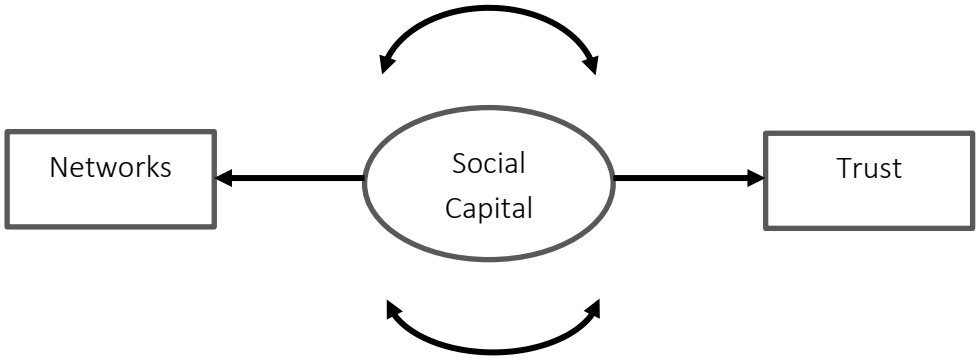


Figure 2.1 represents the association between the individual and collective elements. Here social capital can be understood to comprise of resources derived from the networks of relations and the trust that resides within them. The important thing here is maintaining the idea of social capital as a resource. A criticism of the macro-sociological approach is that by defining it by its function, it becomes anything and everything (Portes 1998). Without maintaining the relevance to the individual, we are unable to assess the significance of the social structure to which social capital may vary. If social capital is an important concept, as professed, then what this means for the individual and how their access to the resource is affected is the fundamental question. It is here where I consider the welfare state an essential mechanism in influencing the outcome of individuals' social capital.

2.7 Welfare State and Social Capital

There are two clear opposing positions relating to the nature of the relationship between social capital and the welfare state. The society-centred approach views the universal welfare state as a hindrance to social capital accumulation. It is argued that welfare systems replace informal social caring relations, along with the systems of self-help and norms of reciprocity. In doing so, it crowds out the networks of civic engagement that are essential for social and economic well-being, hindering participation and creating distrust in institutions (Janowitz 1976; Etzioni 1995; Fukuyama 2000; Putnam 2001). In response to the 'crowding-out' thesis, the institutionalist position argues that the comprehensiveness of welfare provision is a significant determinant of social capital (Van Oorschot and Finsveen 2010). Universalism creates a national context based on solidarity and support, promoting wider participation (Kunemund and Rein 1999; Rothstein 2001; Van Oorschot and Arts 2005) where the symbolic sense of community engenders feelings of belonging, trust and security (Kääriäinen and Lehtonen 2006).

2.8 Crowding-out theory

The discussion surrounding the relationship between the welfare state and social capital resides within the crowding-out debate. Within this context, the expected relationship between the state and civil society is one based on 'substitution and complementarity' (Dahlberg 2005). We begin by addressing the theory before reviewing the evidence within the empirical literature.

2.8.1 Substitution

Where the state is considered to be in competition with [freedoms of] the market, the assumption is that the welfare state will also have a detrimental effect on the function of civil society (Fukuyama 2000; Karlson 2004). Where there is a public provision of a service, there will be no need for a voluntary alternative. This notion of the welfare state crowding-out voluntary civil society centres on substitution theory. There is an implication of an inverse relationship between statutory and voluntary services, where one service increases, the other decreases, and vice versa (Dahlberg 2005:745). This idea of a zero-sum game suggests a finite number of resources for a finite number of tasks that one provider can only undertake; it is just a matter of who will do them (Finsveen and van Oorschot, 2007). With the portrayal of the generous welfare state as taking over civil society, 'crowding-out' community and voluntary associations, there is a weakening in the moral networks of civil society (Lee 2000).

2.8.2 Complementarity

Complementarity theory suggests that tasks relating to the specific characteristics of the group or organisation make them the most appropriate to carry out specific functions (Dahlberg 2005). Statutory organisations are most suited to uniform tasks that benefit from the division of labour, as are tasks that require specialised skills delivered at specific times (Litwak 1985). Health care, education and formal care are obvious examples of such provisions. Voluntary organisations, on the other hand, have more altruistic motives and are limited in terms of available time. Volunteers cannot necessarily guarantee a continued service provision and require flexibility to fit in with personal time constraints (Litwak 1985). Rather than substituting one service with another, different actors provide different functions in a complementary manner. Therefore, comprehensive welfare states do not replace existing services but allow individuals to participate in other areas (Dahlberg 2005).

Far from substituting civil society, the welfare state is an essential determinant in creating the environment for participation to take place (van Ingen and van der Meer 2011). The universal system increases individuals' rights and possibilities to engage in civil society (Kääriäinen and Lehtonen 2006), actively encouraging participation in voluntary organisations (Pichler and Wallace 2007; Kuhnle and Alestalo 2000). In this situation, the relationship between the welfare state and civil society is one of expansion (Evers and Laville 2004; Rothstein 2001).

Rather than in opposition to the state, civic organisations are part of the broader democratic structure (Trägårdh 2007:31).

2.9 Social capital and welfare state crowding-out empirical literature

This section explores the empirical evidence from different studies that examine the relationship between social capital and the welfare state and its implication for the crowding-out debate.

Scheepers et al. (2002) find support for the crowding-out of social capital. Using the Eurobarometer 1992 survey (aged 60 and over), they observe the tendency for the socio-democratic regimes to have lower levels of social capital compared to other regimes types. They only focus on one dimension of social capital, operationalising it through two measures-frequency of contact with family and friends. Following Lin's (1999) individual-level theory of social capital and achievement, Koster and Bruggeman (2008), from their empirical analyses of the ESS 2002/3, find evidence of a crowding-out effect. Welfare states (social expenditure as a percentage of GDP) decrease the value of social capital in terms of status attainment (occupational prestige), as measured through informal networks (how often they socially meet with friends, relatives or colleagues). Gelissen et al. (2012), on the other hand, analysing data from the Eurobarometer 2004, find a positive relationship between welfare spending (social expenditure as a percentage of GDP) and social capital (access to informal help from network members outside the family in eight situations). Stadelmann-Steffen (2011), using the European and World Values Surveys (1999-2001), find overall support for the crowding-out thesis, with social volunteering, reported being lower in countries with higher social expenditures (social expenditure as a percentage of GDP).

Distinguishing between bonding, bridging and generalised trust, Kääriäinen and Lehtonen (2006), using the ISSP 2001, find mixed support for the crowding-out hypothesis. Socio-democratic welfare regimes showed greater bridging social capital (participation in voluntary activities) and trust but the least bonding social capital (frequency of contact with family and friends). Likewise, van Oorschot and Arts (2005), using the EVS survey 1999/2000, find evidence of crowding-out in terms of social networks (contact with friends) and interpersonal trust. Individuals have lower levels of interpersonal trust in countries where the welfare state effort (social expenditure as a percentage of GDP) is higher and report less contact with friends

in Scandinavian welfare states. Where they do observe crowding-in with social spending is with peoples trust in institutions and membership in voluntary associations. In contrast, Gesthuizen et al. (2008) find no effect of social security (social expenditure as a percentage of GDP) on informal networks (frequency of contact and informal social support). However, they do observe the crowding-out of participation in voluntary associations (active participation in organisations).

2.10 Crowding-in or crowding-out?

As illustrated in this summary of the empirical literature, the contested nature of the social capital welfare state relationship is not easily solved. We observe conflicting evidence for crowding-in and crowding-out across the dimensions of social capital. As previously suggested, this may relate to the various operationalisation of both the independent and dependent variables. Simultaneously it is possible to observe the positive and negative effects of the welfare state as welfare regimes or social spending. This situation becomes more problematic with the selectivity of the dimension of social capital used for analysis.

What we learn from this is that it may not be a simple case of crowding-in or out but rather a process of calibration in which in some domains the welfare state crowds-out, but in others, it crowds-in. As Kumlin and Rothstein (2005:342) suggest, 'welfare-state institutions have the capacity for both making and breaking social capital'. Given that there is a clear division both in terms of measurement and outcomes, the need to account for the multidimensionality and draw out the idea of calibration provides a crucial step in understanding the nuance of the relationship beyond the crowding-out dualism. If, on the one hand, informal networks are crowded-out, the same does not automatically apply to formal networks. There could be a crowding-in effect of participation and trust generated through generous and universal support. Here lies the problem with the crowding-out debate. Broad explanations of the impacts of welfare provision on civil society are discussed in narrow terms. In doing so, it obscures the variation that might be present not only between social capital dimensions but also between SEGs—as such, addressing measurement and dimensionality is centrally relevant to this debate.

Table 2.1: Summary of the empirical literature, the welfare state and social networks

Study	Social capital	Construction	Welfare state measure	Relationship
Scheepers et al. (2002)	Frequency of contact with family	Ordinal scale	Welfare regimes	Liberal regimes (+) Socio-democratic regimes (-)
			GDP spent on social security benefits or pension provisions	Greater welfare effort (-)
	Frequency of contact friends		Welfare regimes	Conservative-corporatist not sig different from social-democratic, but the liberal regime has more
van Oorschot and Arts (2005)	Contact with friends	Sum scale	Welfare regimes & Social spending % GDP	Lowest in Scandinavian welfare states (-)
	Importance of family		Social spending % GDP	Greater welfare effort (+)
	Number of voluntary organisations		Social spending % GDP	Greater welfare effort (+)
Kääriäinen & Lehtonen (2006)	Frequency of contact with family and friends	An ordinal scale sum score	Welfare regimes	Socio-democratic regime (-) compared to other regimes
Gesthuizen et al. (2008)	Contact with family and friends	Counts	Social spending % GDP	No effect
	Number of voluntary organisations		Social spending % GDP	Greater welfare effort (-)
Koster and Bruggeman (2008)	Socially meet with friends, relatives or colleagues	Likert scale	Social spending % GDP	Greater welfare effort (-)
van der Meer et al. (2009)	Contact with family, friends and extended family	Sum score	Social security and health care expenditure % GDP	Greater welfare effort (-) on extended family only
Stadelmann-Steffen (2011)	Voluntary engagement	Counts	Social spending % GDP	Greater welfare effort (-)

Table 2.2: Summary of the empirical literature, welfare state and trust

Study	Social capital	Construction	Welfare state measure	Relationship
van Oorschot and Arts (2005)	Interpersonal trust	Sum scale	Social spending % GDP	Greater welfare effort (-)
			Welfare regimes	Socio-democratic regime (+) compared to other regimes.
	Institutional trust		Social spending % GDP	Greater welfare effort (+)
	Social norms			
Kääriäinen & Lehtonen (2006)	Interpersonal trust	Sum score	Welfare regimes	Socio-democratic regime (+) compared to other regimes
Larsen (2007)	Social trust	Binary	Welfare regimes	Socio-democratic (+) regimes compared to Anglo-Saxon regimes.

2.11 Measuring social capital

Measurement and operationalisation are critical factors in understanding the relationship between social capital and the welfare state. Within the literature, social capital is measured through different aspects in multiple ways (Table 2.3). When operationalisation is factored in, there is a greater potential for conflicting outcomes. Part of this relates to the limitations of the data sets themselves in providing the appropriate questions to address the multiple facets of social capital. A broader issue is the lack of critical reflection on the measurement of indicators themselves. Proxies such as frequency of contact are taken as a priory for social capital measurement, often without due consideration to its appropriateness. Scores and scales are created without always being clear on the construct validity of the indicators. When there is a statistical assessment, there is often a lack of sufficient detail provided to the reader. To illustrate this point, of those studies listed below, two acknowledge the validity of the scales employed, and two specifically employ factor analytical techniques to create distinct indicators. Therefore, greater critical reflection surrounding what the indicators measure and their construction is required. With this in mind, chapter four is dedicated to providing a critical assessment of the dependent variable. I address the issue of measurement in detail in chapter four.

In summary, to have a clearer picture of crowding-out and understand the effect of the welfare state on social capital, we need to have a clear idea about the mechanisms for the causal relationship as well as a greater understanding of how this directly relates to the operationalisation of both social capital and the welfare state. The first analytical chapter deals explicitly with the measurement and construct validity of social capital, which goes some way to begin addressing these concerns. In the next section, I provide a conceptual framework for addressing the dimensionality of social capital, as well as identifying an alternative approach for measuring the welfare state.

Table 2.3: The different accounts of social capital

Dimensions	Studies
Informal networks	Gelissen et al., 2012; Koster and Bruggeman 2008; Scheepers et al., 2002
Formal and informal networks	Gesthuizen 2008
formal networks and trust	Adam 2008; Paxton 1999
Social trust	Rostila 2007; Larsen 2007
Institutional and interpersonal trust	Kumlin and Rothstein 2005
Social networks, trust, and social norms	Oorschot and Arts 2005; Oorschot and Finsveen 2009
Formal and informal networks and trust	Oorschot et al., 2005
Networks, trust and civism	Oorschot et al., 2006
Informal and formal networks, informal social support and	Kääriäinen and Lehtonen 2006
Formal networks, informal networks, generalised trust, norms	Kaasa and Parts 2008; Ferragina 2017
Informal network, formal networks and trust	Kroll 2010
Interpersonal trust, Institutional trust, social activism and formal engagement	Halman and Luijkx 2006

2.12 The dimensionality of social capital

To address the social capital welfare state relationship, we must explicitly account for its dimensionality. Social capital is a multidimensional phenomenon and must be conceptualised as such (Eastis 1998; Narayan and Cassidy 2001; Grootaert et al. 2003). In order to import some clarity to the conceptualisation of social capital, some authors have specified the need to distinguish between the structural dimension of networks and the cognitive or relational dimension of trust (Nahapiet and Ghoshal 1998; Dasgupta 2000; Kaasa and Parts 2008). Acknowledging the multidimensional phenomenon of social capital (Eastis 1998; Narayan and Cassidy 2001; Grootaert et al., 2003) avoids the pitfalls of single composite indicators (e.g., Putnam 2000) and enables a comprehensive assessment of its relationship to the welfare state. To do this, we identify the aspects of each social capital dimension situated within social capital.

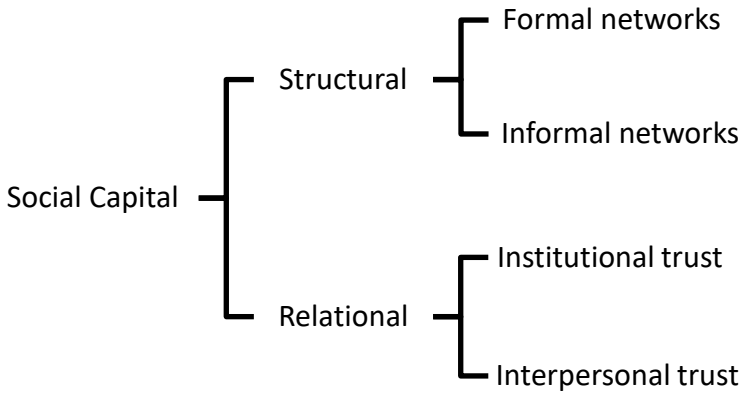


Figure 2.2: Dimensions of social capital

2.12.1 Networks

Within the literature, there is a distinction made between the types of networks where social capital resides. Informal networks are those made up of the close ties between families and friends, whilst formal networks include membership to groups and associations (e.g., Putnam 2000; van Oorschot et al., 2006; Kääriäinen & Lehtonen 2006; Halman and Luijkx 2006; Kaasa

and Parts 2008; Gelissen et al., 2012). The distinction between ‘strong’ and ‘weak’ ties (Granovetter, 1973) is commonly referred to as ‘bonding’ and ‘bridging’ social capital (Woolcock, 1998; Putnam 2000). 'Bonding' (informal) is the strong homogenous ties of friends and family that are sources of help and support considered important for 'getting by in life' (Healy, 2003). 'Bridging' (formal) connects different types of people and groups derived from the weak ties of associations (Healy, 2003), providing links to colleagues (Woolcock, 2001), generating external assets and broadening identities (Putnam, 2000:23).

Generating networks in the formal sphere through associational membership is at the heart of the society centred approach to social capital. Civic participation and social capital are considered synonymous, with voluntary associations acting as the schools of democracy for socialising cooperative values, norms and trust (Putnam 1993, 2000). Voluntary associations have an internal effect at the individual level that creates habits of cooperation, solidarity and public-spiritedness and has an external effect providing links between members and political institutions (Putnam 1993:90). However, there have been questions raised with this approach that places voluntary associations at the centre of social trust and civil society. It is also reasonable to consider participation as a self-selecting process based on existing levels of trust held, rather than the process of generating it (Stolle 1998; van der Meer 2003; Wollebaek and Selle 2003). Indeed, there is little evidence for associations producing the stated generalised attitudes and trust (Stolle 2003). The specified norms and socialising effects derived from associations may be more directed towards the domains of the family, which has a significant impact on trust levels (Stolle 2003; Newton 1997), as does the state (Levi 1996; Szreter 2002).

Rather than associational membership being the key to social capital at the society level, it can equally be conceived at the individual level, as the potential resources derived from networks, group membership (Bourdieu 1986) and access to wider network structures (Li et al., 2005). At the Individual level, informal social connectedness and formal civic engagement (Halman & Luijkx 2006) enable the mobilisation of social contacts from which an individual can benefit (van Schaik 2002:7). It is maintaining this idea as an individual resource that allows an

assessment of the variation on both the levels and determinants of social capital- relative to the individual.

2.12.2 Trust

We find the centrality of trust to social capital throughout the literature (Coleman 1988; Putnam 1993; Rothstein and Stolle 2008; Freitag and Bühlmann 2009). Trust is a necessary condition for the creation of networks (Newton 1999), enables social relationships to emerge (Fukuyama 2000), facilitates collective action (Putnam 2000) and is essential for the functioning of social systems (Luhmann 1979). It is the resource that links citizens together, allowing them to pursue common goals (Arrow 1971; Hooghe and Stolle 2003) - vital for the smooth functioning of society and an essential resource for individuals (Hyggen 2006:495). 'Trust indicates the readiness of an actor to enter into communication and cooperation with unknown people' – the generalised other (Adam 2008:163). Given the importance of trust, understanding how to generate it has received considerable attention - of which cultural and experiential perspectives have been noteworthy (Sønderskov and Dinesen 2016).

From the cultural perspective, trust is stable over time, something largely inherited through parental socialisation (Uslaner 2002). Although trust remains stable over the life course (Uslaner 2002; Stolle and Hooghe 2004; Bekkers 2007, 2012; Sønderskov and Dinesen 2014), such a deterministic approach leaves little room for the social environment, where individuals are predetermined into a world of optimistic trust or pessimistic mistrust. The experiential account understands trust as developing throughout life - based on experiences - something that is malleable and affected by the social environment (Glanville and Paxton 2007). This is where a significant amount of social capital research is dedicated.

For Putnam (1993; 2000), it is the vibrancy of civil society where we recognise the networks of civic participation that produce high levels of trust. Positive experiences through associations create the 'spill-over effects' influencing attitudes and values, generating social trust (van Ingen and Bekkers 2012). However, it is also possible that trust is a precondition of engaging in networks (Misztal 1996), with those who are more trusting joining associations (Stolle 1998). There is evidence of a self-selecting process between those who have higher levels of trust and

participation, suggesting the role of associations as the producers of generalised trust may be overstated (Stolle 2003; van der Meer 2003; Wollebaek and Selle 2003; Li et al. 2005; Rothstein and Uslaner 2005; Neilson and Paxton, 2010). Rather, trust is the type of social capital that allows us to establish and maintain relationships with strangers (Torcha and Valenzuela 2011:191). The exact direction of influence between trust and civic involvement, Putnam (2000:145) himself stated, is as 'tangled as well-tossed spaghetti', such is the mutually reinforcing nature of trust and participation.

Given the somewhat conflicting evidence of the society-centred approach, other scholars have directed the experiential accounts to institutions. Here the perceptions of fairness and effectiveness of state institutions form the basis for trusting others (Rothstein and Stolle 2008; Freitag and Bühlmann 2009; You 2012; Nannestad et al., 2014; Sønderskov and Dinesen 2014) and participation (van der Meer et al., 2009), as they provide the necessary structure for cooperation (North 1990) where social participation takes place. The 'trustworthiness of the social environment' is central to Coleman's (1988:102) understanding of social capital. Here, we recognise the role of institutions in generating the conditions and climate [of trust] necessary for the development and emergence of social capital (Levi 1996; Kumlin and Rothstein 2005; Larsen 2007). The evaluation of public services and trust in the performance of institutions provides a basis for social solidarity (Huysseune 2003) and collective activity, Letki (2006) with redistributive policies increasing trust (Uslaner 2004).

Although Bourdieu does not explicitly identify trust in his theory of social capital, there are similar parallels to the social capital literature and the role of recognition (Siisiainen 2003; Frederiksen 2014). Here 'the reproduction of social capital presupposes an unceasing effort of sociability, a continuous series of exchanges in which recognition is endlessly affirmed and reaffirmed' (Bourdieu 1986:250). This notion of endless affirmation and reaffirmation is what we might understand as the relational nature of trust. From a Bourdieusian perspective, Frederiksen (2014:175) argues that trust is a disposition, where the 'propensity to trust in a given situation generated between habitus and familiarity on one side and the nature of the situation on the other'. That is, trust can vary between individuals but also in different

situations. Here trust emerges through the familiarity of the situation and past experiences but can also arise in unfamiliar situations guided by formal institutions, as in the case of institutional trust.

We understand from this that trust is a 'relational phenomenon created in the interaction between individuals and institutions, within social relations' (Frederikson 2014: 169). Where there is trust in each other and trust in institutions, social capital can develop. Thus, there is a need to comprehend the dimensionality of trust, where social (interpersonal) trust relates to the trust between individuals - necessary for associational membership (Sønderskov 2010); while institutional trust identifies the trust in the governmental political institutions that frame the environment of trust Nannestad et al., 2014; Sønderskov and Dinesen 2014). Accordingly, within the literature, we observe the distinction between interpersonal trust and institutional trust (e.g., van Oorschot and Arts 2005; Kääriäinen & Lehtonen 2006; Halman and Luijkx 2006; Kaasa and Parts 2008).

2.12.3 Social Norms

Alongside the dimensions of networks and trust, social norms are often included within the dimensional account of social capital (e.g., van Oorschot and Arts 2005; Kääriäinen & Lehtonen 2006; Halman and Luijkx 2006; Kaasa and Parts 2008; Ferragina 2017). This inclusion is attributable primarily to the application of Putnam's definition of social capital that specifies the areas in which social capital resides (networks, norms, and trust). Social norms do not measure people's social relations or trust (van Oorschot and Arts 2005; Ferragina 2017) but are a behavioural characteristic that reflects the general civic commitment and morality at the society level (Putnam 2000). When social capital moves from resources to explained behaviours as a social function, it is perhaps where social capital is most contested.

A problem with functionalist accounts of social capital (Coleman 1988; Putnam 2000) is that the presence of norms does not justify inferring they exist to achieve some social function (Bicchieri et al., 2018). Moreover, norms themselves can be destructive and exclusionary to outsiders (Portes 1998). Conformity to the group can restrict individual freedom and autonomy (Johnston and Percy-Smith 2003). Banfield's (1958) study on 'amoral familism' is a classic

example of how shared norms can be detrimental to the wider group or community. Both Putnam's macro-sociological and Coleman's rational choice position seeks to explain collective action through social norms. However, behaviours embedded within social relations are often context-specific and are not easily generalisable to society (Bicchieri et al., 2018). Presumably, producing the 'right' norm will enable the generation of social capital, and if it is the 'wrong' norm, it will not. Elster's (1989) conclusion on social norms and rational action sums this observation up remarkably well. 'Social norms spring from psychological propensities and dispositions that, taken separately, cannot be presumed to be useful, yet happen to interact in such a way that useful effects are produced' (1989:112).

The desire to widen social capital to the explanations of the social structure may be helpful for economic and functionalist explanations of social behaviour but does not help with the conceptual clarity of social capital as a resource. This study will adopt a more parsimonious account of social capital that focuses on the potential resources derived through social relationships. Networks are the structural dimension in which the individual or group mobilise resources, and trust is the relational dimension that enables the successful practices of the network and cooperation. Both dimensions are interlinked and mutually reinforcing, highlighting the nature of social relations within a structure.

2.12.4 Summary of dimensionality

The two principal elements of social capital are social networks and trust. Theoretically, Bourdieu draws our attention to the resources available within networks of social relations, available to both the group and the individual. At the same time, Coleman's position also highlights the 'trustworthiness of the social environment', where social capital is both an individual and collective resource. As the brief preceding discussion illustrated, in reality, all aspects of social capital are likely to be interrelated – found in the interactions of social relations (between individuals and institutions). The specified conceptual framework allows us to investigate social capital through separate analytical dimensions and unpack the relationship to the welfare state. I will explore how these dimensions relate to one another and the possible

causal mechanisms of influence in detail in the third analytical chapter (seven). Now we move on to the discussion of the welfare state.

2.13 Welfare state

What countries spend on their social policies in terms of the welfare effort is naturally of interest to understanding potential variation in individual outcomes. How this is measured and, indeed, what is understood by the nature of the welfare state itself, presents a dependent variable problem (Clasen and Siegel 2007). Within the context of social capital and the welfare state, there have been two main strategies for analysing potential welfare state effects; i) expenditures data and ii) welfare regime classifications. Typically, social expenditure as a proportion of GDP is used to reflect countries' commitment to individual welfare (e.g., Oorschot and Finsveen 2010; Oorschot and Arts 2005; Scheepers et al., 2002). The social expenditure approach often becomes subject to the reductive ideological debate on the very nature of welfare itself. Communitarians highlight welfare dependency issues with the state in competition with individual rights and self-sufficiency (Nisbet 1962; Wolfe 1989; Etzioni 1995), whilst institutionalists embrace the state as enhancing individual rights and autonomy (Esping-Andersen 1990; Skocpol 1996; Rothstein 2001). The concern with the size of the welfare state has been the central position for arguments regarding the dualism of the crowding-out thesis. As a result, whether high levels of social security have a detrimental impact on an individual's social capital has been consistently operationalised through social spending as a proportion of GDP (e.g., Oorschot and Finsveen 2010; Oorschot, Arts and Gelissen 2006; Koster and Bruggeman 2008; van der Meer 2009].

Despite its widespread availability for comparative analysis, social expenditure does not adequately reflect the welfare state's effects on individual life chances (Scruggs and Allen 2006) coverage and distribution. It fails to address the inherent problem that higher spending at the macro-level may not necessarily reflect the real generosity of welfare states at the micro-level (Tamilina 2010). For example, it is not accounting for the size of the dependent population in times of economic downturn or understanding how the ageing population can generate a misleading picture. Esping-Andersen (1990) illustrates a clear example of rising social

expenditures because of high unemployment levels under Thatcher in the 1980s, at the same time as dramatic cuts in the replacement rates. Clearly, the social policy context of social expenditure and generosity can produce widely different outcomes for individuals. Indeed Esping-Andersen (1990:19) argues that spending is secondary to the theoretical substance of welfare states themselves. As such, it understands that the welfare state's influence should address both qualitative and quantitative dimensions that reflect wider welfare distribution (Hagfors and Kajanoja 2007; Pacek and Radcliff 2008).

In an attempt to understand the qualitative elements of the welfare state that addresses the structured relationship between the state, market and family, welfare regime approaches highlight the commonality of decommodification and stratification experiences (Esping-Andersen 1990). The institutional position aims to move beyond simple measures of social expenditure, instead opting for a more theoretical categorisation of 'ideal regime types'. Most notably, through the work of Esping-Andersen, welfare states can be classified according to patterns of historical institutional development. Accounting for the overall design of social policies adds a great deal to our understanding of the theoretical substance of welfare states and has been a valuable tool for operationalisation within the social capital literature (e.g., Scheepers et al., 2002; Oorschot et al., 2005; 2006; Kääriäinen and Lehtonen 2006). Beyond the general concerns surrounding the number of regime types, or whether it is possible to place certain countries in multiple regime types (see Arts and Gelissen 2002 review). The real problem with combining various countries under a single regime is that it obscures the variation within and between countries that we hope to explore in this thesis. From a methodological point of view, this also allows us to use our degrees of freedom to add additional controls to our models.

In order to overcome these limitations and add to the existing literature, this study will focus on two specific measures of the welfare state - generosity and universalism - that relates to the central tenants of decommodification and stratification within Esping-Andersen's (1990)

welfare state classification. An assessment of social capital beyond expenditure and regimes types has been until now overlooked[1].

2.13.1 Research question

Based on the existing literature and empirical evidence, the first research question seeks to address whether the welfare state's level of universalism and generosity is an important determinant of social capital. This is framed within the context of the crowding-out debate. Here we are interested in whether the claims of crowding-in and crowding-out hold across all dimensions of social capital. Identification of the specific hypotheses to test the influence of the welfare state (macro-level) on individuals' social capital (micro-level) takes place in the subsequent analytical chapter (five).

So far, the literature has set out the need for assessing the dimensionality of social capital and sufficient welfare state measures to adequately address the relationship between the welfare state and social capital. There is also a need to address a further omission within the literature and crowding-out thesis - the differences in an individual's ability to generate social capital within welfare states.

[1] Generosity has recently been identified by Ferragina (2017), though it relies on correlational assessment

2.14 Social capital variation - Part two

The assumption that the crowding-out thesis invokes is that if the state does not intervene, then individuals would be free to accumulate social capital. However, failing to acknowledge issues of structure and inequality may have significant consequences for individual outcomes. In order to understand how inequalities relate to social capital variation, we once again draw upon Bourdieu's work, which provides us with an opportunity to frame our understanding of the macro and micro level structures of capital accumulation. We begin by acknowledging the role of practice before addressing the relevant literature.

2.15 Bourdieu and Practice

The social world, according to Bourdieu, can be explained as objective structures that constitute fields. Individuals' position within different fields and their potential practices are understood in terms of habitus and capital. The interpretation of this relationship Bourdieu (1996:101) defined as: [(habitus)(capital)] + field = practice. What this draws to our attention is that empirical analysis of the social world can be understood as; outcomes or practices that are dependent on individual characteristics and circumstances within a structure (habitus) that is specific to an environment (field). The habitus is a structured system of dispositions that is structured by past experiences, current circumstances and shapes future practices. It is not just the property of individuals but also includes groups and institutions (Maton 2008). The reason why habitus is important is that it links the individual to the social. Experiences of one's life may be unique but are shared in terms of their structure with others of the same socio-economic groups (SEGs) (Maton 2008). This informs the possibility of assessing the variation between social groups whilst maintaining relevance to the possible experiences of individuals.

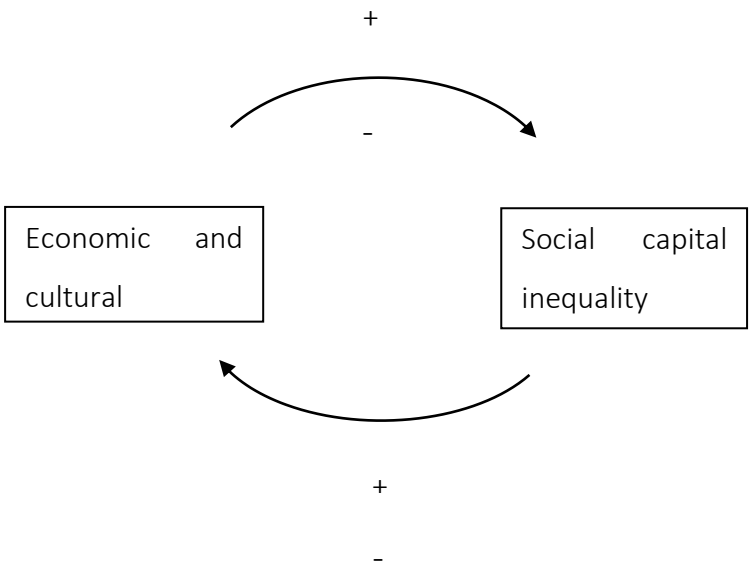
In order to understand social capital outcomes, we need to consider the field in which practice takes place. For an individual to participate in a field, they require the necessary resources to produce practice. The resources required to play the game depends on the various forms of capital (economic, cultural, social and symbolic). Capital acquired in one field can be used in another. There is not an equal footing to play the game within the field. Those who have the advantage of already possessing capital can use this privileged position to accumulate more

capital and advance their position. In this sense, privilege and capital become a positive circle of capital accumulation, one that is mutually reinforcing. The ability or success an individual has in accumulating social capital will have a strong association with their class habitus.

2.16 Social capital inequality

In Bourdieu's forms of capital, we understand how the possession of economic capital can be converted into other forms of cultural and social capital. The advantage of this newly generated capital is that it feeds back into economic capital, which further elicits greater cultural and social capital. This mutually reinforcing process of capital accumulation is what Van Oorschot and Finsveen (2010) term `Vicious and Virtuous circles'. The ability to invest in social capital is directly related to the advantage of economic capital. It provides access alongside the opportunity to dedicate time and energy toward socially productive networks.

Figure 2.3: The (re)production of social capital inequalities (based on Oorschot and Finsveen 2010)



In the opposite direction, those of a low socio-economic standing can fall into a vicious circle of social capital depletion. The reason for the inequalities of social capital and deficit return, Lin (2000) suggests, can be understood in terms of structure and homophily. Social groups occupy different socio-economic positions within a society that are a product of a historical and institutional process that create unequal opportunities. Individuals are inclined to interact

with others of similar characteristics (or similar habitus). Those from lower economic groups will have less access to more extensive networks and be reliant on the limited resources within the same social standing. Although Lin's position is perhaps a little reductionist, it does draw our attention to the potential (re)production of social capital between (socio-economic) groups.

Those with higher incomes have greater social capital across all dimensions (Van Oorschot et al., 2006). Income is positively related to volunteering (Wilson 1997; Christoforou 2004; Van Oorschot 2005) along with trust in others and institutions (Delhey and Newton 2003). In addition to income, those with higher education levels show greater participation in all social networks (Bekkers 2007; Gesthuizen et al., 2008), are more actively engaged in volunteering (Wilson 1998) and report higher levels of interpersonal trust (Brehm and Rahn 1997). Education has the potential to influence social capital from both socialisation and a resource perspective (Gesthuizen et al., 2008), encouraging individuals to internalise the norms of participation and collective interest (Durkheim 1956). Educated individuals are more likely to have higher educated parents (Blau and Duncan 1976) who are more likely to be socially active (Wilson 1997). We find empirical support of the 'intergenerational transmission of volunteering' between the children and parents who volunteer within the literature (Bekkers 2007:111). It appears that differences between highly informal and formal activity are socialised through education processes (Gesthuizen et al., 2008).

We find a similar process from the resource perspective, where the highly educated use their resources to perpetuate their status position and transfer resources to ensure their children succeed (Bourdieu 1977). The transmission of cultural capital norms that occupies a more formally active social position creates an unequal distribution of civic engagement. Those individuals without apparent access to resources that higher education and status provides may have to invest in more immediate informal networks for support (Pichler and Wallace 2007).

Within the empirical literature, we find that different social positions influence the forms of social capital individuals can access. Li et al. (2005), using the BHPS, measure social capital in

the way of neighbourhood attachment, social networks (informal networks) and civic participation (formal networks) find a socio-cultural distinction. Those from advantageous positions have access to resources and support from more extensive networks. In contrast, those from disadvantaged backgrounds are more likely to rely on neighbourhood relations for informal social support. This distinction of access between formal and informal networks is present in Hall's (2002) analysis. Hall finds a clear class distinction between the diverse networks and active participation of the middle classes compared to the limited social connections and reliance on informal networks of the working classes.

Extending the resources perspective to fields of struggle, rather than mere production, we understand the potential conflict that can develop over competition for resources creating distrust. At the individual level, personality theory suggests trust is riskier for lower status groups who cannot afford to lose. Those with high resources have more to gain and comparatively less to lose from trusting behaviour (Delhey and Newton 2003). The capacity to control one's own life leads to generalised trust (Uslaner 1999), whereas experiences of insecurity, anxiety and exclusion can diminish social trust (Patterson 1999). Lower status groups can experience a threat to their 'social value', whilst privileged groups can use their economic and cultural capital to secure social status. As a result, high-status groups are more likely to be trusting of others. The potential for variation in trust to emerge with competition over resources is confirmed in Vergolini (2011), who finds that people with lower economic resources show a lower level of institutional and interpersonal trust compared to individuals who do not experience economic difficulties.

Theoretically, it is the resource position that strengthens our understanding of the relationship between the structural inequalities within society and individuals' social capital. Here, the welfare state is a crucial equalising mechanism in resource distribution and inclusion, which can affect both the structural and social capital inequalities.

2.17 The welfare state and social capital inequality

The redistribution of resources is a vital function of the welfare state that reduces inequalities. The welfare state can directly influence inequality through tax redistribution- the more

progressive the interventions, the greater the likelihood of creating equality between socio-economic groups. The success of interventions depends on the design of the welfare state itself and the social policies put into practice (Fernandez-Albertos and Manzano 2014). Through economic and cultural processes, the welfare state can influence the development and (re)production of social capital. This influence can happen through education policies, which help to reduce the cultural capital deficit. By reducing economic inequality, the welfare state can improve the opportunities to generate social capital, resulting in less social capital inequality.

Providing access to generalised welfare institutional networks and services that individuals might not otherwise be able to access, such as health, care services and welfare rights (Van Oorschot and Finsveen 2010), provides opportunities to accumulate and maintain social capital. Social protection policies aim to keep individuals within market employment, reducing the potential risk of exclusion from social and labour market participation (Saunders 2010; Barr 2012). In doing so, they can increase the potential for social capital accumulation. The solidaristic nature of the welfare state can also be an influential determinant in shaping the levels of trust (Rothstein 2001; Kumlin and Rothstein's 2005). Guaranteeing citizenship, through the universal provision and promoting solidarity through equality, can influence the outcomes of institutional and interpersonal trust (Kääriäinen and Lehtonen 2006; Trägårdh 2007). We now turn to the empirical literature to see if there is support for the welfare state reducing social capital inequalities.

2.17.1 Empirical literature

Within the empirical literature, there have been some attempts to address the differences in social capital inequalities between welfare states, both directly and indirectly. Pichler and Wallace (2009) use the Eurobarometer (2004) survey of 27 countries to explore the outcomes of formal (the number of memberships to different associations and frequency of active participation) and informal networks (frequency of contact with friends, colleagues or neighbours) between occupational groups. They find little variation in informal networks but do observe some equalising tendencies for formal networks. Using the macro-level measure

of inequality (Gini coefficient), they found that in countries with higher inequality, working-class groups reported lower levels of participation and professional/managerial class higher levels of participation - suggesting that inequality widens social capital inequalities between SEGs.

Gesthuizen et al. (2008) confirm a similar outcome with education expansion[2] reducing the gap in social capital inequalities between lower and higher educated, suggesting that the welfare state can affect cultural capital deficit and, in turn, a reduction in social capital inequality. Using the 2004 Eurobarometer survey in 29 countries, they operationalise scores of informal social capital through the frequency of contact frequency with friends, colleagues, or neighbours and formal social capital through membership, donations and involvement in voluntary organisations. They find that greater spending (social security as a percentage of GDP) reduces the importance of education for informal networks (contact with neighbours) but increases the effect of education on membership in voluntary organisations. This finding suggests that the welfare state could increase and decrease social capital differences between education levels.

There is also some support for comprehensive welfare states reducing social capital inequalities in Oorschot and Finsveen (2010). Although there study is limited, relying on correlational evidence from pooled data of 13 countries (EVS and WVS 1981 and 1999/2000). They observed lower income and educational based inequalities in participation (number of voluntary organisations) in countries where spending was higher (social expenditure as a proportion of GDP), along with reduced interpersonal trust inequalities for education level.

Although not directly concerned with social capital, there are two more studies relevant to the discussion. Van der Meer et al. (2009) observe a potential adverse effect of social expenditure on informal relations between SEGs. Using the 2001 ISSP with 20 countries, they distinguish between three forms of social participation providing average scores of the frequency of

[2] This is the percentage of people that left full-time formal education at age 19 or older (the higher educated), divided by the percentage that left education at age 18 or younger (the lower educated), Gesthuizen et al., (2008:622).

contact with (i) nuclear family, (ii) best friend, and (iii) extended family. When compared across income groups, they find greater spending results in crowding-out of informal networks, specifically, contact with the extended family, but more for lower-income groups. Finally, addressing participation inequalities (types of voluntary organisations), van Ingen and van der Meer (2011), utilising the ESS 2002, find that welfare state expenditure (social security and health care percentage GDP) reduces the participatory inequalities between both income groups and education groups.

2.17.2 Summary and research question

The crowding-out argument assumes that a reduced welfare state encourages individuals to generate social capital. Notwithstanding a limited rational choice position, this follows the premise that everyone has equal access to social capital. The literature shows that it is likely to be unequally distributed according to social dimensions and individual circumstances. Indeed, evidence suggests the removal of welfare structures is likely to undermine rather than encourage participation (Bartels et al., 2011; Davies and Pill 2012). The within-country variation between social groups has tended to be somewhat sidelined with the mainstream approach to social capital. A focus on promoting the positive potential of unlocking social capital through individual action has ignored issues of structure and inequality. What the empirical evidence suggests is that social spending has the potential to both widen and decrease network inequalities between education and income groups. There is also the possibility that spending may improve interpersonal trust inequalities between education groups. The one study following a dimensional approach is correlational and so does not sufficiently address the macro-micro relationship.

To my knowledge, a complete account of the welfare state and social capital inequalities does not exist. Building on previous studies, chapter six will specifically address the importance of the welfare state for moderating social capital inequalities between SEGs.

2.18 Conclusion

This chapter has provided a framework for answering two questions. Does the welfare state matter for social capital outcomes? Does the welfare state reduce social capital inequalities? In order to arrive here, the chapter highlighted the need for improved measurement of both social capital and the welfare state, along with a clear dimensional account of social capital. Acknowledging the limitations of the crowding-out debate, we ask not if the welfare state crowds-in or crowds-out, but how and under what conditions this may happen. We also identified the need to think more critically about what crowding-out means in terms of individuals' abilities to access resources. Here, Bourdieu was brought back into the debate to frame our understanding of how structural inequalities may translate into further social capital inequalities and how the role of the welfare state may influence these outcomes.

Table 2.4: Summary of empirical literature, the welfare state and social capital inequality between socioeconomic groups

Study	Social capital	Socio-economic group	Welfare state measure	Relationship
Gesthuizen et al., (2008)	Contact frequency with friends, colleagues, or neighbours	Education	Social protection % GDP	Greater spending (+) reduces the importance of education for neighbour – reducing inequality
	Membership, donations & involvement in voluntary organisations			Greater spending (-) increases the importance of education for participation – widening inequality
Pichler and Wallace (2009)	Number and frequency of voluntary organisations	Occupational class	Social security % GDP	Level of inequality increases social capital inequality between occupation class
	Contact with friends, colleagues or neighbours			
Oorschot and Finsveen (2010)	Number of voluntary organisations	Employment status, income group and education	Welfare regimes & Social spending % GDP	Greater spending (+) reduces network inequalities between income education groups
	Institutional trust			No effect
	Interpersonal trust			Greater spending (+) reduces trust inequalities between education groups
van der Meer et al., (2009)	Contact with family, friends and extended family	Employment status, income group and education	Social security % GDP	Greater spending (-) reduces extended family contact for income groups
van Ingen and van der Meer (2011)	types of voluntary organisations	Education and income	Social security and health care expenditure % GDP	Greater spending (+) reduces participation inequalities between income and education groups

3 Data and Methodology

This chapter provides an overview of the chosen data for empirical analysis, which most appropriately enables us to address the research hypotheses given the practical limitations of data availability. Following on from that is a detailed account of the relevant methodologies applied throughout the thesis. Here the focus is on confirmatory factor analysis (CFA), multilevel analysis (ML) and structural equation modelling (SEM). After setting out the relevance of each approach and its importance for the area of our inquiry, I provide an overview of practical assessment. This overview will assist the reader in interpreting model results in the subsequent chapters.

3.1 Data

The availability of data to address research questions will always have some limitations. Surveys are expensive to implement and often designed to collect a broad range of data. At the European-wide level, this means cross-national longitudinal data sets are rare, and those such as the European Union Statistics on Income and Living Conditions (EU-SILC) are not always able to provide the data required for analysis. Specific modules are usually undertaken alongside the key personal and household annual reporting- providing a snapshot of a particular area of social importance. Unlike longitudinal data, there are limits to cross-sectional data sets ability to show causal changes over time. That does not mean we cannot make reliable observations about the expected and observed relationships. A theoretically informed hypothesis of why an expected relationship should persist under certain circumstances provides the context in which to make statistical inferences.

The proposed research provides a cross-country comparison of the social determinants of social capital. As such, cross-sectional data is both practical in terms of availability, and valid in explicitly allowing us to address the research aims reliably. After surveying the potential European data sets (The International Social Survey Programme, EU-SILC, European Social Survey, European/World Values Survey and European Quality of Life Survey). The EQLS was selected as the most appropriate to our area of inquiry that would best relate to the theory of social capital and provide a comprehensive measurement.

Focussing on Europe to explore the social capital welfare state relationship makes intuitive sense. Firstly, in terms of identifying a reliable social capital model, the shared cultural similarities between Europeans ensure that our concepts measure the same things and provide

us with reliable comparisons. Secondly, established European welfare states provide the prime setting to address the crowding-out thesis, while having enough cultural variation to allow for reliable cross-national comparison. Finally, just on a practical level, there are limits to the availability of quality data beyond the EU to address adequately the research hypotheses proposed.

3.1.1 European Quality of Life Survey

The European Quality of Life Surveys (EQLS) is a European survey carried out every four years (2003-2011/2012), providing both objective and subjective measures of European citizen's lives and circumstances. It covers a broad range of issues such as; health, education, employment, life satisfaction, social relationships and trust, providing an essential set of indicators for understanding society.

The EQLS is a random probability survey representative of the adult population (people aged 18 and over) living in private households. The primary data collection method is face-to-face interviews, with first contact phone interviews in Finland, Sweden (to overcomes barriers to door-to-door sampling) and Iceland (given the geographical distances). The sample size ranges from 1,000 to 3,055, with the minimum target number of interviews set at 1,000 interviews. The total sample size for the 2011/2012 survey for all 34 countries is 43,636. Sampling stages follow geographical stratification and random selection of addresses within the primary sampling units, with address or population registers (where available) covering at least 95 per cent of persons or households.

3.1.2 Sample selection

In terms of a coherent sample, member states of the European Union provide an obvious grouping for comparative analysis. There are 28 member states currently within the European Union. Although not an official member state, Iceland is considered very much European, both by the majority of its citizens and its neighbours, and is included alongside the EU28. The cultural similarities and shared historical contexts, alongside the unified approach to policy, make the EU a prime candidate for sample selection. Perhaps most importantly, both input and output harmonisation provide standardisation of definitions and indicators across populations. Specific questionnaire translation with multi-stage testing and validation ensures accuracy and comparability of data, providing reliability of the measured concepts cross-nationally. This comparability is particularly important where there may be some subjective

element to the questions. The questionnaire is translated into 25 languages for the EU27 countries, plus Icelandic and Croatian. The final working data set has 29 countries (Austria, Belgium, Bulgaria, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, Finland, France, Hungary, Ireland, Italy, Lithuania, Latvia, Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, UK, Croatia and Iceland) with a sample of 37,517 and an average response rate of 39.68%.

3.1.3 Limitations

Perhaps the most significant limitation with this data set is the relatively low response rates for some countries. The lower than expected response rate is related to the reduced number of calls to each address. Costs of delivering the survey were limited; as a result, the conductors made 3 calls instead of the standard 6-8, which resulted in a high number of non-contact addresses and an averagely low response rate. The response rate for the UK was the lowest in the survey at 26%. (A full breakdown of individual country response rates is located in appendix B). Non-response analysis showed that most rural areas within the EU had a lower response rate than urban areas.

Further paradata analysis comparing hard-to-find respondents with easy co-operators showed increased difficulty in obtaining responses for those between the ages of 28 and 38. To overcome issues of representation, the EQLS provides a post-stratification weighting to compensate for differential non-response amongst sub-groups that represents the entire population and the national level. Probability weighting ensures the correct eligibility of persons in households and cross-national weighting for the size of the country population. Alongside weights, the EQLS follows strict sampling procedures to ensure accurate estimation and representation of the population. What the EQLS does allow us to do well, which other surveys lack, is to address the construct of social capital. The available questions provide an opportunity to generate theoretically informed and empirically tested indicators not elsewhere possible.

3.2 Variables

This section details the variables used throughout the thesis and will be referred back to during the stages of analyses.

3.2.1 Individual-level variables

There are several socio-demographic variables of interest in this study, presented in Table 3.1. In the second analytical chapter, where the focus is specifically on country-level effects on social capital, they are included as control measures to ensure the observed effects are associated with the welfare state and not individual-level variance. This approach is in line with other studies on social capital (e.g., van Oorschot and Arts 2005; Pichler and Wallace 2008; Gesthuizen et al., 2008; van der Meer et al., 2009). In the third analytical chapter, where the substantive interest is on variation between SEGs in social capital outcomes across countries, there is a more explicit interest in their variance.

The variables selected are those most relevant to understanding variation in social capital outcomes. Evidence from the literature suggests that men and women have different social capital profiles (Lowndes 2000). Gender makes a difference in how much people volunteer and what kind of work they do (Wilson 2000:227). Typically, men have more formal active social networks (Van Oorschot and Finsveen 2010), and women report more trust (Elgar et al., 2011). A binary variable is created for gender, distinguishing between males and females.

Education is a strong predictor of social capital (van Oorschot and Arts 2005). Those with higher education levels show greater participation in all social networks (Bekkers 2007; Gesthuizen et al., 2008), are more actively engaged in volunteering (Wilson1998) and report higher levels of interpersonal trust (Brehm and Rahn 1997). To understand the potential variation in education, we distinguish between three education levels derived from the (1997) International Standard Classification of Education (ISCED)- i) primary [combines pre-primary and primary], ii) secondary [lower secondary to post-secondary], iii) and tertiary [first and second stage tertiary].

Income is also an essential factor in understanding individuals' social capital (Oorschot and Finsveen 2009). Economic capital affords the resource of time and access to assist in generating productive formal and informal networks. Income is positively related to all social capital dimensions (Van Oorschot et al., 2006), including trust in others and institutions (Carmo and Nunes 2013; Delhey and Newton 2003). The selected income variable used is based on

purchasing power parity (PPP) to ensure cross-national comparability and standardised (0 to 1 scale) for ease of interpretation.

Age positively relates to trust (Siegler et al., 2015) and formal networks but is negatively associated with informal networks (Kaasa and Parts 2008). It is included here as a centred variable. Household living arrangements can also affect the resources individuals can access. Individuals who are married or cohabiting have greater informal network access and tend to be more trusting (Ravanera and Rajulton 2010). They are included here as one group, with divorced widowed and single, forming the non-cohabiting group. Whether someone lives in a rural or urban area may also influence the ability to access different networks, with city dwellers found to have less informal social capital (Fidrmuc and Gerxhani 2005). A binary variable is created, distinguishing between rural and city dwelling -combining i) countryside and village ii) town and city.

Employment status is again likely to have a substantial effect on an individual's willingness and ability to participate, along with the levels of trust reciprocated. Oorschot et al. (2006) find that compared to those in jobs, unemployed people show less interpersonal trust while reporting high levels of informal social capital (contact with friends and family). Here we include a dummy variable of whether someone is unemployed or not. The implication being that exclusion from the labour market will adversely affect the potential access to networks.

Whether someone receives social benefits is likely to have a critical bearing on the levels of social capital. These individuals are most likely to feel the adverse effects of exclusion and social stratification, influencing participation (Ingen and van der Meer 2011). A lack of economic capital relates directly to the ability to generate all forms of social capital. Individuals who find themselves in conflict over limited resources are also less trusting (Patterson 1999; Delhey and Newton 2003). Receiving social benefits is included as a binary indicator.

Table 3.1: Individual-level variables

Indicator	Category	Frequency	%	*N*
Gender	Female	19,486	51.94	
	Male	18,031	48.06	37,517
Married or	No	17,378	46.32	
Cohabiting	Yes	20,139	53.68	37,317
Education	Primary	3,891	10.44	
	Secondary	24,332	65.29	
	Tertiary	9,045	24.27	37,268
Unemployed	No	33,897	90.35	
	Yes	3,620	9.65	37,517
Social Benefits	No	31,425	84.43	
	Yes	5,795	15.57	37,220
Domicile	Urban	19,879	53.07	
	Rural	17,580	46.93	37,459
Income	Standardised	Mean (2022.68 Euros)		28,534
Age	Centred	Mean (47.81)		37,517

Source: EQLS 2011/2012, Weighted

3.2.1.1 Limitations

As often is the problem with survey data, there is a significant proportion of the data missing for the income variable (see Table 3.1). Although multiple imputations often provide a way to overcome this problem, it becomes increasingly complex with random slopes and cross-level interactions. The relation between X and Y is assumed to vary both systematically as a function of W (interaction effects), which is difficult to emulate in conventional software for multilevel multiple imputations (e.g., Kim, Sugar, & Belin, 2015). As the standardised approach of multilevel analysis grows, more advanced methods are being developed, although this is not available in standard software (Simon Grund et al., 2017). Income is a crucial variable in understanding social capital variation and must be included in the analysis. As a result, listwise deletion excludes around 25% of the sample. Ensuring the proportion of excluded cases does not disproportionately affect different groups, a comparison between samples was

undertaken, which showed close approximation between the two sets of data. Tables for the comparison are located in appendix E.

3.2.2 Country-level: Independent variables

Alongside the primary EQLS data set, this study draws upon country-level data from two data sources that specifically address the welfare state measures of generosity and universalism; the tax and benefits indicators database from the European Commission[3] and the European system of integrated social protection statistics (ESSPROS[4]).

3.2.2.1 Generosity

In order to capture the real generosity of the welfare state, we employ the use of replacement rates. Replacement rates are a central component of Esping-Andersen's (1990) decommodification index, reflecting the welfare state's commitment to ensuring citizens can participate in society, irrespective of market provision. The central argument here is that as labour is commodified within capitalist societies, the welfare of individuals becomes dependent on the cash nexus (Esping-Andersen 1990). Within this context, the response of social policy and the welfare state is to meet the needs and demands of individuals. The success or degree to which each welfare state decommodifies its citizens is thus the measure by which we can differentiate variation in outcomes. The level at which income replacement alleviates unemployment reflects the level of the welfare state's generosity.

The tax and benefits indicators database from the European Commission[5] provides detailed information on the net replacement rates for social insurance, including unemployment benefits, housing benefit and social assistance. These measures account for the generosity of the welfare benefits system, taking into account the effects of other benefits, taxes and social security contributions. Replacement rates are defined as 'the net income of an unemployed person receiving unemployment and possibly other benefits expressed as a share of the income earned previously in the job before becoming unemployed'[6]. The higher the rate of replacement, the more generous the system is. This measure is critical in understanding the

[3] http://europa.eu/economy_finance/db_indicators/tab/#
[4] http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
[5] http://europa.eu/economy_finance/db_indicators/tab/#
[6] https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/tax-and-benefits-indicators-database/methodology-tax-and-benefits-indicators-database_en

qualitative and quantitative substance of welfare states, predicted to have an important bearing on social capital outcomes.

Replacement rates are based on the average worker (AW) across several model family types[7], expressed as a percentage of the average earnings of an AW. Rates are available for previous earnings at durations of 2, 7, 13, 25 and 60-month intervals. The generosity indicator selected measures the total replacement rate of unemployment benefit, housing benefit and social assistance for a single average worker. As benefit rates are often higher during initial periods of entitlement and not always available for a full year, an average entitlement across the duration is used. This approach acknowledges the decline in generosity over time and more adequately addresses countries generosity of provision.

Unfortunately, there is a gap in the data for Cyprus 2007-2014, so it does not coincide with the 2011 reference year of the EQLS. It has, however, remained at the same level since 2006, so the available data is included. Croatia's membership began in 2013, and I have included the first available year. With the replacement levels remaining stable across the period for all other countries, these are considered acceptable limitations that maximises sample size. The final indicator is averaged over the reference year 2010-2012 and is standardised for ease of interpretation.

3.2.2.2 Limitations

The available replacement rates from the tax and benefits database do not cover pensions. Pension entitlement is important for maintaining network structures later in life and a key area of welfare state support, which may reduce the overall picture of countries generosity. However, adding a separate pension indicator or combining it with the existing measure may raise other issues. Placing multiple benefits into a single scale can obscure significant differences between programs and alter the perception of generosity, as can be the case with the dual nature of pension entitlements (Kvist 2011). There is also the practical limitation on the number of macro-level variables we can use in multilevel models, making a single indicator more conducive to analysis. As our focus on variation between groups (chapter six) does not explicitly address age, this is perhaps not a limitation itself, rather something to bear in mind with comparisons of welfare state generosity.

[7] single person, single parent with 2 children, a one-earner couple without children, one-earner couple with 2 children, two-earner couple with 2 children and a two-earner couple without children.

Another concern with averaged indicators is distributional effects; the impact of insurance design may affect high and low earners differently, where those on the margins of support can be adversely affected by differences in entitlements. The AW captures a comparable measure of income replacement for a typical standard worker across countries and time - one that provides a common metric for analysis. Whilst this is necessary for the research, it is important to bear in mind that there will still be some variation beyond the common average, an area for research in its own right.

The household composition used to construct replacement rates can also alter the picture of entitlement and generosity. Robustness checks were conducted comparing the effect of generosity on each dimension of social capital across four household types [single, one-earner couple with two children, single parent with two children and one-earner couple with no children] to ensure the reliability of the generosity measure. The results of the analyses are presented in appendix D, which shows that the effects of generosity on social capital are broadly consistent across all household types. We will revisit this issue of composition in the following chapter.

3.2.3 Universalism

The second aspect of understanding the qualitative distinction of welfare states overlooked by measures of social expenditure is stratification- 'an active force in the ordering of social relations' (Esping-Andersen 1990:23). It is not merely that the welfare state provides social benefits, but it is the level of conditionality imposed on benefit recipients, which is of importance. This level is most recognisable by the varying degree of universalism present within the systems of welfare delivery.

Universalism follows the guiding principle of 'equal concern and respect' (Rothstein 1998:38). Welfare is provided to all citizens, without distinction of whether some persons are worth more than others or application of needs-testing. Targeted benefits to the most disadvantaged groups are usually less generous and often stigmatised, creating stratification and distinctions of need by the ‘undeserving poor’ (Rothstein 1998; Larsen 2007). We follow Rothstein (1998) in identifying universalism through the absence of means-testing. In doing so, we aim to account for the perceived fairness of the welfare state (Kumlin and Rothstein 2005) and the degree of selectivism that exacerbates the cultural difference (Larsen 2007).

One of the advantages of the ESSPROS is that it also allows us to distinguish between those social benefits (transferred to households) provided as a matter of right and those delivered through means-testing. Social benefits are those received in 'cash or in-kind intended to relieve them from the financial burden of a number of risks or needs'. These include comprehensive cover for disability, sickness/health care, old age, survivors, family/children, unemployment, housing and social exclusion, providing a complete picture of the social protection given to individuals by each country (European Commission 2012). The net social protection measure as a proportion of GDP combines all social benefits and accounts for potential tax deductions. In doing so, it provides a comprehensive, comparable indicator of countries commitment to ensuring individuals have a comparable stake in society. The established indicator is the level of non-means-testing as a proportion of GDP 2010-2012, which is again standardised for comparison.

3.2.3.1 Limitations

Although the focus here is on social protection, arguably a core aim of the welfare state –there are broader elements beyond the 'cash nexus' in the universal provision of services unaccounted. Areas such as education, healthcare, childcare provision and transportation are important considerations that will affect individuals' outcomes and the broader notion of universalism present within countries. Therefore, the measure may slightly underrepresent the amount of universalism present. That said, the importance of means-testing to the discussion is that it represents a distinct form of stratification within welfare states, providing us with meaningful qualitative distinction with which to evaluate the underlying nature of welfare state provision; one that acknowledges the potential consequences of the stigma attached to social benefits that can be detrimental to the individual and society.

[Note: Denmark has since revised its social protection statistics (from municipal reforms in 2007), resulting in a percentage increase of means-testing because of a change in classification for some important cash benefits. Although considerations of existing distinctions are still ongoing, this does affect the picture of Denmark's universalism, and it would no longer rank highest on our universalism scale. Preliminary analysis shows that whilst this does not affect the overall relationship to social capital, there is a slight drop in the effect size].

3.2.4 Active Labour Market Spending Policies

Alongside the qualitative measures of social protection, the welfare state can also alleviate the adverse effects of unemployment through active labour market policies (ALMPs). Re-entry into the labour market is a crucial mechanism in preventing marginalisation and social exclusion, enabling the prospect of developing economic and social capital. Of the nine potential labour market policies[8], I focus specifically on the level of spending on training. Training has the strongest and most positive long-term effects of ALMPs (EU Commission 2016:7). It can directly affect lower socioeconomic groups' economic and cultural capital deficits through training opportunities and transitions to employment. In doing so, it can provide access to broader network structures and provide more opportunities to generate social capital, potentially reducing the level of social capital inequalities. Including a direct measure of social policy allows us to contextualise the models and enhance our understanding of the welfare state's role in influencing social capital outcomes.

ALMP expenditure data is from the Directorate General for Employment, Social Affairs and Inclusion as part of the European Commission[9], expressed as a percentage of GDP. Data[10] for the reference year is unavailable in Greece, Croatia and the UK, so I use the 2010-2012 average to maintain comparability. As with other independent variables in the study, it is standardised for ease of interpretation and will be mean-centred for assessing random slope and cross-level interaction effects.

3.2.5 Control variables

In order to assess whether the chosen independent variables have an effect on the levels of social capital, it is necessary to include controls in the model. GDP is considered one of the most important predictors of social capital (Putnam 2000), making it an ideal indicator for comparison. GDP often represents social progress, with the belief that greater wealth at the macro level will ensure provision at the micro-level (Stiglitz et al., 2009). The importance of addressing the substantive function of welfare states is that it also aids in moving beyond a simple metric of growth. In doing so, it enables an assessment of how different welfare systems

[8], 1. Labour market services 2.Training 3.Job rotation and job sharing 4.Employment incentives 5.Supported employment and rehabilitation 6.Direct job creation 7.Start-up incentives 8.Out-of-work income maintenance and support 9.Early retirement

[9] https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00076 (accessed November 2016).

[10] There is no LMP data held for Iceland.

distribute for social capital outcomes. In line with other studies within the empirical literature (e.g., van Oorschot and Arts 2005; van Oorschot et al., 2006; van der Meer et al., 2009; Gelissen et al. 2012) that measure the wealth of the country, as GDP per capita PPS; it is included as a control, to assess whether the proposed measures of generosity and universalism are of importance for the levels of individuals' social capital beyond GDP. As GDP may also account for a more general modernisation process, accounting for some of the cultural variation, it is worth pointing out that this may make the control tests a little conservative - something to bear in mind when assessing the significance of the welfare state measures within the models.

Data taken from Eurostat national accounts[11] is a weighted average of relative price ratios with respect to a basket of goods and services. The measure of GDP per capita in Purchasing Power Standards (GDP PPS) provides a meaningful comparison between countries that do not overinflate economic differences. Along with the other independent variables, GDP is standardised from 0 to 1.

[11] https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tec00114&plugin=1 (accessed March 2016).

Table 3.2: Country-level variables, standardised

	Generosity	Universalism	Control	Policy
Country	Net RR (single)	Non-means %GDP	GDP PPS	LMP spending on training
Austria	0.76	0.73	0.37	0.89
Belgium	0.82	0.79	0.34	0.31
Bulgaria	0.47	0.06	0.00	0.04
Cyprus	0.50	0.22	0.23	0.10
Czech Republic	0.58	0.30	0.17	0.02
Germany	0.61	0.61	0.36	0.50
Denmark	0.91	1.00	0.38	0.73
Estonia	0.38	0.06	0.11	0.17
Greece	0.00	0.75	0.14	0.03
Spain	0.59	0.41	0.22	0.37
Finland	0.73	0.78	0.33	1.00
France	0.79	0.82	0.29	0.71
Hungary	0.26	0.39	0.09	0.05
Ireland	0.79	0.06	0.39	0.76
Italy	0.16	0.72	0.27	0.27
Lithuania	0.20	0.05	0.09	0.04
Luxembourg	0.95	0.41	1.00	0.09
Latvia	0.61	0.00	0.05	0.28
Malta	0.51	0.11	0.17	0.04
Netherlands	1.00	0.64	0.40	0.25
Poland	0.34	0.20	0.09	0.02
Portugal	0.91	0.49	0.15	0.62
Romania	0.12	0.07	0.03	0.01
Sweden	0.61	0.80	0.37	0.19
Slovenia	0.65	0.49	0.17	0.16
Slovakia	0.27	0.13	0.13	0.00
UK	0.48	0.64	0.27	0.03
Croatia	0.51	0.27	0.06	0.10
Iceland	0.75	0.20	0.32	:
EU average	0.53	0.41	0.23	0.29

3.2.6 Dependent variables

The theoretical and empirical work required for reliable social capital indicators is the focus of the next chapter. Here we present the detail of the variable composition as a reference guide that can be referred back to during the stages of analysis. As we identified in the previous chapter, there are four dimensions to the conceptual model of social capital, relating to networks and trust.

Informal networks comprise of five observed variables that ask if an individual would get support in each of the following situations; [i) help around the house when ill ii) advice about a serious personal or family matter iii) help when looking for a job iv) someone to talk to if they were feeling a bit depressed v) able to borrow money in an emergency]. These measures are designed to precisely account for access to resources.

Formal networks are measured through two separate indicators. Voluntary networks focus on how often an individual did unpaid voluntary work through the following organisations in the last 12 months; i) Community and social services ii) Education, cultural, sports or professional associations iii) Social movements or charities iv) Political parties, trade unions and v) Other voluntary organisations] designed to capture potential access in the broader network setting. These are variables considered most closely related to the perceived crowding-out within the welfare state. Political networks are derived from four questions that ask if an individual; i) attended a meeting of a trade union, a political party or political action group, ii) attended a protest or demonstration, iii) signed a petition, including an e-mail or online petition and iv) contacted a politician or public official (other than routine contact arising from the use of public services) in the past 12 months.

The Institutional trust measures comprise of four observed variables; based on a scale of 1 to 10 of how much an individual personally trusts - i) Parliament ii) the legal system iii) government iv) and local authorities] these variables reflect those institutions most related to the welfare state itself. Finally, there is a single indicator of interpersonal trust derived from the question; generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?, which also provides on a scale of 1 t o10].

As will become apparent in the next chapter, these variables are themselves, not directly observed but inferred through latent structures.

Table 3.3: Social capital dependent variables, standardised mean country scores

Country	Informal	Voluntary	Political	Institutional	Interpersonal
Austria	0.79	0.31	0.14	0.47	0.47
Belgium	0.71	0.16	0.12	0.50	0.41
Bulgaria	0.88	0.06	0.05	0.39	0.27
Cyprus	0.68	0.15	0.11	0.09	0.33
Czech Republic	0.86	0.21	0.10	0.33	0.30
Germany	0.80	0.18	0.11	0.45	0.49
Denmark	0.68	0.24	0.17	0.67	0.62
Estonia	0.78	0.14	0.06	0.42	0.41
Greece	0.86	0.12	0.09	0.36	0.18
Spain	0.88	0.18	0.12	0.49	0.34
Finland	0.69	0.27	0.14	0.69	0.60
France	0.67	0.19	0.18	0.48	0.39
Hungary	0.87	0.10	0.04	0.37	0.32
Ireland	0.74	0.31	0.14	0.50	0.37
Italy	0.81	0.13	0.11	0.43	0.27
Lithuania	0.84	0.09	0.06	0.39	0.24
Luxembourg	0.70	0.20	0.18	0.55	0.60
Latvia	0.77	0.09	0.07	0.34	0.28
Malta	0.79	0.13	0.07	0.41	0.43
Netherlands	0.71	0.25	0.14	0.58	0.51
Poland	0.88	0.11	0.06	0.42	0.30
Portugal	0.83	0.15	0.05	0.36	0.28
Romania	0.84	0.10	0.05	0.44	0.22
Sweden	0.84	0.25	0.25	0.60	0.58
Slovenia	0.90	0.15	0.06	0.47	0.25
Slovakia	0.88	0.15	0.08	0.35	0.27
UK	0.72	0.17	0.15	0.50	0.42
Croatia	0.86	0.14	0.14	0.40	0.25
Iceland	0.80	0.31	0.29	0.59	0.43
EU 29 average	0.80	0.17	0.11	0.37	0.45

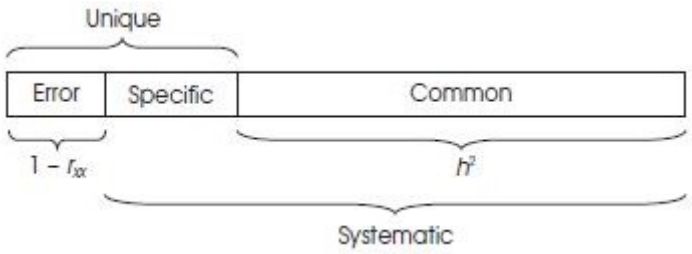
3.3 Methodology

With the data sources confirmed, I now explain the methods used to address the research hypotheses. Here I follow a multilevel modelling framework and a general structural equation modelling (SEM) framework that includes confirmatory factor analysis (CFA).

3.3.1 Factor Analysis

All factor analytical methods involve the process of partitioning variance. Factor analysis assumes that the covariances (shared common variance) between a set of observed variables can be explained by a smaller number of underlying factors (Hox and Bechger 1998:357). The diagram (Figure 3.1) below illustrates the separation of variance and covariance. The unique variance is the specific variance (not explained by any factor in the model) plus measurement error - informing how well the observed variables are suited to a single factor.

Figure 3.1: Partition of indicator variance in factor analysis



Source: Kline (2015:190)

There are two main reasons for employing factor analysis that directly relate to the appropriateness of the methodology. From one position, it is employed as a simple data reduction technique to reduce the number of observed variables into a common measurement system. The second is to address a theoretical hypothesis that combines seemingly uncorrelated variables into a single latent variable structure. Both are valid and well-explored approaches (Kline 2015). It is the second aspect of the methodology that is most significant to this study — allowing us empirically to confirm our theoretical positions while accounting for the unobserved or unknown of social capital. That is to say, social capital is not directly observable and must be approached as a latent variable construct. Unlike standard variables, such as occupation, income and education level, which have clearly defined measures, social capital resides within the structures of social relations. There is no simple scale to account for

the observation of social capital or the multifaceted nature of the proposed dimensions. The importance of acknowledging this proposition is that to address the theoretical construction of social capital and provide reliable indicators for analysis, we must employ the appropriate methodology; factor analysis.

Factor analysis enables us to explore the relationship between data and theory in a meaningful way. The main distinction between exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) is the factor specification. EFA theoretically generates all possible solutions and is a statistical result led process. In CFA, the researcher specifies the number of factors and assignment of variables in advance. By testing the correspondence between indicators and constructs, CFA examines the extent to which a researcher's prior knowledge and theory is present within the actual data. The results of the tests tell us how well the data fit the theoretical construct - confirming or rejecting our theory. [Addressing measurement and construct validity is a central research aim of this thesis, which has not received the requisite attention within the literature].

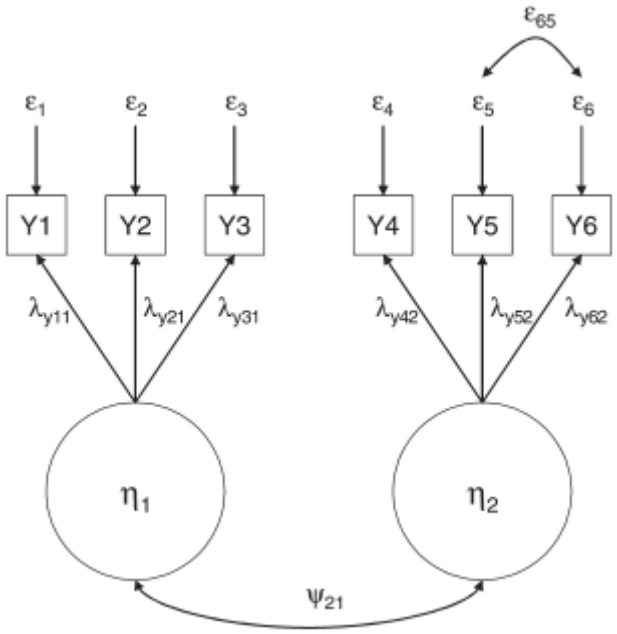
The purpose of CFA is to test a hypothesis about the factor structure. In order to do this, we must first obtain estimates of the model's parameters and second assess the fit of the model (Hox and Bechger 1998).

3.3.2 CFA Model Parameters

Each CFA model identifies factor loadings, unique variance and factor variance. Factor loadings are the regression slopes for the predicted indicators of the latent variable. Unique variance is the measurement error and the variance which is not accounted for by the latent variable. Factor variance indicates the sample variability between individuals for the latent variable. Where appropriate, a CFA model may also contain error covariances, signifying that two indictors covary (Brown 2015).

Although we test for a two-factor model (formal social capital), the CFA models identified in the next chapter are primarily single-factor structures. The brief illustration below is representative of all CFA models applied, including the more complex models in chapter seven.

Figure 3.2: Two-factor CFA model, each with three observed variables and one error variance



Name	Parameter	Matrix	Type	Description
Lambda	λ	Λ	Regression	Factor loadings
Theta-epsilon	ϵ	Θ_ϵ	Variance–covariance	Error variances and covariances
Psi	ψ	Ψ	Variance–covariance	Factor variances and covariances
Tau	τ		Mean vector	Indicator intercepts
Alpha	α		Mean vector	Latent means
Eta	η		Vector	Names of endogenous variables

Source: Brown (2015:49)

Figure 3.2 provides a graphical representation of a simple CFA model with notation[12]. Factor loadings are represented by lambdas (λ), the unidirectional arrows (→) from the factors (η) [represented as a circle] to the indicators (Y) [represented as a square] depict the direct (regression) effects. The curved bidirectional arrows symbolise the covariance; between the factors (ψ) and the error covariances between the indicators (ϵ). All error variances and

[12] Although there is a slightly different notation between latent X and Y, for what is exogenous (X) latent variables and endogenous latent variables (Y), specification does not affect parameter estimates (Brown 2015). I use the above notation as a common reference guide and consider X and Y interchangeable for explanatory purposes.

covariances are contained in the theta(Θ) matrix (Brown 2015). The corresponding data matrix is represented below (3.0). [Note: Latent variables are unobserved and have no scale of measurement, as such, one of the etas is constrained to 1 in each factor; each pattern coefficient of the factor then derives its metric from the constrained eta.]

$$\begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \\ y_5 \\ y_6 \end{bmatrix} = \begin{bmatrix} \lambda_{11} & 0 \\ \lambda_{21} & 0 \\ \lambda_{31} & 0 \\ 0 & \lambda_{42} \\ 0 & \lambda_{52} \\ 0 & \lambda_{62} \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \end{bmatrix} + \begin{bmatrix} \epsilon_1 \\ \epsilon_2 \\ \epsilon_3 \\ \epsilon_4 \\ \epsilon_5 \\ \epsilon_6 \end{bmatrix} \quad (3.0)$$

The basic measurement model within the general CFA framework is:

$$\gamma = +\Lambda_y \eta + \varepsilon \quad (3.1)$$

$$x = +\Lambda_x \xi + \delta \quad (3.11)$$

The specific pattern of variances and covariances found within the observed variables are represented in matrix form as vectors. Where γ is a p × 1 vector of observed variables, *eta* (η) is an m-vector of latent variables, *lambda* (Λ) is a p × m matrix of factor loadings and *epsilon* (ε_i) is a p × 1 measurement errors that are uncorrelated with the factors. Possible correlations may exist among the error terms, which are contained in the theta (θ) matrix. (Heck and Thomas 2015:137).

In a matrix form, the variance-covariance structure is represented as:

$$\Sigma = \Lambda\Psi\Lambda + \Theta \quad (3.2)$$

Where psi (Ψ) is a m x m symmetric matrix of factor variances and covariances, and theta (Θ) is a p x p symmetric covariance matrix of residuals, normally distributed with a mean of zero. The observed variables link to the underlying factors through the factor loadings (Λ) (Heck and Thomas 2015:137). This structure allows us to specify each parameter of the CFA model. The notation for estimating the variances and covariances in the CFA model is presented in equations (3.3 to 3.5) below.

$$VAR(y_2) = \sigma_{22} = \lambda_{21}\,^2\psi_{11} + \epsilon_2 \quad (3.3)$$

$$COV(y_2, y_3) = \sigma_{3,2} = \lambda_{21}\psi_{11}\lambda_{31} \quad (3.4)$$

$$COV(y_3, y_4) = \sigma_{4,3} = \lambda_{31}\psi_{21}\lambda_{42} \quad (3.5)$$

3.3.3 Estimating Model Parameters

Obtaining estimates for each parameter of the CFA model, estimation procedures derive the relation of the covariance matrix of the observed variables to the structural parameters (Bollen 1998). A fitting function is applied to minimise the difference between the predicted covariance matrix (Σ) and the sample covariance matrix (S). The maximum likelihood (ML) and weighted least squares (WLS) functions are represented below (3.6 and 3.7).

The ML fit function expresses the log of the implied covariance matrix, plus the sum of diagonal elements (trace operator) of the inverse of the implied covariance matrix, multiplied by the observed covariance matrix minus the log of the observed covariance matrix minus p, where p is the number of parameters estimated in the model (Davey and Savla 2010:29). (See Bollen 1998, for full derivation).

$$F_{ML} = \ln\ |\Sigma| + tr(\mathrm{S}\Sigma^{-1}) - \ln|\mathrm{S}| - p \quad (3.6)$$

When the models are complex and comprised of categorical variables, ML estimation can be computationally demanding. In such instances, WLS estimation is applied. It follows the same principle of minimising the discrepancy between S (sample of polychoric correlations) and Σ (implied asymptotic covariance matrix) but uses a positive-definite weight matrix (W) (Muthén 1984).

$$F_{WLS} = 1/2(\mathrm{S} - \Sigma)W^{-1}(\mathrm{S} - \Sigma) \quad (3.7)$$

3.3.4 Path Analysis

Within the SEM framework, CFA is essentially the measurement part of the model imposed on the data (Hox and Bechger 1998). When our attention turns to understanding the relationship between the dimensions of social capital in chapter seven, we add a structural component to the model. Here the significance of path analysis is that it allows us to combine factor analysis with regression analysis. In doing so, we maintain the latent variable structures of our social capital dimensions while inferring the likely interrelationships between them. If we recall the factor model in Figure 3.2, the curved bidirectional arrows symbolised the covariance between the factors (ψ). In a structural model where we assume one factor to have an effect on the other, the covariance becomes a regression model (γ) indicated by a directional arrow. To

make this a little clearer to the reader, the example below taken from Skrondal and Rabe-Hesketh (2004:87) provides the general form and path diagram of a structural model with four latent variables.

In Figure 3.3, the structural model shows both latent dependent variables (η) are regressed on (γ) both latent explanatory variables (ξ) and one latent dependent variable is regressed on the other (β), assuming ξ_{1j} and ξ_{2j} are correlated whereas ζ_{1j} and ζ_{2j} are uncorrelated. The model is represented in linear form (3.8).

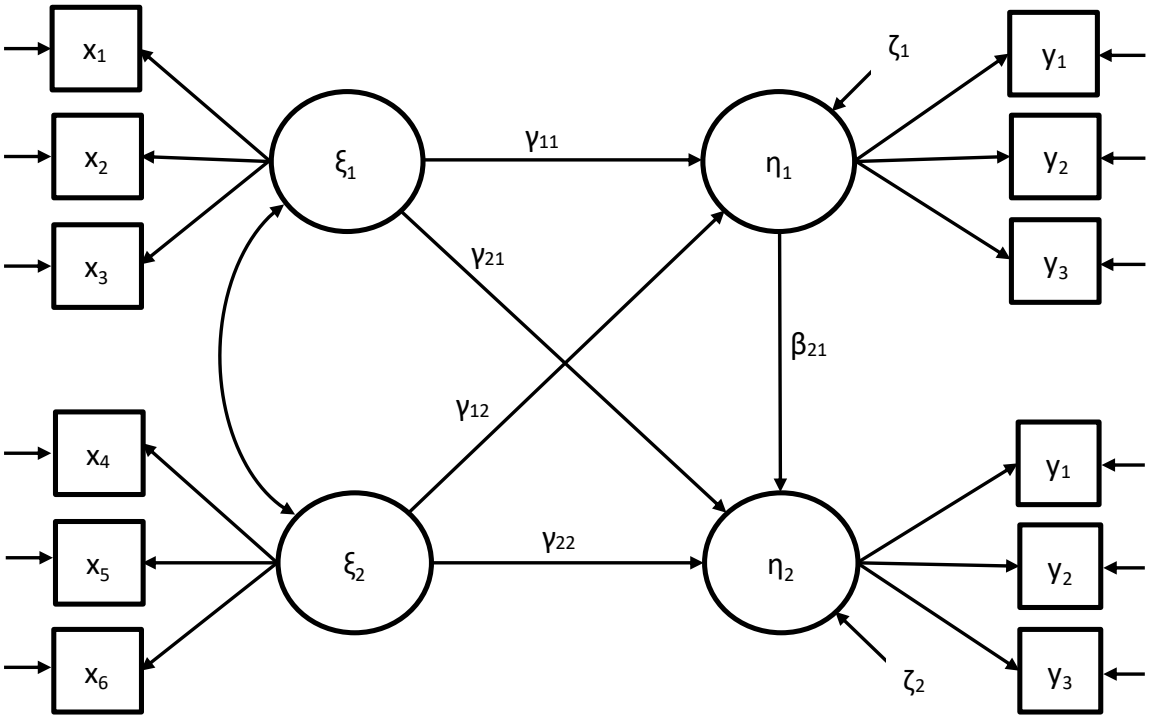
$$\begin{bmatrix} \eta_{1j} \\ \eta_{2j} \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ \beta_{21} & 0 \end{bmatrix} \begin{bmatrix} \eta_{1j} \\ \eta_{2j} \end{bmatrix} + \begin{bmatrix} \gamma_{11} & \gamma_{12} \\ \gamma_{21} & \gamma_{22} \end{bmatrix} \begin{bmatrix} \xi_{1j} \\ \xi_{2j} \end{bmatrix} + \begin{bmatrix} \zeta_{1j} \\ \zeta_{2j} \end{bmatrix}. \quad (3.8)$$

In general matrix form, the SEM model is represented as;

$$\eta_j = \mathrm{B}\eta_j + \Gamma\xi + \zeta_j \quad (3.9)$$

Where eta (η) is a vector of latent factors, Beta (B) is a matrix of regression coefficients among the latent factors. Gamma (Γ) is a matrix regression of coefficients relating to the latent factors, and Zeta (ζ) is a vector of residuals. This basic framework will be used in chapter seven when we explore the interrelationships between social capital dimensions.

Figure 3.3: Path diagram for the structural equation model



Following estimation of the models' specified parameters, we still require an assessment of their validity and reliability. That is to say, how confident are we that the models proposed are correct and fit the data. There are several measures to test the underlying assumptions of model fit and data correspondence, which I now explore.

3.3.5 Model Fit

The statistical test applied to assess the model itself is the chi-square test, which indicates the models' reliability. This test is a rejection of the null hypothesis that $S = \Sigma$; the observed covariance matrix is the same as the predicted covariance matrix, where F_{ML}(3.6) and F_{WLS} (3.7) are the fit functions, and $(n-1)$ are the degrees of freedom.

$$\chi^2 = (n-1)F_{ML} \quad (3.10)$$

An issue with the chi-square test of model fit is that large sample sizes and model complexity can sometimes obscure the actual observation. A large *n* increases the power of the chi-square test, which can lead to an over rejection of models, even if the residuals are small (Eskamp 2017; Barrett 2007; Kline 2005). As a result, fit indices are applied to assess the level of 'misfit' or approximate level of model fit. They are not directly significance tests themselves but are continuous measures of model-data correspondence. There are four types of 'good' and 'bad' fit indices: i) Absolute fit indexes measure how well a priori model explains the data ii) Incremental (relative, comparative) fit indexes measure the relative improvement in the fit of the researcher's model over that of a baseline model. iii) Parsimony-adjusted indexes include in their formulas a correction or "penalty" for model complexity iv) Predictive fit indexes replicate model fit through multiple samples drawn from the same population (Kline 2015:266).

Practical cut-offs for observed models introduced to aid model assessment are by their very nature arbitrary and not a measure of statistical reliability (Kline 215). However, if there is theoretical support and confidence in the model, we can utilise them to assess and clarify the model. This does not mean that if the statistical reliability is missing, using fit indices can replace and justify the model. Rather that it adds contextual information to our understanding of the relationship between the model and data.

The appropriate thresholds found within the literature considered as a guide for 'reliable' indices are:

i) The CFI (Bentler Comparative Fit Index) compares the researcher's model against that of the independence (null) model. A score of .90 indicates the fit of the proposed model is 90 per cent better than the baseline model, with a score ≥ .95 preferred (Bentler 1990).

$$CFI = 1 - [\chi^2_{model} - df_{model} / \chi^2_{null} - df_{null}] \quad (3.11)$$

ii) The TLI (Tucker-Lewis Index) imposes a greater penalty for model complexity than the CFI, with scores of ≥ .90 and above indicated as acceptable.

$$TLI = [(\chi^2_{null}/df_{null}) - (\chi^2_{model}/df_{model})]/[(\chi^2_{null}/df_{null}) - 1] \quad (3.12)$$

iii) The RMSEA (Root Mean Square Error of Approximation) upper bound of the 90 per cent confidence interval should be ≤ .08. Hu and Bentler suggest (1999) .06 and Stieger (2007) .07 as a more suitable cut-off. This measure informs the probability that the model is correct and explains the data.

$$\text{RMSEA} = \sqrt{[\chi^2_M - df_M]/[(N-1)df_M]} \quad (3.13)$$

iv) The SRMR (Standardized Root Mean Square Residual) is a measure of the mean absolute correlation residual - the difference between the observed and predicted correlations. Here an SRMR > .10 may indicate a poor fit. (Kline 2015:273-77).

$$\text{SRMR} = \sqrt{\frac{S/}{p(p+1)/2 + p}} \quad (3.14)$$

Where S is (3.16)

$$S = \sum_{j=1}^{p} \sum_{k=1}^{j-1} \left(\frac{S_{jk}}{\sqrt{S_{jj} S_{kk}}} - \frac{\sigma_{jk}}{\sqrt{\sigma_{jj} \sigma_{kk}}} \right)^2 +$$

$$\sum_{j=1}^{p} \left(\frac{m_j}{\sqrt{S_{jj}}} - \frac{u_j}{\sqrt{\sigma_{jj}}} \right)^2 + \sum_{j=1}^{p} \left(S_{jj} - \frac{\sigma_{jj}}{S_{jj}} \right)^2$$

p is the number of variables in the model, S_{jk} and σ_{jk} is the sample and model estimated covariance between the $j-th$ and $k-th$ variables. m_j and u_j is the sample and the model-estimated mean of the $j-th$ variable (Asparouhov and Muthén 2018:5).

The default estimator used for categorical data is the WLSMV. This estimation process provides a WRMR indicator as a replacement test to the SRMR, which is an experimental fit statistic. Although a cut-off around ≤ 1.0 is applied and increasingly reported with the literature, it is generally considered to be of low importance and does not significantly contribute new information on its own (Muthén and Muthén 2015).

$$\mathrm{WRMR} = \sqrt{\sum_r^e \frac{(S_r - \sigma_r)^2}{\gamma_r} / e} \qquad (3.17)$$

3.3.6 Local fit testing

Relying on the global fit statistics alone may still hide some model misspecification. It is possible to have a high CFI well above the threshold yet still have some misspecification within the model. The RMSEA is often a good indication of whether there is an internal inconsistency concerning the correlated relationship of the chosen variables. If there is any uncertainty of the model fit following the chi-square test and global fit statistics, the correlation residuals provide clarification over potential issues with data correspondence. Where variables appear correlated at the >.10 level, there is an indication that the model requires further specification or adjustment (Goodboy and Kline 2017). In such instances, it is also helpful to consult the modification indices.

3.3.7 Modification Indices

The fact that modification indices are available does not alone provide sufficient justification for application to improve model fit. Pursuing a lower chi-square score or p-value does not automatically guarantee an improved specified model. Relaxing parameters within a model, the change in degrees of freedom and parameterisation will often result in a change in the chi-square statistic without necessarily improving the model. However, if there are theoretical justifications for specifying relationships between the observed variables within the models, we are on much safer ground to provide meaningful modifications that identify reliable models within the data. Theory first, data correspondence second, is the approach that I follow throughout model identification and application.

Following the construction and establishment of reliable indicators, the next step is to consider data extraction for analysis.

3.3.8 Factor Scores

The application of CFA allows the researcher to assess the suitability of generating latent factors from the data that can better represent the construct of social capital. By analysing the covariance between multiple observed variables, CFA draws our attention to what is unobserved within the data. After establishing a tested theoretical model, it is then possible to generate a single indicator of measurement that represents the specified structure, one that can be utilised as a dependent variable for multilevel analysis. There are a few approaches to generating factor scores, which results in different outcomes.

Sum scores are the simplest way to estimate factor scores. This approach essentially sums the raw scores of item loadings for each individual. Each factor has an equal weighting regardless of the loading, so it cannot account for each variable's contribution to the factor. OLS regression scores predict the location of each individual on the factor, taking into account the correlation between the observed variables (DiStefano et al., 2009).

It is also possible to generate factor scores through the maximum likelihood function, where the estimates taken from factors scores create a model for each individual [the likelihood of an estimated factor score given the data]. Using factor means and covariances to define the likelihood provides a significantly more reliable account of the data and individual's scores (Estabrook and Neale 2013).

The final method for consideration is the expected posterior methods approach (EAP) which uses Bayesian estimation. Here a distribution of factor scores for each individual is taken as plausible values to generate multiple data sets and compute the posterior for each latent. Parameters are assumed to vary, so uncertainty in model estimation can be considered, with the Bayes estimator providing more reliable standard errors (Asparouhov and Muthén 2010).

3.3.9 Selection

The main difference between the Bayes and maximum likelihood approach regarding factor estimates and errors is its performance in small samples (Estabrook and Neale 2013). As there are a large number of cases within the EQLS, the maximum likelihood should enable the production of reliable factor scores assigned to each individual in the data set. Remaining

within the Stata environment, factor scores are generated using the Bayes estimator, which provides a suitable and reliable form of data extraction.

Following the extraction of factor scores, we are in a position to use these scores as single dependent variables in data analysis. The method most suited to our area of inquiry is the application of multilevel analysis.

3.4 Multilevel Analysis

In standard multiple regression, the units of analysis are independent observations, assuming that residuals are uncorrelated with one another. If the group effects remain unaccounted for, then the independence assumption will not hold. While fixed effects models with dummy group variables maintain independence, the reliability of parameter estimation of numerous countries can be problematic. It is also not possible to estimate the group-level predictors separate from the effects of the group dummies (Steele 2008). Multilevel (random effects) models, on the other hand, allow us to overcome this confounding problem, enabling the effects of both types of variables to be estimated. One further issue of ignoring the hierarchical structure of the data is underestimating the standard errors of the regression coefficients. This decision can lead to overstated statistical significance, which is more problematic at the country-level (Steele 2008), itself a significant area of the research focus.

In summary, multilevel analysis allows us to reliably estimate the correct standard errors and analyse the within-group and between-group variance, explaining variability between individuals and between groups. By separating the individual-level from the country-level, we can take the context and environment of individuals into consideration.

The level of variance that is present at the country-level is estimated through the intraclass correlation (ICC) - defined by the equation below (3.18). The ICC is the proportion of group-level variance compared to the total variation (Hox 2010:15).

$$\rho = \frac{\sigma_u^2}{\sigma_u^2 + \sigma_e^2} \tag{3.18}$$

Following a two-level model, understanding individuals (level 1) to be nested within countries (level 2), we aim to understand how the country-level effects of welfare state generosity (in

the form of replacement rates) and universalism (in the form of means-testing), relate to individuals outcomes of social capital (as measured through networks and trust).

3.4.1 Random intercept model

The simplest hierarchal linear model is the random effects model without any explanatory variables (at the individual or country level). The empty model contains random variation between and within groups, represented in the linear notation below (3.19). Where the dependent variable Y_{ij} is the sum of the general mean γ_{00}, a random effect at the group level, $U_{oj,}$ and a random effect at the individual level, R_{ij} (Snijders and Bosker 2012:49):

$$Y_{ij} = \gamma_{00} + U_{oj} + R_{ij}. \qquad (3.19)$$

The empty model identifies the partitioned variance between the two levels within the data. This is particularly useful, as it tells us how much country-level variation there is to explore. The total variance in the dependent variable is the sum of variance within the population and variance between countries around the true mean. The total variance of Y represents the sum of the level-two and level-one variances below (3.20). The random variables U_{0j} and R_{ij} are assumed to have a mean of 0 and to be mutually independent.

$$var(Y_{ij}) = var(U_{0j}) + var(R_{ij}) = \tau_0^2 + \sigma^2. \qquad (3.20)$$

The covariance between two individuals $(i\ and\ i')$ in the same group (j) is equal to the variance of the contribution (U_{0j}) that these individuals share,

$$cov(Y_{ij}, Y_{i'j}) = var(U_{oj}) = \tau_0^2. \qquad (3.21)$$

The correlation between two random individuals drawn from the same group is essentially the interclass correlation (ρ) and explains the total variability due to the group level.

(3.22)

$$\rho\left(Y_{ij}, Y_{i'j}\right) = \frac{between\ group\ variance}{total\ variance} = \frac{\tau_0^2}{\tau_0^2 + \sigma^2}$$

3.4.2 Random intercept model with individual explanatory variables

Introducing random parameters into the model allows regression coefficients to vary between groups, accounting for the fact that some groups, on average, will have higher Y responses and others will have lower ones. The random intercept model with explanatory variables at the

individual level includes those socio-demographic characteristics most relevant to understanding social capital variation [age, gender, marital status, education, income, employment, social benefits and citizenship]. All individual variables are included simultaneously as each is theoretically relevant to understanding social capital outcomes. This model contains unexplained variance at two levels, with the group effects U_{oj} left unexplained by explanatory variables (x).

$$Y_{ij} = \beta_0 + \sum_p \beta_p X_{pij} + U_{oj} + R_{ij} \qquad (3.23)$$

Y_{ij}= dependent variable, X_p = individual explanatory variables, β_0= coefficient for constant (intercept), β_p= coefficient for individual-level explanatory variables, U_{0j}: group level residuals, R_{ij}: individual-level residuals.

3.4.3 The random intercept model with contextual variables

At the group level, each explanatory variable is included in turn to assess its effect before combining all other control variables. These are the specific welfare state measures of generosity (replacement rates) and universalism (non-means testing), alongside ALMPs and the specific control measure of GDP (per capita purchasing power parity), here indicated as Z_q. Again explanatory variables providing the regression parameters for the average effect on (y).

$$Y_{ij} = \beta_0 + \sum_p \beta_p X_{pij} + \sum_q \beta_q Z_{qj} + U_{oj} + R_{ij} \qquad (3.24)$$

Y_{ij}= dependent variable, X_p = individual explanatory variables, Z_q = country level explanatory variables β_0= coefficient for constant (intercept), β_p= coefficient for individual level explanatory variables, β_q= coefficient for country level explanatory variables, U_{0j} : group level residuals, R_{ij}: individual-level residuals.

3.4.4 The random slope model

The addition of U_{oj} in the random intercept model (3.19) expresses the potential for country-level variation from the mean - social capital can vary between countries. In the random slope model, the inclusion of a second random effect ($U_{1j}x_{ij}$) represents the variation between the group and the explanatory variable. For example, as used in this thesis, the effect of socioeconomic status on social capital may differ between countries.

$$Y_{ij} = \beta_{0j} + \beta_1 X_{1ij} + \sum_p \beta_p X_{pij} + \sum_q \beta_q Z_{qj} + U_{1j} X_{1ij} + U_{oj} + R_{ij} \quad (3.25)$$

Y_{ij}= dependent variable, X_1=individual level variable allowed to vary across countries, X_p= individual explanatory variables, Z_q = country-level explanatory variables β_0= coefficient for constant (intercept), β_1= coefficient for individual-level variable allowed to vary across countries, β_p= coefficient for individual-level explanatory variables, β_q= coefficient for country-level explanatory variables, U_{0j}, U_{ij}: group level residuals, R_{ij}: individual-level residuals.

In this model, the level-two residuals (U_{oj}) and (U_{1j}), along with level-one residuals (R_{ij}), have a mean of 0, given the value of X. Where β_0 is the average intercept and β_1 is the average regression coefficient for X. The term $U_{1j}x_{ij}$ is the interaction term between the group and the individual. This model implies that for individuals within the same group, their correlation and variation of Y are dependent on the value of X. It also assumes that group-level random effects are independent of the level one residuals, which themselves are normally distributed (Bosker and Snijders 2012:75).

$$\text{var}\left(U_{0j}\right) = \tau_{00} = \tau_0^2 \quad (3.26)$$

$$\text{var}\left(U_{1j}\right) = \tau_{11} = \tau_1^2$$

$$\text{cov}(U_{oj}, U_{ij}) = \tau_{01}$$

What this means within the context of the hypotheses is that after observing the individual and country-level effects on social capital, we can assess whether the differences in social capital outcomes between groups are because of country effects. In order to identify whether the specific measures of generosity and universalism reduce social capital inequalities between SEGs (the aim in chapter six), we can add a cross-level interaction to the model. The aim here is further to reduce the unexplained variance of U_{oj} and U_{1j}. The introduction of the Z_1 term indicates that part of the variability in the intercept and slope is now explained through Z. The product of this interaction between $X$and Z is a cross-level interaction as it involves an explanatory variable from both the individual and country levels.

$$Y_{ij} = \beta_{0j} + \beta_1 Z_{1j} X_{1ij} + \sum_p \beta_p X_{pij} + \sum_q \beta_q Z_{qj} + U_{1j}x_{ij} + U_{oj} + R_{ij} \quad (3.27)$$

Y_{ij}= dependent variable, X_1=individual level variable allowed to vary across countries, Z_1= country-level variable, varies across groups, X_p= individual explanatory variables, Z_q= country-level explanatory variables, β_0= coefficient for constant (intercept), β_1= coefficient for individual-level variable allowed to vary across countries, β_p= coefficient for individual-level explanatory variables, β_q= coefficient for country-level explanatory variables, U_{0j}, U_{ij}: group-level residuals, R_{ij}: individual-level residuals.

The importance of applying multilevel analysis in this thesis is that the approach specifically allows us to address the research questions whilst acknowledging the nature of our data. In order to ensure that one can be confident in the model results, consideration also needs to address estimation procedures.

3.4.5 Estimation and sample size

There are two main estimation methods for estimating parameters under the assumption of normal distribution - maximum likelihood (ML) estimation and restricted estimation (REML). The regression coefficients themselves differ little with respect to the estimation approach but vary in terms of the variance components. Simulation studies indicate that ML estimation of the variance components can have a downward bias compared to the REML estimator. When the sample size is large, which the literature indicates as ≥ 50, the type of estimator applied has no consequence (Snijders and Bosker 2012; Mass and Hox 2005). There is no specified fixed sample size; reviews of guidelines suggest 30 groups are required to ensure unbiased estimates (McNeish and Stapleton 2014), while others specify a minimum of 20 clusters (Snijders and Bosker 2012) for reliable results.

Although we have large sample sizes at the individual level, our level 2 sample size is restricted to the number of countries within the data set and the geographical area of Europe. With 29 countries, the sample size is within the acceptable range for ML estimation. REML accounts for the uncertainty in the fixed parameters; it is more suited to estimating the variance components when the number of groups is limited (Raudenbush and Bryk 2002; Snijders and Bosker 2012). With this in mind, I apply both estimation procedures to ensure confidence in the results.

It is not possible to perform log-likelihood tests when the parameters have been constrained, as in the case of REML estimation; ML estimation will assess the significance of the differences between models, whilst REML estimation will assess the final model. Comparison of the final models between estimation procedures should ensure confidence in the findings and draw our attention to any potential differences that may arise.

3.5 Conclusion

This chapter has broadly set out the data and methodology that will allow us to explore the research hypotheses and address the social capital welfare state relationship. In the next chapter, the focus is on the dependent variable. Here I specifically employ CFA to provide theoretically driven and empirically substantiated latent variables for further analysis.

4 Dependent variable

This chapter provides the theoretical and empirical work required to establish a reliable measurement of social capital. The work undertaken here will then inform the subsequent analyses, ensuring that the hypotheses test what they purport to measure. As our conceptual model illustrated in the literature review, social capital is a multi-dimensional construct and cannot be reduced single composite indicator. Social capital is also inherently abstract and requires subjective interpretation to translate into operational measures (Narayan and Cassidy 2001:61). It is critical to ensure that there is sound reasoning behind the operationalisation and crucially that the operational measures themselves are statistically robust. Based on existing theory and empirical operationalisation, this chapter sets out the context for improved measurement before applying the methodology of CFA. The aim is to arrive at a position where we address the importance of social capital dimensionality while explicitly acknowledging social capital as a latent construct. This attention to the mechanisms and measures of social capital is of central importance to providing a coherent model for social capital. I begin by introducing existing approaches and operationalisation.

4.1 Existing approaches

As we illustrated in the literature review, there are multiple accounts of social capital. Some studies focus on the individual level, others at the collective level, while some combine both properties for measurement. Some studies focus on single dimensions of social capital, some include all dimensions, and others fall somewhere in between. While there are often substantive reasons for selecting some dimensions over others, this does not always help clarify the concept and interpret its relationship to the welfare state. When we factor in the various operationalisation, the comparison becomes further problematic.

The conceptual framework specifies the need to account for dimensionality, which does have some support within the literature. Van Oorschot et al. (2006), who explore the social determinants of social capital within the EU, focus on the three dimensions of networks, trust and civism. Networks are operationalised through two dimensions: i) the number of active and passive participation voluntary organisations individuals' are part of, ii) the amount of time spent with primary relations of family and friends. Trust is measured through the level of trust in i) welfare state institutions and ii) generalised trust in others. The third dimension is based

on civism and relates to the i) trustworthiness of civic commitment and morality, along with ii) individuals political engagement.

Kaasa and Parts (2008) also observe the individual-level determinants of social capital from a dimensional perspective. They differentiate between the structural dimension: informal and formal social capital and the cognitive dimension: generalised and institutional trust. Informal networks are measured through i) frequency of spending time with friends and ii) the importance of spending time with friends and colleagues. Formal networks have an active and passive distinction measured by i) organisational membership and ii) unpaid voluntary work in associations. Trust is measured through i) generalised trust in others, ii) confidence in institutions (police, parliament and press).

Oorschot and Finsveen (2010) provide a dimensional approach to exploring social capital inequalities within European welfare regimes. Networks are distinguished by i) active participation in unpaid voluntary organisations and ii) passive participation, providing a count of organisational membership. Trust is identified through i) interpersonal (trust in others) and ii) institutional measured through confidence in police, parliament and civil service. The final dimension of social norms addresses trustworthiness through four questions relating to acceptable moral behaviours. These papers highlight the prospect of addressing the complexity of social capital. Employing a dimensional approach allows us to understand the specific relationship to the welfare state.

What these studies also have in common, along with a large number within the literature, is the operationalisation of measures. Gelissen et al. (2012) operationalise the social capital dependent variable access to resources in informal networks through eight questions in the 2004 Eurobarometer survey and sum the responses providing a scale of 0 to 8. They provide a Cronbach's alpha for the scale, suggesting it is a valid construct but give little detail. Koster and Bruggeman (2008) use how often they socially meet with friends, relatives or colleagues on a scale ranging from 1 (never) to 7 (several times per week) as their dependent variable. Scheepers et al. (2002) employ two questions on the frequency of contact with family and friends, with frequencies ranging from every day to never, providing a simple scale.

Carmo and Nunes (2012) operationalise informal networks through how often do you meet socially with friends, relatives or work colleagues? 'Compared to other people of your age, how often would you say you take part in social activities- each providing a scale. Formal networks

through whether they were or had ever been a trade union member or similar organisation, and are you a member of any political party? A scale is created for trust based on three questions that have a high alpha score. Halman and Luijkx (2006) employ factor analysis to analyse four dimensions of institutional and interpersonal trust, along with social activism and formal engagement. Although they provide little information on the reliability of the indicators, other than some form of factor analysis was carried out, and scores applied. It does acknowledge the dimensional approach required to deal with the uncorrelated measures that a single scale would ignore.

Kääriäinen and Lehtonen (2006), distinguishing between bonding, bridging, informal support, and generalised trust again provide summed scales as operationalised dependent variables. Frequency of contact with family and friends, visiting family members, and the number of friends are initially scaled to 1 to 8 then summed. Seven questions on participation in voluntary organisations with categorical responses are assumed to be scale then summed. The same for informal support with 6 imposed scaled summations. Finally, generalised trust is a reverse coded Likert scale that is then summed for the three questions. All are categorical response categories have been given the equivalence of a scale (given the limited number, whether this can be considered a scale is perhaps open to question) then summed to create a single indicator of each dimension for multilevel analysis.

What we observe from these studies is an apparent attempt to generate a variety of coherent scales from multiple indicators. Whilst this is a sensible approach and theoretically informed, it is often difficult to observe the construct validity of these measures. There are some references to alpha scores but provide little justification beyond the practicality of data reduction. Data reduction in itself is not a limitation. Given the nature of the topic and the potential operationalisation of a vast number of variables, it is an appropriate solution. What is often overlooked is the fact that social capital is inherently a latent construct. If we take social capital to imply a potential resource that one can access through network structures, then proxies such as the frequency of contact are themselves not direct measures of social capital. It is not the summation of the observed variables, but what they imply that is important. What this means in a practical sense is ensuring that the theory which led to the dimensional construct should then be empirically substantiated.

This is the position that Kaasa and Parts (2008) follow in exploring the individual-level determinants of social capital with the 2006 World Values Survey, taking 12 indicators to infer

five dimensions (adding norms alongside informal, formal institutional and interpersonal). They employ CFA to test the convergent and discriminate validity of the latent variables, confirming reliable operationalisation of each dimension, using the factor scores for cluster analysis. Guillen et al. (2011) also utilise the SEM methodology to explore social participation in the 2002 ESS. Their social participation index is derived through informal, formal and trust latent variables - providing a statistically reliable composite score.

4.2 A considered approach

As previously indicated in the literature, the operationalisation of social capital comes in a variety of ways, with varying degrees of success. The outcome of which has led to an inconclusive picture of the welfare state's relationship to social capital. Part of this difficulty is resultant from theoretical approaches that have looked to operationalise social capital without entirely situating it within a comprehensive framework. Another issue is due to the selectivity of variables or aspects of social capital that often provide an incomplete picture. Here dimensions refer to social capital as a whole, which often cloud the welfare state-social capital debate. Such incidences are often influenced by data availability that restricts the ability to tackle the complexity of social capital fully. Within the context of these two positions, the methodological difficulties become apparent. Situating the dependent variable within the context of theory and related measurement also requires us to apply the corrected methodological tools that are both justified and rigorously assessed.

To move the discussion on and provide some improved measurement of social capital that accounts for its multifaceted nature, I follow a strict multi-dimensional approach—focussing on social capital as informal and formal networks (structural), alongside institutional and interpersonal trust (relational). It is essential to bear in mind that as social capital is not directly observable, there is no simple metric that one can offer to account for the possession of social capital. In order to capture the presence and relational nature of capital, we aim to move beyond the observed to the unobserved. The idea of assessing latent variables is to examine the underlying data structure and empirically test our theoretical propositions. The statistical assessment and representation of our theoretical constructs within the data are obtained through confirmatory factor analysis (CFA).

How we include a broad range of indicators to represent the specific dimensions is a central aim of this chapter. Here I rely on the application of CFA to ensure that both the theoretical and empirical conceptualisation of social capital. Before we begin assessing indicators and models, it is worth showing some of the preparatory work that formed the basis of the CFA approach. [Specifically acknowledging the correlated nature of the observed indicators].

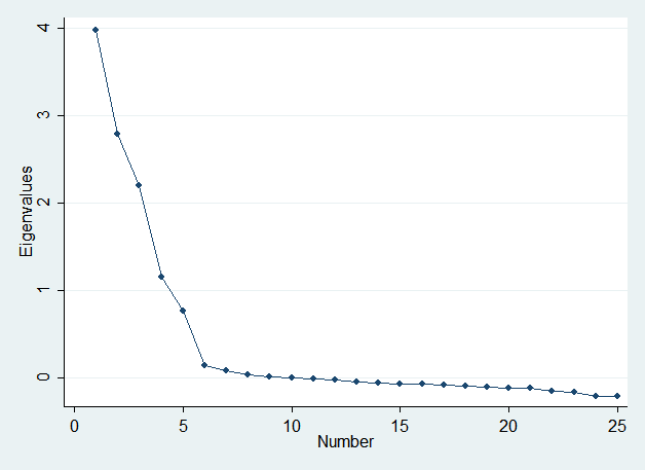
4.3 Preliminary data correspondence

Although we commonly see summative indexes within the literature as a logical approach to data reduction, the relationship between the variables is not always singular. Uncorrelated variables are combined when they might be better suited to factor analytical approaches. In order to confirm the viability of the CFA approach, some initial analyses assessed the suitability of the data structure and the relationship between the variables.

Correlation tests provided a quick clarification on the nature of the expected relationship between the variables. (See appendix C). Except for the institutional trust variables, which were reasonably correlated, all dimensions showed only a slight correlation with each other. The implication here is that simple counts might not adequately account for the composition of different observed variables as a single measure. Rather than summation as a proxy for social capital dimensions, factor analysis may provide greater insight into understanding the representation of indicators within the data. Specifically, the position taken in this thesis is the theoretical distinction of where social capital resides. It is found within the networks and not directly observed by adding up the number of networks. The summation is an inadequate proxy of an inherently latent construct, such as social capital.

Exploratory factor analysis confirmed the expected dimensional separation of the social capital variables. Included are all those potential variables related to the social capital concept discussed in the operationalisation section. The scree plot below provides a graphical representation of the number of possible factors for extraction within the dataset. The separation of factors found here reflects the dimensionality of social capital; voluntary, political and social participation, along with trust and informal support. [Note: in this initial analysis, the sixth factor in the graph is mainly attributable to the religious participation indicator].

Figure 4.1: Scree plot of potential social capital factors



With the background for an alternative strategy of data reduction laid out, it is vital to consider the operationalisation of the variables themselves. It is not a simple fact of specific variables being available; their inclusion must also be theoretically justified.

4.4 Operationalisation

Returning to social capital theory, we understand social capital as the potential resources derived through the networks of relations (Bourdieu 1986) and the trust that resides within them, which is both individual and collective in nature (Coleman 1988). Theoretically and empirically distinguished by the structural (formal and informal networks) and relational (interpersonal and institutional trust) forms of social capital. I visit each dimension, in turn, drawing attention to both the conceptual and empirical clarification for model specification.

4.4.1 Informal networks

The majority of the social capital literature follows the premise that if a network exists, it can represent the accrual of social capital. However, whether questions relating to the frequency of contact [the most widely used and accepted proxy] measure an individual's social capital remain contested (Portes 1998).

Alternatively, Finsveen and van Oorschot (2008) identify how we can better understand social capital through access to actual or potential resources derived through network membership rather than the network itself. It is possible to provide a coherent approach for operationalising social capital, improving both measurement and representation. Here the onus is whether one can obtain or gain access to a resource when required. According to their networks, this approach understands that individuals have multiple needs, which may or may

not be met. By explicitly addressing access, it conceptually adheres to our understanding of social capital as an individual available resource. From a theoretical perspective, it remains in line with the individual level approach. Where 'the aggregate of the actual or potential resources are linked to possession of a durable network' (Bourdieu, 1986:249). This idea of the 'potential resource' adopted in this position explicitly accounts for an individual's social capital.

Within the chosen data set, specific questions related to our distinction of access to potential resources from informal networks, five specifically relating to individuals' ability to get help and support. If you needed to, from whom would you get support; i) help around the house when ill ii) advice about a serious personal or family matter iii) help when looking for a job iv) someone to talk to if they were feeling a bit depressed v) able to urgently borrow money if they needed to. The response categories present an apparent distinction between formal and informal support provision (Table 4.1). In order to capture the 'crowding-out' effect, I created a dichotomous variable that combined the family and friends responses to indicate access to informal social capital. The response categories institutions and nobody was combined to indicate no access to informal social capital (Table 4.2). The distinction made here is that the implied 'crowding-out' effect of informal social networks is from both the displacement of social support provided through formal arrangements and from the wider detrimental impact the welfare state has on social ties, as a result of the weakened moral obligations to one another (Wolfe 1989).

The obvious limitation with this approach is that there is a slight bias towards observing crowding-out by placing institutions in the no access category. Those who respond to receiving help and support through institutions cannot also report receiving help from family or friends. This limitation is inherent in the structure of the questionnaire. It does, however, still provide an opportunity to observe access to resources in informal situations, which is our primary aim for measuring informal social capital.

Table 4.1: Response breakdown of access to informal networks

Response category	Help when ill		able to get advice		help looking for a job		Support when depressed		Borrow money in an emergency	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Family	30,800	82.10	26,764	71.34	10,155	27.07	22,198	59.17	25,350	67.57
Friend /neighbour	4,305	11.47	7,880	21.00	8,307	22.14	11,987	31.95	4,325	11.53
Institution /service provider	1,399	3.73	1,395	3.72	7,616	20.30	1,017	2.71	3,395	9.05
None	775	2.07	1,118	2.98	7,119	18.98	1,864	4.97	3,383	9.02
Missing	21	0.06	32	0.09	982	2.69	62	0.17	132	0.36
DK	217	0.59	319	0.87	3,268	8.95	379	1.04	927	2.54
N	37,517	100	37,517	100	37,517	100	37,517	100	37,517	100

Table 4.2: Breakdown of recoded informal social capital

Variable	No		Yes		*Missing*	Total
	N	%	*N*	%	*N*	
Help when ill	2,174	5.83	35,105	94.17	238	37,517
able to get advice	2,513	6.76	34,644	93.24	360	37,517
help looking for a job	14,735	44.39	18,462	55.61	4,320	37,517
Support when depressed	2,881	7.77	34,185	92.23	451	37,517
Borrow money in an emergency	6,778	18.59	29,675	81.41	1,064	37,517

What is noticeable from the initial descriptive statistics is the large presence of informal social capital; over 90% of individuals report access to help when ill, advice and support, while only 55% can find help looking for a job, and 81% can borrow money. The difference in access to jobs could indicate the presence of crowding-out, where statutory programs have created a reliance on the welfare state, reducing the importance of informal networks (20% relying on institutional support to find a job). Equally, it may highlight potential inequalities inherent within network structures where some networks provide access to job prospects, and others do not (Lin 2000). Variation in borrowing money could be influenced by access to payday lending schemes and the potential imperative to avoid the social cost of borrowing from family and friends for money (Lusardi et al., 2011). 11.5% of responses are missing for the variable help finding a job, which is noticeably higher than the other variables. Whether this results from deciding between the response categories or not identifying with the need for assistance in finding a job is difficult to determine, as 3,268 (9%) replied 'don't know'. There is a similar observation with the borrowing money question, where 927 (2.5%) of respondents are unsure

whether they can access money in an emergency. Although there is some potential variation in the two variables able to borrow money and help finding a job, all situations of help are considered an essential resource that individuals can potentially access and will be included in the CFA model.

Table 4.3 provides the fit statistics for the specified informal network models containing all potential access to resources indicators.

Table 4.3: Informal networks CFA model results

Measure	Model 1[a]
(χ2)	94.893
df	5
P-Value	0.000
RMSEA (90% C.I)	0.022 (0.018 0.026)
CFI	0.996

[a]5 indicators

If we recall, the researcher is assisted in interpreting a reliable model based on four key measures: the chi-square and p-value, the RMSEA and the CFI. Although there is no definitive agreement on interpretation, the literature indicates that the initial assessment of a model should primarily be one of statistical significance. Support for the model is understood as a failure to reject the null hypothesis or the absence of statistical significance ($p \geq .05$) (Kline 2015). A higher p–value indicating the specified model is statistically different from the null specified model. As we can see from the table, there is no statistical difference from the null, suggesting an early limitation.

However, obtaining a p-value may not always occur [owing to sample sizes] and does not guarantee the internal consistency of a model fit (Barrett 2007; Kline 2005). Here measures of approximate fit provide further clarification. Inspecting the model results, we do find agreement in the global fit statistics with RMSEA below .05 and the CFI above .90, suggesting that the model is plausible and forms a coherent latent variable. Ensuring that the global fit statistics are valid and not hiding miss-specification, an assessment of local fit is required. Here particular attention is given to the residual correlation/covariance matrix to observe potential errors. As indicated in Table 4.4, there are no apparent problems between the variables with correlations below .10 (Kline 2005).

Table 4.4: Model 1, correlation residuals

Indicator	Ill	Advice	Job	Depressed	Money
Ill					
Advice	0.011				
Job	-0.027	-0.013			
Depressed	-0.007	0.033	-0.027		
Money	0.013	-0.041	0.039	-0.017	

One final check we can make is an assessment of the modification indices. Modifications without prior theoretical direction in an attempt to reduce the chi-square are prone to spurious findings. In our case, the model proposed selecting all five variables on the grounds of access to a potential resource; yet acknowledged the potential for some variation with the money and job indicators. The modification indices do indeed suggest a path between these two variables. Considering the original variables, one could conceive a potential difference, where one resource is more practical (money and job) and the other is perhaps more supportive (ill, advice and depressed). The resource variables may relate in terms of their access. Although all indicators conform to a single latent variable, their specification could be made more specific. With this in mind, a further model is illustrated, providing a path between money and job- the results presented in Table 4.5.

Table 4.5: Informal networks CFA modified model result, specified covariance between job and money

Measure	Model 2[b]
(χ2)	28.158
df	2
P-Value	0.000
RMSEA (90% C.I)	0.019 (0.013 0.025)
CFI	0.998

[b] Job with money

The second modified model confirms a slight improvement in the χ^2 compared to the first model (Table 4.4). Employing a chi-square difference test, we can assess whether this improvement is statistically different from the previous model. The chi-square difference test (see Satorra and Bentler 2010) examines whether the restrictions of the nested model compared to the specified model is significantly worse. This informs whether the proposed or

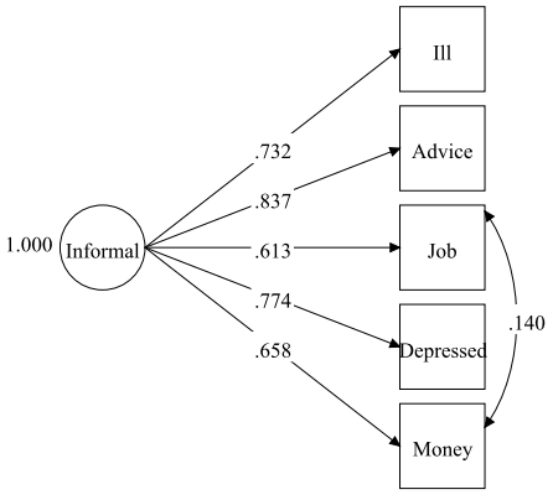
original model is retained (Muthén and Muthén 2017). The test results confirm that model 1 is a worse fit, and the modified model should be retained.

Table 4.6: Chi-square difference test against model 2

χ2	Model 1
Value	56.63
df	1
P-value	0.000

Having performed a robust statistical assessment of the model composition, the second model with the specified pathway between job and money is retained. This model includes all access to informal resource variables; [help around the house when ill (I1), advice about a serious personal or family matter (I2), help when looking for a job (I3), someone to talk to if they were feeling a bit depressed (I4) and able to borrow money in an emergency (I5)]. Figure 2 provides a graphical representation of the latent variable model used to inform the construct of 'informal social capital'.

Figure 4.2: Informal social capital latent variable model (CFA)



4.4.2 Formal Networks

The second network dimension focuses on the potential resources gained through formal networks. Our theoretical distinction understands formal networks to be concerned with those resources gained outside the informal structures of friends and family. The resources found in

the broader networks of participation, which represent the potential resources derived from access to wider network structures (Lin 2001; Li et al. 2005).

There are no obvious questions within the EQLS that enable us to measure the specific resources one obtains from formal networks - an endeavour beyond most wide-reaching surveys. There are, however, questions relating to the formal social environment where participation takes place. Much like informal social capital, it is the potential access to resource accrual within the specified network that we aim to capture. Within the literature, we often observe the frequency of participation in various formal voluntary organisations, social activities and political associations (Kasa and Parts 2008; Kääriäinen and Lehtonen 2006; Oorschot et al., 2006), which (are thought to) indicate the presence of 'formal' social capital.

Participation in civil society provides a straightforward means of connecting individuals. However, are all associations the same? What constitutes a coherent measurement of formal social capital? In addition, how does it relate to the welfare state? Consideration will be given to each of those variables available within the EQLS that relate to the formal social environment.

4.4.2.1 Frequency of participation

I begin with consideration to the first four available questions; how frequently do you? i) Attend religious services, apart from weddings, funerals or christenings ii) Use the Internet other than for work iii) Take part in sports or physical exercise iv) Participate in social activities of a club, society, or an association. The response categories are 1) Every day or almost every day, 2) At least once a week, 3) One to three times a month and 4) Less often/never.

The frequency of attendance in religious services links positively with membership in religious organisations, yet attending religious services on its own does not seem to be conducive to civic activity (Norris and Inglehart 2004). When we consider formal networks, we aim to move beyond the strong homogenous ties of informal networks, which literature describes as 'bonding' social capital. To the more heterogeneous wider 'bridging' networks understood as formal social capital. In this sense, the closed network of religious activity whilst a clear source of individuals' social capital does not ascribe to the idea of bridging. Rather, it represents a closed network of belonging- indicating perhaps the socialised environment for social capital rather than a measure. With this in mind, the decision was made not to include the variable relating to religious participation.

Accounting for online social networks would be of great value as they provide a prominent area for gaining resources, particularly in the context of understanding modern forms of participation. The question relating to online presence, whilst asked in relation to a subset of four questions on participating, is itself a little vague. Is shopping online the same as using social media or being engaged in an online chat room? The question provides no real way to distinguish between participating and what is just being on the internet. Although some studies (Portela et al., 2013) have included such a measure, it is rather difficult to see how it can account for social capital and is excluded.

The third question asking respondents how often they participate in sports and physical exercise provides another difficulty. Whilst sports and exercise are essential for well-being, distinguishing between individual pursuit and active participation in formal networks is difficult to ascertain. It is only through membership to the group or network that provides the opportunity to access resources through social connections. It is excluded from the analysis as this does not meet the criteria.

The fourth question is more specific to participation in formal associations asking how often individuals participate in social activities, clubs and associations and would indicate some frequency of active participation. Consideration to including this indicator alongside the final voluntary participation model was empirically tested. Although it did prove to be a viable model suggesting some coherence to a single latent variable, the more parsimonious model showed a significantly better fit within the data and was retained.

In summary, except for the fourth question, the frequency of participation variables available within the data set, whilst important civic participation indicators were considered inadequate for measuring social capital. [It is vital to ensure that the data used to measure formal social capital is both conceptually and theoretically sound.]

4.4.2.2 Voluntary participation

The questions relating to active voluntary participation are perhaps the most specifically related to the position of crowding-out. It is here where the argument for the detrimental effects of substitution is likely to be most realised, as the formal functions of the state would intrude on the desire and ability to volunteer. Conversely, it is also where we expect the role of welfare provision to be positively related to participation levels - providing support and access to network structures. There are five questions broadly covering formal participation in

voluntary associations. How often do you participate in i) Community and social services ii) Education, cultural, sports or professional associations iii) Social movements or charities iv) Political parties, trade unions v) Other voluntary organisations. With response categories: 1) Every week 2) Every month 3) Less often/occasionally 4) Not at all.

Given the compulsory participation of trade unions membership in some EU countries [such as Denmark, Finland, Sweden and Belgium] where trade unions are responsible for administering unemployment or disability-related benefits (Oorschot and Finsveen 2009), there could be a distortion to the reported rates. Whilst there is clear potential for accessing resources through trade union membership, its relationship to the specific crowding-out effect of the civic sphere could theoretically be considered distinct from the other types of voluntary organisations. As compulsory membership is likely to add bias to the understanding of formal participation between countries, it is excluded from the analysis. [As a sensitivity test, I compared a model of the four voluntary organisations with the inclusion of trade unions as a single latent variable. The results showed the viability of the trade union model, but statistical reliability confirmed the selection of the more parsimonious model appropriate].

Table 4.7 Response breakdown of voluntary organisations

Response category	Community volunteering		Educational, cultural or sports unpaid work		Charities or social movements		Other voluntary	
	N	%	*N*	%	*N*	%	*N*	%
Every week	1,423	3.79	1,765	4.70	399	1.06	599	1.60
Every month	1096	2.92	1,672	4.46	823	2.19	856	2.28
Less often/occasionally	2,984	7.95	3,256	8.68	2,967	7.91	2,328	6.21
Not at all	31,774	84.69	30,598	81.56	33,094	88.21	33,415	89.07
Missing	46	0.13	42	0.12	48	0.13	59	0.16
DK	193	0.53	182	0.50	185	0.51	257	0.70
N	37,517	100	37,517	100	37,517	100	37,517	100

As the breakdown of voluntary organisations in Table 4.7 shows, the level of those not participating is considerably high, and almost a reversal of the informal networks where between 81% and 89% do not volunteer. Considering the centrality of civic networks to Putnam's social capital theory, one might have expected participation levels to be slightly higher.

With the four variables of voluntary associations decided upon, how should they be operationalised? Bourdieu (1986) emphasises the volume of social capital that is important for individuals to get ahead, as is the amount of participation (Wallace and Pichler 2009). It is also possible that multiple affiliations can have a moderating and cumulative effect on social capital, where multiple overlapping networks increase the probability of horizontal networks that bridge the gap between diverse backgrounds. This wider effect increases the potential for interaction, promoting trust and civic engagement (Selle 2003). Sarrancino (2010) suggests we should consider intensity and scope as different aspects of participation; intense involvement whilst fostering interest and support in the network may create barriers to outsiders and narrow the scope of the network. Within this in mind, it seems appropriate to account for participation that takes place across all associations with the cumulative effect of multiple memberships.

Operationalisation within the literature is primarily concerned with counts of voluntary organisations. Oorschot et al. (2006) construct two count scales of the number of voluntary organisations individuals participate in and the importance of spending time with friends on a scale of 1 to 3. Sum scales are often derived from the frequency of categorical responses across any available voluntary participation questions (Guillen et al., 2011; Kääriäinen and Lehtonen 2006). However, there are reasons to suggest that giving categorical response categories the equivalence of a scale may not be the most appropriate form of operationalisation. Given the limited number of responses categories, typically 1 to 4, whether this represents a scale is perhaps open to question. Equally, there is a difficulty in inferring that once a week is twice the value of occasionally to which the scale implies. Creating a single indicator of sum scores in this way may provide a misleading picture of the value and meaning attached to represent social capital.

Another issue with directly operationalising frequency is that it ignores potential changes over time. The amount of time one can dedicate to volunteering could fluctuate. For example, periods of unemployment, changes in family circumstances, health-related issues, or even wider factors such as a recession are likely to impact participation levels. Indeed income reduction is related to a decline in participation (Ferragina et al. 2013). More specifically, how does a decline in the amount of volunteering relate to social capital when the voluntary activity remains constant, yet the frequency of participation changes?

There is a tendency within the literature to present greater participation with the increased accrual of social capital. The actual interest is in access to the network and the potential resources derived through generating broader and more diverse networks. Does someone that volunteers once a week compared to once a month increase their resource potential? Alternatively, is it just a case of having access to the association that is essential for resource acquisition? Does it make sense to infer, if someone can no longer volunteer every day but can instead accommodate weekly or monthly participation, this mirrors a reduction in the level of social capital they possess? As we infer stability from generous replacement rates that enable individuals to maintain networks. It seems appropriate to account for whether they are present rather than their frequency.

Therefore, the preference is to create a dichotomous variable of whether someone volunteers or not, as this most closely represents the idea of network access and the potential fluidity in maintaining networks. The second consideration is how to group the dichotomous indicator. The response categories every week and every month are indicative of the potential presence of social capital. Does the response category occasionally also elicit the same outcome and reliably inform the same intent? Occasionally perhaps indicates more of a passive relationship to volunteering rather than a commitment to a voluntary network of associations. However, potential access to the network remains.

In order to ensure reliability in the preferred operationalisation, I conducted an empirical assessment of each variation. The results of the CFA models are in Table 4.8. Model 1 is our theoretically driven model that operationalises the dichotomous variable of access as every week and every month. The second model includes the response of occasionally into the dichotomous indicator of access. The third model applies a scale to the response categories in line with the existing literature. The variables have been reverse coded, 4 indicating participating every day and 1 as not at all.

Table 4.8: Voluntary organisations CFA model fit comparison

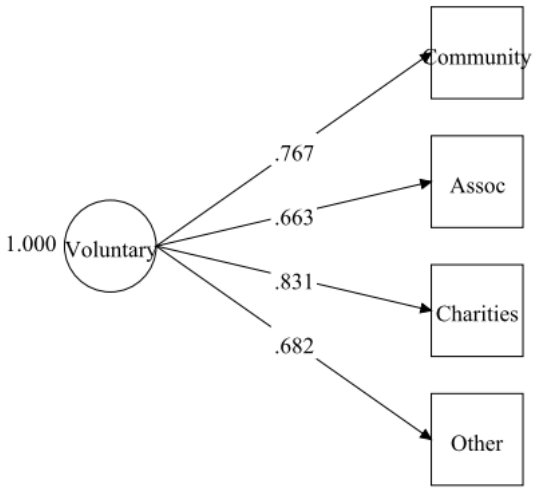
Measure	Model1[a]	Model2[b]	Model3[c]
(χ2)	0.884	10.998	5.761
df	2	2	2
P-Value	0.643	0.041	0.056

RMSEA	0.000	0.011	0.007
(90% C.I.)	(0.000 0.008)	(0.005 0.018)	(0.000 0.014)
CFI	1.000	1.000	1.000

[a]Binary (occasionally coded to 0), [b]Binary (occasionally coded to 1), [c]Scale (1 to 4)

Empirically, all models are valid, which confirms reliability in the composition of the voluntary latent variable itself. There is greater statistical support for the first model, with a noticeable p-value and lower χ^2. The theoretical distinction in terms of access to the network (rather than frequency) and specificity in actively participating confirm that the chosen preference for operationalisation is statistically informed. The final latent variable for voluntary participation is operationalised in line with the first model, comprising of community and social services (V1), education, cultural, sports or professional associations (V2), social movements or charities (V3) and other voluntary organisations (V4) (Figure 4.3).

Figure 4.3: Formal voluntary participation latent variable model



4.4.3 Political participation

As previously indicated, the EQLS also contains questions relating to political participation. Though such questions often represent civil society indicators, the approach taken here is the access to potential resources gained from the formal social environment. Like voluntary organisations, which offer the opportunity of a wider network structure, so too political participation provides a similar potential for accessing resources. I begin by addressing the suitability of the questions, which are then empirically tested. Following model selection, I also

confirm the reliability of a single formal networks model to understand whether there is a coherence to the construct of the formal social capital.

The four questions relating to political participation are: 1) attended a meeting of a trade union, a political party or political action group, 2) attended a protest or demonstration, 3) signed a petition, including an e-mail or online petition and 4) contacted a politician or public official (other than routine contact arising from the use of public services). The response category is a binary yes or no. Here the category structure of a binary indicator is maintained for the operationalisation and assessment of the latent variable (Table 4.9). As the responses highlight, the level of political participation is relatively low, particularly for protesting (5%), while signing a petition is the highest at 15%, arguably requiring the least active intent.

Table 4.9: Response breakdown of political participation

Variable	No		Yes		*Missing*	Total
	N	%	*N*	%	*N*	
Meeting	34,143	91.77	3,062	8.23	312	37,517
Protest	35,348	95.02	1,854	4.98	315	37,517
Petition	31,454	84.72	5,672	15.28	391	37,517
Contacted	34,500	92.78	2,685	7.22	332	37,517

The first two questions do specify the active notion of being present [by 'attended']. This does provide some indication of the potential to access social capital through the formal social environment and is in line with the notion of active participation (Oorschot and Finsveen 2010; Putnam 2000). Singing a petition may be considered somewhat limited as a resource, particularly in the context of active participation. Although, contacting a public official could create an environment to access information. Equally, such forms of contact may be a bridge to wider network structures. Perhaps this is where we observe the distinction between the two forms of participation - i.e. volunteering and accessing information. Remember, our position for networks is relational – the potential resources derived from network structures.

Table 4.10: Political participation CFA model results

Measure	Model 1
($\chi 2$)	192.043
df	2
P-Value	0.000

RMSEA (90% C.I)	0.050 (0.045 0.057)
CFI	0.985

Table 4.10 provides the model fit indices for the political latent variable, containing all four variables. The χ2 and p-value indicate that statistically, there is no difference between the null and specified model, though the CFI statistic indicates the model is reliable. An RMSEA below .08 is considered acceptable within the literature, though some suggest a stricter .05 may be more appropriate. Inspection of the residual correlation matrix (Table 4.11) indicates a slight correlated error between protest and contacting an official (.111), which is present within the modification indices. There is perhaps a possible relationship here between protesting and contacting public officials. In order to test this association, a further CFA model was explored (see table 12).

Table 4.11: Political participation CFA, residuals for covariances

	Meeting	Protest	Petition	Contacted
Meeting				
Protest	0.012			
Petition	-0.060	0.043		
Contacted	0.057	-0.111	0.010	

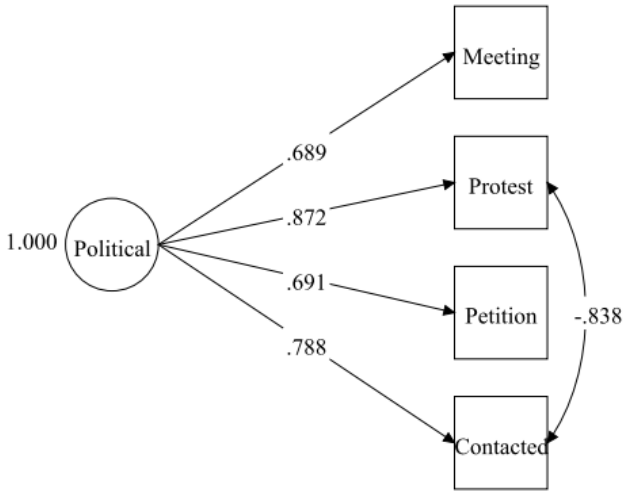
Table 4.12 provides the modified model with covariance specified between protesting and contacting an official. There is an improvement in fit across all global measures. Although there is no statistical difference from the null model, we have accounted for the internal consistency at the local level. The final model to inform the political participation latent variable is represented in figure 4. It comprises the four variables: attended a meeting of a trade union, a political party or political action group (P1), attended a protest or demonstration (P2), signed a petition, including an e-mail or online petition (P3) and contacted a politician or public official (P4), with the specified covariance between protesting and contacting an official.

Table 4.12: Political participation CFA modified model

Measure	Model 2[a]
(χ2)	15.863
df	1
P-Value	0.001
RMSEA (90% C.I)	0.020 (0.012 0.029)
CFI	0.999

[a]specified covariance protest and official

Figure 4.4: Political participation latent variable model with specified covariance



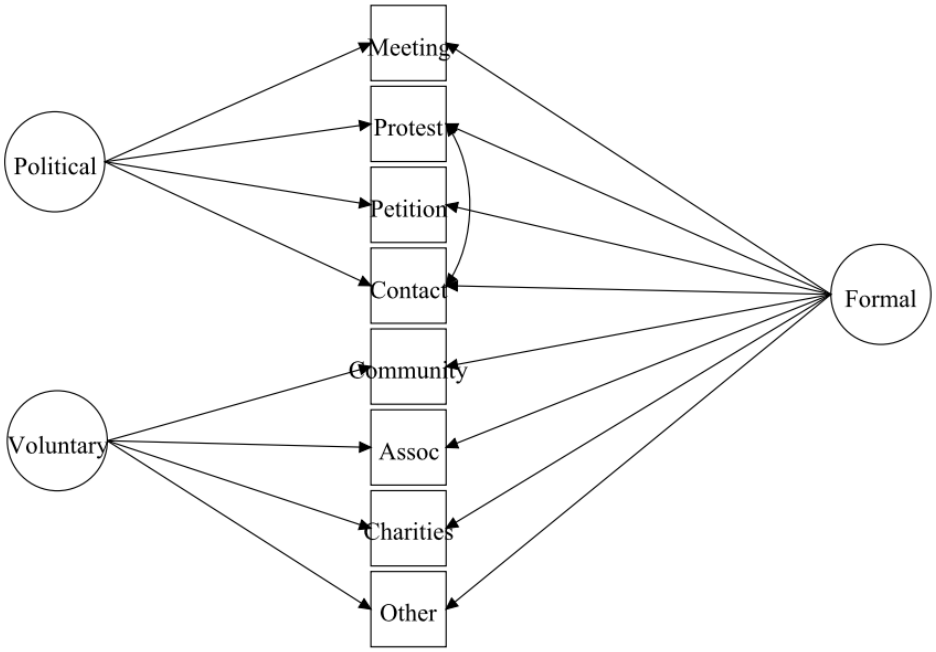
In order to confirm the notion of formal social capital as a multi-dimensional construct consisting of voluntary and political participation, I compare a bi-factor CFA model to a single CFA model (Table 4.13). In model 1, all formal participation variables from the previous voluntary and political models are included under a single latent variable - the fit statistics indicating some model miss-specification with the CFI and RMSEA beyond the 'considered' thresholds. Model 2 shows the fit statistics of the bi-factor model (Figure 4.5) that acknowledges the separation of two latent variables. There are two points of interest here. The first is that the second model shows an improvement over a single latent variable, confirming the importance of dimensionality. The second is that the bi-factor model statistically shows a good fit. This fit implies a coherence to the understanding of formal social capital in the form of political and voluntary participation.

Table 4.13: Voluntary and political latent variable bi-factor model

Measure	Model 1[a]	Model 1[b]
(χ2)	1855.552	42.321
df	14	11
P-Value	0.000	0.000
RMSEA (90% C.I)	0.059 (0.057 0.062)	0.009 (0.006 0.012)
CFI	0.886	0.999

[a]Single latent, [b]Bi-factor

Figure 4.5: Formal social capital bi-factor graphical representation



4.4.4 Trust

The second aspect of the social capital construct is trust. Our theoretical position views trust as a relational phenomenon that is both individual and collective, created in the interaction between individuals and institutions (Frederikson 2014). Here we understand the critical importance of trust, both generated from networks and informing the environment of associations. The structure of trust resonates at an interpersonal level, as a form generalisable to all individuals. At the intuitional level, by informing 'trustworthiness of the social environment' (Coleman 1988), where institutions generate the conditions and climate of trust necessary for the development and emergence of social capital.

4.4.4.1 Institutional Trust

Within the literature, we often observe institutional trust through confidence in institutions, operationalised through sum scales of low to high trust from welfare state related variables, such as parliament, civil service, the social security system and the healthcare system (Oorschot et al., 2005; Oorschot et al., 2006). As sum and factor scores of confidence in societal institutions; the police, press and parliament (Oorschot and Finsveen 2010; Kaasa and Parts 2008). Through trust in government institutions, such as parliament, the legal system, the police, politicians, the European Parliament and the United Nations, creating a single high to

low factor score (Halman and Luijkx 2006). Some authors use all available institutional variables to generate factor scores for analysis (Chung et al., 2014). These examples highlight that there is no fixed operationalisation of institutional trust within the literature; often, it depends on the available data and the specific theoretical position.

Within the EQLS, six variables within the dataset relate to trust in institutions. These questions ask 'how much you personally trust each of the following institutions; on a scale of 1 to 10, where one means that you do not trust at all, and ten means that you trust completely; i) Parliament ii) The legal system iii) The press iv) The police v) The government vi) The local (municipal) authorities.

Table 4.14 provides a breakdown of the responses, which shows trust in government and parliament to be the lowest while tending to be higher in the local authority, other people and the police. The non-responses are again populated by those reporting don't know.

Institutions themselves cover the broad scope of the social order. The available questions seem to categorise both governmental and societal institutions. Here we look to those formal institutions that are likely to have an impact upon the social environment.

We are interested in whether the contextual environment created by the institutional functions of the welfare state varies in individuals reported levels of trust. This is important not only in terms of the potential impact on interpersonal trust (Larsen 2007) but also as a potential effect on creating a climate of trust to participate and create networks (Uslaner 2002). This position would lead us to consider governmental institutions more relevant to the hypothesis, though all institutions are interrelated. As such, it is worth reflecting on their relationship.

The local (municipal) authorities are perhaps where welfare delivery systems are likely to take place. In turn, this is influenced by the decision-making of parliament and government, with the legal system providing the foundations for rights and responsibilities surrounding welfare provision. The police are agents of the state, ensuring that people adhere to the rules imposed by the government. The press in advanced democracies is often considered independent of the state, though in practice often reflects the state's decision making. The press and police are both influential socialising institutions that uphold and frame the normative state apparatus. It is possible that as they are reflective of the governmental processes, they will relate to a different aspect of institutional trust. Equally, as influencing institutions in their own right, the relationship to the social environment on trust and participation is still likely to be of importance. In terms of a coherent theoretical model, it seems appropriate to consider all institutions.

Table 4.14: Breakdown of institutional trust variables

	Trust in Parliament		Trust in the legal system		Trust in Press		Trust in Police		Trust in government		Trust in local authority		Trust in people in general	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1 - low	9068	24.86	5813	16.0	4917	13.37	2828	7.64	9345	25.41	4140	11.31	5075	13.6
2	3397	9.31	3047	8.38	3270	8.89	1666	4.5	3859	10.49	2441	6.67	2225	5.96
3	4188	11.48	3800	10.46	4518	12.28	2300	6.22	3836	10.43	3011	8.22	3382	9.07
4	3582	9.82	3578	9.85	4658	12.66	2634	7.12	3420	9.3	3325	9.08	3177	8.52
5	6260	17.16	6197	17.05	8308	22.58	6035	16.31	5732	15.59	6453	17.62	7361	19.73
6	3096	8.49	3555	9.78	4278	11.63	4383	11.85	3230	8.78	4530	12.37	4046	10.85
7	3166	8.68	3997	11.0	3469	9.43	5848	15.81	3236	8.8	5204	14.21	5034	13.49
8	2236	6.13	3603	9.91	2178	5.92	5851	15.82	2334	6.35	4207	11.49	4459	11.95
9	694	1.9	1556	4.28	675	1.83	2990	8.08	935	2.54	1757	4.8	1295	3.47
10 - high	786	2.16	1194	3.29	517	1.41	2459	6.65	847	2.3	1545	4.22	1249	3.35
Missing	133	0.36	82	0.22	66	0.18	62	0.17	143	0.39	92	0.25	41	0.11
DK	904	2.48	1089	2.98	655	1.79	460	1.26	594	1.63	797	2.18	168	0.46
N	37517	100	37517	100	37517	100	37517	100	37517	100	37517	100	37517	100

Table 4.15 provides the model fit statistics for the institutional CFA containing all six variables. Although the CFI for the model is within the acceptable range, the RMSEA would seem to indicate that there is misspecification. When we examine the structure of the model more closely, observing the local fit (Table 4.16), the residual inspection shows several large correlation/covariance residuals between the indicators, confirming issues with the latent variable.

Table 4.15: Institutional trust CFA model results

Measure	Model 1
(χ2)	6773.503
df	9
P-Value	0.000
RMSEA	0.139
(90% C.I)	(0.141 0.145)
CFI	0.935
SRMR	0.039

Table 4.16: Residuals of covariances, Institutional trust (all variables) CFA model

	Parliament	Legal	Press	Police	Gov	LA
Parliament						
Legal system	0.004					
Press	-0.164	0.173				
Police	-0.446	0.595	0.451			
Government	0.319	-0.293	-0.24	-0.259		
Local Authority	-0.281	-0.019	0.318	0.522	0.026	

As these results indicate, we reject a single latent variable with all institutional variables as the model is poor fitting. We now move into an exploratory process to find what would be feasible, theoretically and empirically, to form a coherent latent structure. One approach is to remain within the CFA framework examining the modification indices, though given the large discrepancies, is unlikely to be a fruitful endeavour. The second is to run an EFA and assess potential alternative configurations, which we can also achieve within the SEM methodology in Mplus.

The EFA (ESEM) results (Table 4.17) confirm that there are likely to be two factors within the data structure relating to institutional trust. The global fit statistics in model 2 (2-factor

solution), indicating an improvement over the previous single latent model with the CFI at 0.992 and the SRMR at 0.012. The RMSEA, however, is just below 0.08 and would still seem to suggest that some misspecification exists. The potential for there to be two factors is in line with the original position that made a distinction between governmental and societal institutions. However, the factor determinacy scores 0.982 and 0.899 would suggest there are still some reservations over a two-factor model. In order to achieve a reliable model removing potentially conflicting variables in line with the distinction of governmental and societal institutions is an appropriate next step.

Table 4.17: Institutional ESEM results, single and two-factor solutions

Measure	Model 1	Model 2
(χ2)	6773.508	798.896
df	9	4
P-Value	0.000	0.000
RMSEA (90% C.I)	0.142 (0.139 0.145)	0.0973 (0.069 0.077)
CFI	0.935	0.992
SRMR	0.039	0.012

Focussing on the governmental institutions only model 3, we notice (Table 4.18) that there is still some misspecification with the RMSEA 0.121. At the local level, the residuals and modification indices also show large expected parameter changes. As there is some similarity in what the questions ask in terms of governmental structures, perhaps the correlated nature of these indicators is unsurprising. If we consider the governmental processes, one expects there to be a close relationship between parliament and government both in how it operates and is viewed, particularly in terms of policy control. Equally, one might expect the government and the legal system to have a close relationship, with the latter considered somewhat an extension of the governmental structure and its mandate.

Table 4.18: Institutional trust CFA, 4 governmental variables, model fit

Measure	Model 3[a]
(χ2)	1087.744
df	2
P-Value	0.000
RMSEA	0.121
(90% C.I)	(0.115 0.127)
CFI	0.985
SRMR	0.018

[a]4 governmental variables

With this in mind, I explore two further models Table 4.19). Model 4 specifies a pathway between parliament and government, and model 5 specifies a pathway between the government and the legal system. As the fit statistics indicate, the final model 5 shows an improvement on existing specifications. Except for there being no p-value, all other fit statistics support the model. Further inspection at the local level (Table 4.20) shows that by correlating the errors between the government and legal system, the residuals are no longer of concern. With both the global and local fit showing acceptable results, it would seem to confirm that this is a valid latent variable model for institutional trust.

Table 4.19: Institutional trust CFA model fit comparison

Measure	Model 4[b]	Model 5[c]
(χ2)	687.683	45.917
df	1	1
P-Value	0.000	0.000
RMSEA	0.137	0.035
(90% C.I)	(0.127 0.144)	(0.027 0.044)
CFI	0.991	0.999
SRMR	0.013	0.005

[b]Parliament with government, [c]Government with the legal system

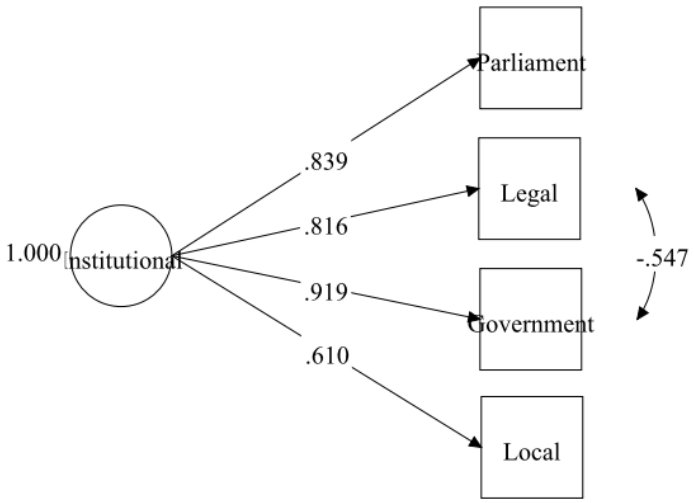
Table 4.20: Residuals for covariances, institutional trust (Government with the legal system), CFA model

	Parliament	Legal system	Government	Local Authority
Parliament	0.000			
Legal system	-0.031	0.000		
Government	0.018	0.000	0.000	
Local Authority	0.000	0.090	-0.052	0.000

Considering the previous findings requires a decision as to whether a latent variable directly informed from only governmental institutions is more appropriate than a measure that also includes societal institutions. Within the context of the hypothesis, we are interested in exploring the relationship between welfare systems and social capital outcomes - specifically how universalism affects trust. The solidarity engendered by the welfare state creates trust in

the institutions that deliver them, which becomes mutually reinforcing and creates wider benefits for the other forms of social capital. Therefore, whilst societal institutions like the police are related to the welfare system, the specific governmental institutions are more likely to be directly influenced by welfare state variation. With this in mind, the final CFA model 5 (Figure 4.6) will form the institutional trust latent variable. The four final variables included informing the latent variable are Parliament (G1), the legal system (G2), the government (G3) and the local (municipal) authorities (G4)

Figure 4.6: Institutional trust latent variable model



4.4.4.2 Interpersonal Trust

Interpersonal trust or trust in the generalised other is another crucial aspect in understanding social capital (Coleman 1990; Uslaner 2000; Delhey and Newton 2005). It facilitates action and cooperation, is an important resource for individuals and is essential for the functioning of society (Hyggen 2006). Given the implicit importance of such a concept to understanding the societal environment, there are questions within surveys that specifically try to identify this valuable resource.

Within the literature, we see consistent operationalisation of interpersonal trust through the question; 'generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?'. They are operationalised as a scale from low to high (Albrekt Larsen 2007), or as a binary indicator - yes and no (Oorschot and Finsveen 2010;

Oorschot et al., 2006; Oorschot and Arts 2005). Where available, factor scores combine the additional questions: 'Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?'. Would you say that most of the time, people try to be helpful or that they are mostly looking out for themselves? (Halman and Luijkx, 2006).

Within the EQLS, the question relating to interpersonal trust, as in most surveys, is 'generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? On a scale of 1 to 10, where one means that you can't be too careful and ten means that most people can be trusted'. Unfortunately, there are no additional questions related to interpersonal in the trust EQLS that would allow us to construct a more comprehensive indicator. Given the importance of the concept and cross-country comparability, this is somewhat of a limitation. Regarding reliability, we can still have a certain amount of confidence in the measure due to the questionnaire design itself. The EQLS employs specific questionnaire translation with multi-stage testing and validation, ensuring the reliability of the measured concept cross-nationally.

The final dependent variable is a single continuous variable, standardised in line with other variables providing a scale of 0 to 1.

Combining the single measure of interpersonal trust alongside the institutional latent variable, we can create a bi-factor model to assess trust in a coherent dimension. The model results in Table 4.21 confirmed that both factors conform to the relational dimension of trust.

Table 4.21: Bi-factor model fit of institutional trust and interpersonal trust

Measure	Model
(χ2)	11.866
df	2
P-Value	0.003
RMSEA (90% C.I)	0.011 (0.006 0.018)
CFI	1.000
SRMR	0.002

As one final check on the coherence of social capital as a latent variable construct, a further bi-factor model was tested - presented in Table 4.22. Although the CFI is not exceptionally high, it is within the threshold, and the RMSEA is also below .05, suggesting that there is some reasonable underlying fit.

Table 4.22: Bi-factor model fit of all social capital dimensions

Measure	Model
(χ2)	4503.34
df	115
P-Value	0.000
RMSEA	0.032
(90% C.I)	(0.31 0.033)
CFI	0.958

4.5 Conclusion

This chapter has detailed the theoretical and empirical work required for establishing reliable measures for inference. Having acknowledged the limitations of existing approaches that use frequencies to assess the volume of an individual's social capital, I have empirically confirmed that the theoretical distinction of potential access to resources is present with the underlying data structure. Now that we have addressed the important issue of the construct validity of the dependent variable, we are in a position to address the research hypotheses.

5 The social determinants of social Capital: Do welfare states matter?

The second analytical chapter seeks to explore the welfare state social capital relationship. It is here where we find resolute and often conflicting positions on the welfare states necessity and inadequacy. While dualistic interpretations may aid in presenting a convincing position, the relationship may not be so straightforward. Building on the multi-dimensional account of social capital illustrated in the previous chapter and providing a greater qualitative distinction of the welfare state processes, the aim is to provide a more nuanced picture of the welfare state and its calibrating tendencies in its relationship with social capital. The chapter informs how the theories of substitution and complementarity sit with the likely mechanisms of the welfare state social capital relationship. Each dimension is assessed in turn, leading to a specific hypothesis. The second half of the chapter develops the analysis to test the hypotheses through multiple multilevel models, utilising the already established social capital latent variables.

5.1 Welfare State and Social Capital

Our methodological framework highlights the potential for cross-national variation in outcomes. It is this variation that leads us to explore the potential variation in an individual's social capital as a result of differences in the social structure created by welfare states [The social determinants of social capital]. The crowding-out thesis (Nisbet 1962; Wolfe 1989; Etzioni 1995) implies that generous welfare systems are detrimental to social capital development, which the empirical literature supports (e.g., Scheepers et al. 2002; Kääriäinen and Lehtonen 2006; van der Meer et al., 2009; Gesthuizen et al., 2008; Stadelmann-Steffen 2011). However, there is also evidence to suggest the opposite, with generous welfare systems crowding-in social capital (e.g., van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Larsen 2007; Gelissen et al., 2012).

To clarify the relationship between social capital and the welfare state, I adopt a multi-dimensional approach to social capital. This approach is critical in two respects. Firstly, social capital is a multifaceted construct, which I empirically substantiated in the previous analytical chapter. Secondly, the duality of the crowding-out argument overlooks the possibility of crowding-in and crowding-out across social capital dimensions and along socio-economic lines.

In addition, previous empirical studies have operationalised the welfare state through social spending (e.g., Scheepers et al. 2002; van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Gesthuizen et al., 2008; van der Meer et al., 2009; Stadelmann-Steffen 2011; Gelissen et al. 2012), which does not adequately account for the generosity of the welfare state. To overcome this limitation, we focus on the generosity of the welfare state, alongside its level of universalism.

Exploring the relationship between the welfare state (at the macro-level) and social capital (at the micro-level) requires us to identify the theory and mechanisms under which a causal influence may proceed. The dynamics of this relationship is often underexplored, with ideological narratives not sustaining adequate hypotheses. In the next section, I address the evidence for the expected association and form testable hypotheses for each dimension of social capital.

5.2 Welfare State on Informal Social Capital

The processes of industrialisation and urbanisation have profoundly affected civil society, dramatically altering social ties (Wolfe 1989). Previous informal network structures that provided care and support moved to more formal institutional provisions. This transition was one borne of necessity, or rather failure of the market to ensure the individual's welfare adequately. Where responsibility for subsistence is placed with the public instead of the informal support of family, the result is the expansion of the welfare state at the expense of social networks (Anderson 2009). This Andersen (1984:129) argued creates a vicious circle, with the weakening of social ties leading to more public sector demands and even greater dissolution of networks

This line of enquiry that suggests a detrimental impact of the support from welfare systems is found in Scheepers et al. (2002), who relates the individualisation of modern society to the breakdown of social networks. The processes of marketisation and decommodification have allowed individuals to make choices relevant to their life course. Specifically, the extent to which a welfare state decommodifies its citizens enables them to participate in society irrespective of failing market provision. Where individuals are not exclusively reliant on their informal networks for economic survival, they are no longer compelled to foster and maintain their informal networks. As the responsibility for care and support is no longer with the individual, there will be an inevitable decline informal network structures (Kuhnle and Alestalo

2000), along with the informal solidarity that maintains network structures. In summary, the integrated state that promotes individual autonomy replaced the dependency on informal social capital (Pichler and Wallace 2007), one supported by the systems of universal provision and collectivised caring (Daly and Lewis 2000).

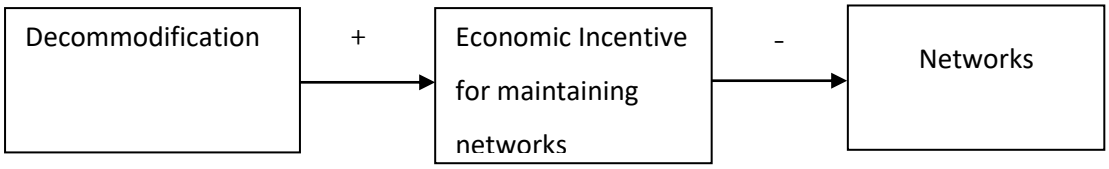


Figure 5.1: Mechanism for welfare state crowding-out informal networks

There is evidence for the welfare state crowding-out informal networks within the empirical literature (e.g., Scheepers et al. 2002; van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Gesthuizen et al., 2008; Koster and Bruggeman 2008; van der Meer et al., 2009). On their own, these studies advocate a clear sense of crowding-out, but how do they relate to our theoretical and analytical approach?

Scheepers et al. (2002) provide a clear hypothesis on the role of decommodification in crowding-out informal networks, represented in Figure 5.1: Mechanism for welfare state crowding-out informal networks. There are two relevant points about the mechanism proposed. Firstly, they operationalise the welfare state through social expenditure and regime types. Although decommodification is a significant factor in Esping-Andersen's (1990) original regime classification, a more direct measure beyond the broad social policy context may be more suited to address the macro-micro relationship. Secondly, as with the vast majority of studies, networks are operationalised through the frequency of contact with family or friends. Here we might consider a potential difference in what is understood by access to support as a resource and what is considered family ties. An individual may not have to rely on informal networks if the state provides support for economic survival. Still, whether that affects the number of friends one has or the frequency of contact with friends and family seems open to question. The network specification, its measurement and quantification, is therefore central to understanding the hypothesised relationship.

Specifically focusing on the available (as I have defined as potential access to) resources within informal network structures, we can observe whether the formal institutional provisions of the welfare state affect the reporting of informal social support. The hypothesised outcome is that informal networks' reported levels will be higher in countries with low decommodification. Here low welfare generosity implies that the welfare state does not interfere with the systems of support. Individuals rely on informal networks when there is an economic shortfall and, as a consequence, must ensure they can access the help from informal networks when required.

H1: More generous welfare states with higher replacement levels will crowd out informal networks by decreasing individuals social capital

From an economically rational position though slightly reductive, in a sense that all social contact represents a cost-benefit analysis, decommodification could have a negative bearing on the maintenance of informal networks (specifically resource-based). The same line of inquiry, however, does not automatically follow for formal network structures. The substitution argument implies a zero-sum game, where welfare states undermine civic participation by providing services previously undertaken by families and communities (Fukuyama 2000). This service infringement results in passivity within civil society. With the devolvement of responsibility to the welfare state, citizens become dependent and can no longer deal with problems themselves (Finsveen and Oorschot 2007). At the same time, generous welfare support and high decommodification can be conducive to an individual's ability to participate, providing the necessary resource support. The universal system increases individuals' rights and possibilities to engage in civil society (Kääriäinen and Lehtonen 2006), actively encouraging participation in voluntary organisations (Pichler and Wallace 2007; Kuhnle and Alestalo 2000).

5.3 Welfare State on Formal Social Capital

As we have previously established, the empirical literature supports the crowding-in of formal networks (e.g., van Oorschot and Arts 2005; van Ingen and van der Meer 2011) and crowding-out (e.g., Gesthuizen et al., 2008; Stadelmann-Steffen 2011).

From the resource perspective, I consider welfare state mechanisms to be a crucial factor in providing the opportunity to access formal network structures (Li et al., 2005). It enables the mobilisation of social contacts from which an individual can benefit (van Schaik 2002:7) that they would otherwise be devoid of accessing. By insuring against risks, the welfare state

simultaneously increases an individual's capacity to form and maintain network structures (Barr 2012). Generous social insurance systems can reduce the adverse effects of unemployment that may result in social exclusion and the breakdown of existing formal networks. Health insurance provides potentially critical support to treatments that would otherwise prevent participation, such as medicine, subsidised aids, or personal assistants (Saltkjel et al., 2013). Social benefits can open up the door to participation and inclusion that a lack of resources might otherwise prevent, particularly for the disadvantaged.

Within the context of destructive market forces, the unrecognised central importance of benefits is that it relieves people from 'the struggle for their existence …enabling social communication, participation and trust to flourish' (Wallace and Pichler 2007:50). Suppose an individual is continuously preoccupied with their economic survival, investing in informal networks to survive. In that case, there is likely to be less actual or perceived time to generate formal networks. Decommodification then could substantially positively affect an individual's ability to participate actively in civil society. It is not merely that social protection offered by the institutions of the welfare state has led to passive consumption; it is that they have led to more active and enriched lives, one that promotes civic-mindedness (Rehn 1984).

H2: Welfare states with greater social protection through generous replacement rates support an individual's formal network structures and provide access to new ones- increasing the level of formal participation.

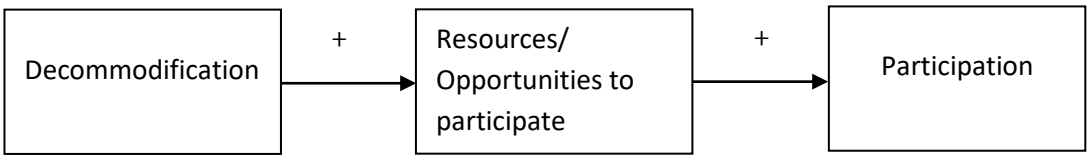


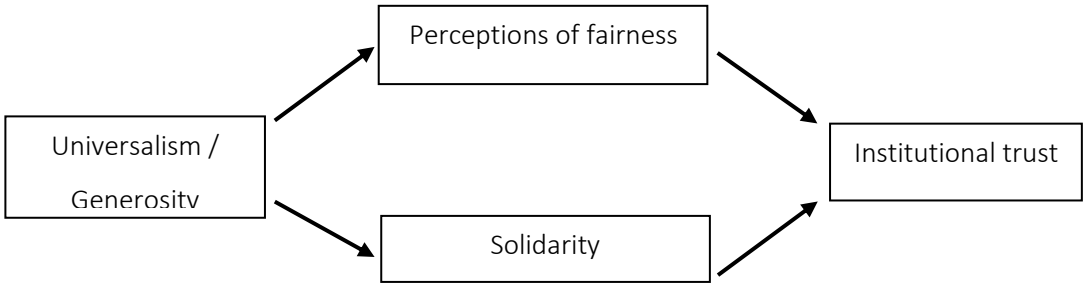
Figure 5.2: Mechanism for welfare state crowding-in formal networks

The crowding-out debate primarily concerns itself with the detrimental effects the size of the welfare state has on individual's networks. If civic associations are not the driving force behind the levels of trust, then identifying the role of the welfare state in shaping trust is essential to understanding social capital outcomes.

5.4 Trust and the Welfare State

By guaranteeing extended citizenship rights through generous and universal provision, welfare states can engender trust in both institutions and each other. The universal system ensures citizenship through welfare state solidarity, providing the basis for social solidarity and trust (Trägårdh 2007). The welfare state's institutional arrangements help create the context and shape attitudes towards the welfare state- generating a system of institutionalised solidarity (Gelissen 2000). Here the symbolic sense of community engenders feelings of belonging, trust and security (Kääriäinen and Lehtonen 2006:33). Universal programs give rise to a sense of equal treatment and fairness within society (Kumlin and Rothstein, 2005). It is the perceived fairness and impartiality of institutions that implement public policies, which serve as the foundations of the building and maintaining the levels of institutional trust (Rothstein and Stolle 2003:192). With a universal commitment to egalitarianism and equality, the generous welfare state is a trust-building institution (Trägårdh 2007). Although correlational, there is some evidence to support the positive effect of generous and universal welfare states on the levels of institutional trust (e.g., van Oorschot and Arts 2005; van Oorschot et al., 2006).

Figure 5.3: Mechanism for welfare state crowding-in institutional trust



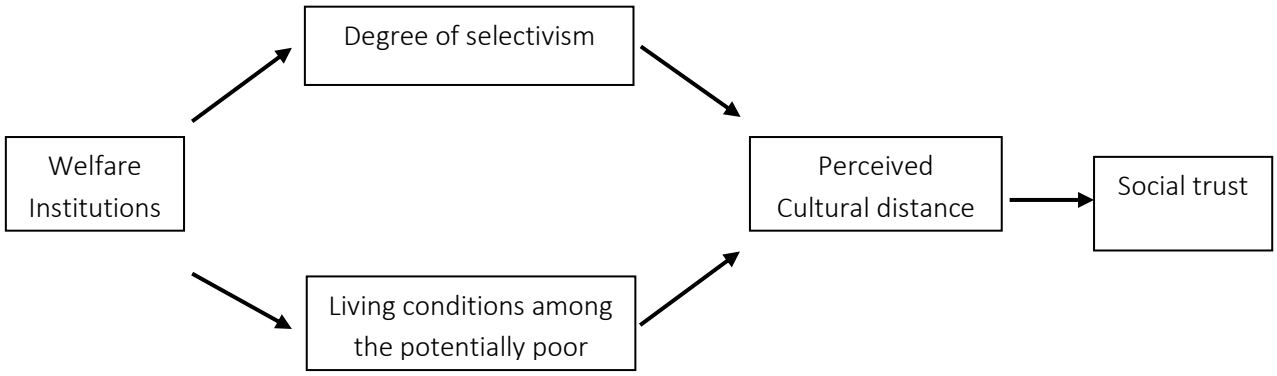
The trust engendered in institutions through universal provision can also spill over to influence trust between individuals (Rothstein and Stolle 2003). When people interact with public institutions, not only are they concerned about the outcomes and success but also whether the process of obtaining the necessary support was fair in itself. This process is what Kumlin and Rothstein (2005) term 'procedural justice'. Systems that employ means-testing can increase discrimination and suspicion, which creates demands on both the bureaucrat and the citizen. The potential for distrust is inherent to the system itself, where the process of

delivering means-testing encourages 'prejudice, stereotype, and ignorance as a basis for determination' (Lipsky 1980:69). Kumlin and Rothstein's (2005) study utilising the 1999 West Sweden SOM Survey finds support for this position. Individuals who had contact with selective welfare services compared to universal services reported lower levels of interpersonal trust. While those who were in contact with universal services reported an increase in the average level of trust with the number of institutions they came into contact.

Their findings support the hypothesis that needs-based welfare systems have more significant potential to spread mistrust. The relationship between interpersonal trust and welfare delivery influences trustworthiness, as people make inferences about others based on the experiences and perceptions of the public service bureaucrats. If individuals find themselves having to distort the truth to obtain assistance, or if administrators believe there is distortion, then such behaviours are thought to affect why others, in general, should be trusted (when the first-hand experience suggests otherwise). Although this does provide a realistic base to assess outcomes of generalised trust between universal and residual welfare systems, it predominantly accounts for those who come into direct contact with delivery systems. While this may be important to understand outcomes between benefits recipients, the spillover effect does not adequately address why there would be national trust variation across society.

Moving to the aggregate level in explaining why social trust should vary between welfare regimes, Larsen (2007) proposes the idea of 'cultural distance' (Figure 5.4), highlighting how selective welfare policies and poverty exacerbate the cultural difference between those at the bottom of society and the majority of others. A generous welfare system allows the potentially poor to maintain a standard of living relative to other citizens- reducing the cultural distance. Where those on the fringes of society with limited economic resources are forced to live different lifestyles, the cultural distance almost inevitably increases. Selective welfare policies and means-tested benefits create stigmatisation of those in need, resulting in an 'us and them' distinction of the undeserving poor who exploit the system and cannot be trusted.

Figure 5.4: Mechanism for the welfare state on social trust, (Larsen 2007)



Analysing data from the WVS (1990-1993 and 1999-2001), Larsen (2007) shows that trust in other people remains twice as likely in socio-democratic regimes than Anglo-Saxon regimes. The implication is that the smaller perceived cultural distance in universal systems help to develop interpersonal trust between individuals. He suggests that the dramatic reduction in trust for the liberal welfare states may be a direct result of welfare retrenchment and residualisation. As the basic principle of universal welfare policy is not to discriminate between citizens on economic grounds and not distinguish between the 'needy' and 'poor' (Rothstein 1998:33), I expect the level of non-means-testing to affect the levels of reported trust positively.

H3 A more generous and universal welfare state that promotes solidarity with less means-testing will increase the levels of reported interpersonal and institutional trust.

5.5 Hypotheses Summary

What is learnt from the theoretical and empirical literature is a definite sense of potential variation between welfare states and social capital outcomes. The research suggests that the welfare state may not have a detrimental impact on the forms of social capital, as often stated. Instead, there is the potentiality for both crowding-in and out. The specified research hypotheses acknowledge this potential of the welfare state to have a calibrating effect: i) High decommodification and welfare generosity may reduce the need for informal network investment. ii) At the same time, high replacement levels enable individuals to uphold a socially acceptable standard of living, providing support and opportunities for network investment. iii) More generous and universal systems will increase the levels of institutional and interpersonal

trust, because generous universal systems promote solidarity through universal inclusion, increase the level of perceived fairness, and narrow the cultural distances amongst its population.

5.6 Research Frame

The research hypotheses are concerned with the determinants of social capital. Specifically, this chapter aims to address how variation in welfare state generosity and universalism affects the levels of an individual's social capital in the form of networks and trust. Acknowledging that the data and inquiry are hierarchical, the methodology of multilevel analysis is employed to address this relationship. The detail for the data, variables and methods is located in the methodology section.

5.6.1 Analysis

This section sets out the mode of analysis that will take place for each dependent variable, followed by the reporting of results for each of the multilevel models. Remember, the purpose of employing CFA was to assess the theoretical proposition of what constitutes social capital empirically. The dimensional approach alongside latent variables aims to overcome the limitations of existing approaches [selectivity, composition and direct measurement]. By acknowledging the unobservable, we are better placed to address the unknown of social capital.

As the concern is with the potential variation of the welfare state on individuals levels of social capital across all dimensions, each measure (dependent variable) of social capital is addressed as an outcome in separate multilevel models.

5.6.2 Models

In order to address how welfare state generosity [in the form of universalism and replacement rates] affects the outcome of each social capital dimension, I employ the method of multilevel analysis within Stata. Specifically, we are interested in explaining the variance in social capital outcomes between countries. The notation and statistical explanation for the types of models are in the methodology chapter. As a guide, I provide a brief description of the modelling process. The initial random intercept model identifies the partitioned variance between the two levels within the data. Here we can determine how much total variation exists in social capital (dependent variable) for individuals between countries. The second model adds the

individual-level explanatory variables [those socio-demographic characteristics most relevant to understanding social capital variation; age, gender, cohabitation, education, income, unemployed and benefit recipients]. The next two random intercept models include the country-level (independent) variables that measure generosity and universalism in turn (net replacement rate and non-means-testing proportion of GDP) to assess the effect of the welfare state on social capital. The final model includes the control GDP (per capita in Purchasing Power Standards), which contextualises the significance of the welfare state effects found.

5.7 Results

5.7.1 Informal Networks

Table 5.1 and Table 5.2 provide the results of the informal social capital random intercept models. Except for domicile and secondary education, all individual-level variables show a significant relationship with the informal latent variable. The fact that the tertiary education level is an influencing factor is surprising ($\beta = .014, p < .05$). After all, these are direct often-closed relationships that relate to friends and families and do not require specific cultural knowledge beyond immediacy. This finding would seem to suggest that there are educational advantages to informal resources that are at odds with the crowding-out argument. If we consider the observed indicators, such as access to jobs and money contained within the latent variable, it is possible to conceive how a structural element may lead to such an outcome.

Perhaps unsurprisingly, we find that those who are married or cohabiting report greater access to informal social capital than those who are not ($\beta = .038, p < .001$). Men report less informal social capital than females, which would seem to coincide with the potentially different social capital profiles and women as informal caregivers (Lowndes 2000).

Another interesting finding is that both the unemployed and those who receive social benefits show an informal network deficit compared to the employed. The rational choice position tends to imply that those excluded from the market would have to invest more in informal networks to guarantee survival, which appears not to be the case. The income variable further contextualises the suggestion that access to the market is essential for individuals' informal networks. Here we find it to be the most significant predictor of the informal latent variable ($\beta = .255,\ p < .001$), which is consistent with the social capital theory and the importance of economic capital for all other forms of capital.

Table 5.1: Informal social capital at the individual level

Level 1 controls	B	SE
Male	-0.016***	(0.003)
Age (centred)	-0.002***	(0.000)
Income (Standardised)	0.255**	(0.066)
Education (primary)	.	.
Secondary	0.000	(0.005)
Tertiary	0.014**	(0.005)
Unemployed	-0.047***	(0.005)
Cohabiting	0.038***	(0.003)
Receives benefits	-0.033***	(0.004)
Domicile (rural)	0.005	(0.003)
Constant	0.801***	(0.012)
Variance country level	0.004***	(0.001)
Variance Individual level	0.048***	(0.000)
Log-likelihood	2733***	
N	28,032	

"* p<0.05 ** p<0.01 *** p<0.001"

The base model (1.0) itself shows the total country-level variance of the informal latent variable to be explored is 8.1%, which after adding all the explanatory variables is 4.8% of explained variance. The performed likelihood ratio (χ^2) test statistically confirms the likelihood of improvement between the models. The final model (1.5) reports an r^2 of .430 - indicating a reasonable model fit and explanation of the dependent variable. The second model (1.1) introduces the individual level controls, showing a slight increase in the unexplained variance. Although this seems counter-intuitive, the nature of multilevel modelling means that negative variances are sometimes observed within the iterations (Bosker and Snijders 2011; Hox 2013).

The replacement rate variable (1.2) has a statistically significant effect on the informal latent ($\beta = -0.132$, $p < .001$), which is in line with the hypothesis. Indicating that greater welfare support for individuals [in the form of replacement rate generosity] can be detrimental to the

amount of informal social capital an individual possesses. Assessing the second welfare state measure (model 1.3), we again observe a negative relationship (β = −0.101, p < .01). When both welfare state measure are included (1.4), we notice a slight drop in the effect (β = −.112, p < .01), with non-means-testing found to be significant at the 90%-level (β = −.062, p < .10). After including the final control GDP (1.4), the significance of replacement rates diminishes (β = −.076, p < .10), making firm assertions about the effect of welfare generosity on informal networks difficult. That said, it is still significant at the 90% level and is in line with other studies that observed crowding-out in informal networks (e.g., Scheepers et al., 2002; van der Meer et al., 2009). GDP itself has an adverse effect on the informal latent variable (β = −.135, p < .05), which is perhaps a little surprising and is revisited in the discussion section.

$$(final\ model) Informal\ social\ capital_{ij}$$
$$= \beta_{0j} + \sum_{p} \beta_{p1} gender_{ij} + \beta_{p2} age_{ij} + \beta_{p3} income_{ij} + \beta_{p4} education_{ij}$$
$$+ \beta_{p5} cohabiting_{ij} + \beta_{p6} employed_{ij} + \beta_{p7} benefits_{ij} + \beta_{p8} domiclie_{ij}$$
$$+ \sum_{q} \beta_{q1} Net\ replacement\ rate_{j} + \beta_{q2} Non\ means\ tested_{j}$$
$$+ \beta_{q3} GDP_{j} + U_{oj} + R_{ij}$$

Table 5.2: The effect of generosity on Informal social capital

	Model 1.0		Model 1.1		Model 1.2		Model 1.3		Model 1.4		Model 1.5	
level 2 controls	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Total net replacement rate					-0.132***	(0.037)			-0.112**	(0.040)	-0.076+	(0.042)
Non-means testing %GDP							-0.101**	(0.038)	-0.062+	(0.034)	-0.041	(0.033)
GDP_PPS											-0.117*	(0.058)
Constant	0.813***	(0.011)	0.801***	(0.012)	0.855***	(0.019)	0.831***	(0.020)	0.867***	(0.019)	0.872***	(0.018)
Variance country level	0.004***	(0.000)	0.004***	(0.001)	0.003***	(0.000)	0.004***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.050***	(0.000)	0.048***	(0.000)	0.048***	(0.000)	0.048***	(0.000)	0.048***	(0.000)	0.048***	(0.000)
Total variance (ICC)	8.1%		7.3%		5.2%		7.1%		5.4%		4.8%	
Log-likelihood	2009		2733***		2739**		2977*		2740*		2742+	
R2 level 1			0.046***		0.068***		0.068***		0.072***		0.078***	
R2 level 2			-0.017***		0.291***		0.162***		0.351***		0.430***	

N level 1=28,032, Level 1* controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile,
N level 2=29 countries, + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.7.2 Voluntary Participation

Table 5.3 and Table 5.4 presents the results of the first formal social capital model, derived from the voluntary associations latent variable. At the individual level both income (β = .302, p < .001) and education have a large positive effect. Tertiary education indicates a β=.162 increase in the voluntary latent variable compared to those who are primary educated. Within the social capital literature, there is support for the importance of economic and cultural capital in generating and accessing formal networks (e.g., Wilson 1998; Christoforou 2004; van Oorschot 2005; Bekkers 2007). Those excluded from the labour market report a small but significant deficit (β = -.027, p<.001), indicating the importance of employment in accessing wider network structures. Those who receive benefits also show a negative relationship to voluntary participation, although this finding is only significant at the 10% level. Gender does not seem to affect the latent variable, which one might have expected based on the literature (e.g., Lowndes 2000; Wilson 2000; Lin 2000). Age has a very small negative effect on participation (β = -.001, p < .001). Finally, those who live in rural areas indicate a β=.012 increase in voluntary participation compared to city dwellers.

Table 5.3: Voluntary social capital at the individual level

Level 1 controls	B	SE
Male	0.005	(0.003)
Age (centred)	-0.001***	(0.000)
Income (Standardised)	0.302***	(0.081)
Education (primary)	.	.
Secondary	0.057***	(0.006)
Tertiary	0.162***	(0.006)
Unemployed	-0.027***	(0.006)
Cohabiting	0.008*	(0.003)
Receives benefits	-0.008+	(0.005)
Domicile (rural)	0.012***	(0.003)
Constant	0.088***	(0.013)
Variance country level	0.004***	(0.001)
Variance Individual level	0.070***	(0.000)
Log-likelihood	-2602***	
N	28,032	

"* p<0.05 ** p<0.01 *** p<0.001"

The ICC reports 6.4% of the total unexplained variance lies between countries (2.0), dropping to 5.4% when both the individual and explanatory variables are included (2.4). The first model shows a significant improvement over the base model, with the individual variables reporting an r^2 .202 (2.1). The inclusion of both the non-means-testing (model 2.2) and replacement rates indicator (model 2.3) indicates a significant positive effect on the voluntary participation latent of 0.083 and 0.163, a statistical improvement confirmed by the log-likelihood ratio. The effect size drops slightly when both indicators are included with the non-means-testing indicator no longer reporting significance (2.4). Introducing the final control GDP (model 2.5), the expected effect of net replacement generosity remains statistically significant (β=.115, p<.01). The significant result confirms the hypothesis that greater generosity increases formal social capital rather than crowding-out participation in formal networks. The positive influence of the welfare state on voluntary participation is contrary to studies that observed a negative effect of social spending on voluntary organisations (e.g., Gesthuizen et al., 2008; Stadelmann-Steffen 2011). The final model predicts an r^2 .596 suggesting the model provides a reasonable amount of explanation for the potential country-level effects (net replacement rates) on an individual's voluntary participation.

$$
\begin{aligned}
&Voluntary\ social\ capital_{ij} \\
&\quad = \beta_{0j} + \sum_{p} \beta_{p1} gender_{ij} + \beta_{p2} age_{ij} + \beta_{p3} income_{ij} + \beta_{p4} education_{ij} \\
&\quad + \beta_{p5} cohabiting_{ij} + \beta_{p6} employed_{ij} + \beta_{p7} benefits_{ij} + \beta_{p8} domiclie_{ij} \\
&\quad + \sum_{q} \beta_{q1} Net\ replacment\ rate_{j} + \beta_{q2} Non\ means\ \ testing_{j} \\
&\quad + \beta_{q3} GDP_{j} + U_{oj} + R_{ij}
\end{aligned}
$$

Table 5.4: The effect of generosity on voluntary social capital

	Model 2.0		Model 2.1		Model 2.2		Model 2.3		Model 2.4		Model 2.5	
level 2 controls	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Total net replacement rate							0.163***	(0.035)	0.148***	(0.038)	0.115**	(0.042)
Non-means testing %GDP					0.083*	(0.037)			0.028	(0.033)	0.016	(0.033)
GDP_PPS											0.093	(0.057)
Constant	0.177***	(0.013)	0.135***	(0.013)	0.101***	(0.018)	0.055*	(0.021)	0.046*	(0.021)	0.048*	(0.021)
Variance country level	0.005***	(0.001)	0.004***	(0.001)	0.003***	(0.000)	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.074***	(0.000)	0.070***	(0.000)	0.070***	(0.000)	0.070***	(0.000)	0.070***	(0.000)	0.070***	(0.000)
Total variance (ICC)	6.4%		5.4%		4.6%		3.1%		3.0%		2.7%	
Log-likelihood	-3235		-2602***		-2598*		-2593*		-2593		-2592	
R2 level 1			0.055***		0.059***		0.077***		0.078***		0.080***	
R2 level 2			0.202***		0.326***		0.547***		0.558***		0.596***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile,
N level 2=29 countries, + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.7.3 Political participation

Presented in Table 5.5 and Table 5.6 are the results of the second formal social capital latent variableTable 5.5Table 5.6. At the individual-level (Table 5.5), men show a small but significant increase in political participation compared to women, reflecting the gendered nature of networks, or more widely, female parliamentary representation (Electoral Commission 2004). As with the voluntary latent variable, education and income are both central in understanding political participation. Income shows a positive relationship of β=.300, p<.001 and tertiary education showing an increase of β=.132 compared to primary education. Considering the importance of education in deciphering the political system, this would seem to make sense. Again the unemployed show a small but significant deficit in participation (β=-.014, p<.01).

Where previously those who reside in rural areas showed greater voluntary participation, they indicate a reduction in political participation (β=-.012, p<.001). Those receiving benefits indicate a slight increase in political participation (β=.007, p<.010). It is possible that having to engage with benefit systems demands a certain amount of political activity to ensure the provision, although this finding is only significant at the 10%-level. Age shows a small negative significant relationship, possibly requiring further breakdown to interpret any meaning. Finally, there is no significant difference in political participation between married or cohabiting individuals and those who are not.

At the country level (Table 5.6), the total variance to be explained is 7.5%, which after the inclusion of all individual-level variables drops to 5.8%. Both the independent variables on their own are significant and report a positive effect on political participation β=.082, p=<.01, β=.105, p=<.01 and a statistically significant improvement over the previous model (3.1). Net replacement rate remains significant when both measures are combined, although after the addition of the GDP control (3.5) is no longer significant. GDP remains the only significant predictor in the model (β=.115, p<.05), perhaps indicating a relationship between a prosperous economy and political motivation.

Table 5.5: Political social capital at the individual level

Level 1 controls	B	SE
Male	0.017***	(0.003)
Age (centred)	-0.001***	(0.000)
Income (Standardised)	0.300***	(0.065)
Education (primary)	.	.
Secondary	0.047***	(0.005)
Tertiary	0.132***	(0.005)
Unemployed	-0.014**	(0.005)
Cohabiting	0.002	(0.003)
Receives benefits	0.007+	(0.004)
Domicile (rural)	-0.012***	(0.003)
Constant	0.051***	(0.011)
Variance country level	0.003***	(0.000)
Variance Individual level	0.045***	(0.000)
Log-likelihood	3449***	
N	27584	

"* p<0.05 ** p<0.01 *** p<0.001"

$$(final\ model) Political\ social\ capital_{ij}$$

$$= \beta_{0j} + \sum_{p} \beta_{p1} gender_{ij} + \beta_{p2} age_{ij} + \beta_{p3} income_{ij} + \beta_{p4} education_{ij}$$

$$+ \beta_{p5} cohabiting_{ij} + \beta_{p6} employed_{ij} + \beta_{p7} benefits_{ij} + \beta_{p8} domiclie_{ij}$$

$$+ \sum_{q} \beta_{q1} Net\ replacment\ rate_{j} + \beta_{q2} Non\ means + \beta_{q3} GDP_{j} + U_{oj} + R_{ij}$$

Table 5.6: The effect of generosity on political, social capital

	Model 3.0		Model 3.1		Model 3.2		Model 3.3		Model 3.4		Model 3.5	
level 2 controls	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Total net replacement rate							0.105**	(0.033)	0.077*	(0.035)	0.035	(0.037)
Non-means testing %GDP					0.082**	(0.029)			0.055	(0.030)	0.039	(0.029)
GDP_PPS											0.118*	(0.051)
Constant	0.119***	(0.012)	0.051***	(0.011)	0.055***	(0.015)	0.036*	(0.019)	0.024	(0.019)	0.027	(0.018)
Variance country level	0.004***	(0.001)	0.003***	(0.000)	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.048***	(0.000)	0.045***	(0.000)	0.045***	(0.000)	0.045***	(0.000)	0.045***	(0.000)	0.045***	(0.000)
Total variance (ICC)	7.5%		5.8%		4.6%		4.4%		3.9%		3.3%	
Log-likelihood	2705		3520***		3524**		3524**		3526*		3528*	
R2 level 1			0.069***		0.078***		0.084***		0.088***		0.094***	
R2 level 2			0.277***		0.433***		0.461***		0.516***		0.592***	

N level 1=28,032, Level 1* controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile,
N level 2=29 countries, + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.7.4 Interpersonal trust

The first trust dimension of the social capital framework is interpersonal trust. At the individual level (Table 5.7), greater income is once again positively related to social capital, this time indicating greater trust in others (β= .456, p < .001). Education also shows a statistically positive effect with those educated to a tertiary level or above, reporting a 10% increase in trust compared to primary educated (accounting for all other controls). Both those who are unemployed (β= -.029, p <.001) and those who receive social benefits (β= -.016, p <.01) report an adverse effect on interpersonal trust. It would seem to indicate that exclusion from the labour market has a broader impact of decreasing trust in others. Males report greater trust in others compared to females (β= .013, p < .001), which coincides with Halman and Luijkx's (2006) findings. Although this may relate more to the abstract idea of trusting others and not in the specific sense where women report more trust (Soroka et al., 2003), this seems to challenge the literature that suggests that women are more trusting. Age, cohabitation and domicile all report to have no significant effect on the levels of interpersonal trust.

Table 5.7: Interpersonal trust at the individual level

Level 1 controls	B	SE
Male	0.013***	(0.003)
Age (centred)	-0.000	(0.000)
Income (Standardised)	0.456***	(0.077)
Education (primary)		
Secondary	0.030***	(0.006)
Tertiary	0.104***	(0.006)
Unemployed	-0.029***	(0.006)
Cohabiting	0.004	(0.003)
Receives benefits	-0.016**	(0.005)
Domicile (rural)	0.006	(0.003)
Constant	0.398***	(0.021)
Variance country level	0.012***	(0.002)
Variance Individual level	0.065***	(0.000)
Log-likelihood	-1415***	
N	28,032	

"* p<0.05 ** p<0.01 *** p<0.001"

In Table 5.8, the base model (4.0) reports the total unexplained variance of 16.8% between countries, which drops to 15.6% after the inclusion of the individual-level explanatory variables (Model 4.1). The log-ratio test showed the final model is not statistically different from the previous model (4.4), with GDP not explaining the variance beyond the two welfare state measures. The inclusion of non-means testing in the model (4.2) and the net replacement rate in the model (4.3) are significant improvements. The initial inclusion of non-means testing reports a β=.212, p=<.01, which reduces after adding the two controls to β=.112, p=<.05, but still a significant positive result. The finding that non-means-testing is positively associated with interpersonal trust coincides with Kääriäinen and Lehtonen's (2006) study who observe the positive effect of socio-democratic welfare regimes on interpersonal trust. Interestingly, the net replacement rate also has a positive effect reporting β=.161, p<.01, though when accounting for GDP, the significance falls to the 90%- level, β=.126, p<.10. It seems that both generosity and universalism are important factors for understanding the levels of interpersonal trust between countries.

$$
\begin{aligned}
&(final\ model) Interpersonal\ trust_{ij} \\
&\quad = \beta_0 + \sum_p \beta_{p1} gender_{ij} + \beta_{p2} age_{ij} + \beta_{p3} income_{ij} + \beta_{p4} education_{ij} \\
&\quad + \beta_{p5} cohabiting_{ij} + \beta_{p6} employed_{ij} + \beta_{p7} benefits_{ij} + \beta_{p8} domiclie_{ij} \\
&\quad + \sum_q \beta_{q1} Non\ means_{qj} + \beta_{q2} Net\ replacment\ rate_{qj} + \beta_{q3} GDP_{qj} + U_{oj} \\
&\quad + R_{ij}
\end{aligned}
$$

Table 5.8: The effect of generosity and universalism on interpersonal trust

	Model 4.0		Model 4.1		Model 4.2		Model 4.3		Model 4.4		Model 4.5	
level 2 controls	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Non-means testing %GDP							0.212**	(0.059)	0.140*	(0.060)	0.112*	(0.053)
Total net replacement rate					0.224**	(0.032)			0.161*	(0.069)	0.126+	(0.082)
GDP_PPS											0.099	(0.081)
Constant	0.453***	(0.022)	0.398***	(0.021)	0.331***	(0.031)	0.319***	(0.031)	0.277***	(0.033)	0.273***	(0.033)
Variance country level	0.013***	(0.002)	0.012***	(0.002)	0.009***	(0.001)	0.009***	(0.001)	0.007***	(0.001)	0.007***	(0.002)
Variance Individual level	0.066***	(0.000)	0.065***	(0.000)	0.065***	(0.000)	0.065***	(0.000)	0.065***	(0.000)	0.065***	(0.001)
Total variance (ICC)	16.8%		15.6%		12.4%		12.0%		10.2%		10.0%	
Log-likelihood	-1759		-1463***		-1459**		-1459**		-1456*		-1456	
R2 level 1			0.078***		0.072***		0.097***		0.100***		0.099***	
R2 level 2			0.342***		0.351***		0.452***		0.468***		0.469***	

N level 1=28,032, Level 1* controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile,
N level 2=29 countries, + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.7.5 Institutional trust

The final dimension of the social capital framework is institutional trust. At the individual level (Table 5.9), income is by far the largest predictor of institutional trust (β = .328, p< 001). Perhaps wealthy individuals are more inclined to trust the state apparatus, as they do well economically within the system. In the opposite direction, the unemployed (β = -.039, p<.001) and individuals in receipt of social benefits (β = -.013, p<.01) show a small but significant negative relationship to trust (what one might identify as the difference between labour market insiders and outsiders). Here those who find themselves excluded may not be as inclined to trust the institutions considered key to determining their position. Individuals with tertiary education report an increase of β= .056 (p<.001) compared to those with primary education, while those with secondary education report no significant difference. There is the potential for a cultural distinction of inclusion from those who have acquired the requisite cultural capital through higher education. Gender, marital status and domicile show no statistical difference in the levels of reported institutional trust. Age had a very small but significant effect (β = -.001, p< .001).

The total unexplained variance at the country-level (model 5, Table 5.10) is 24.2%, falling to 23.4% after the inclusion of the individual-level variables (model 5.1), which is statistically supported by the log ratio. The large between-country variance is partly explained by the relatively low trust from some post-communist countries and Greece, where the effects of the 2008 financial crisis and structural adjustment programs have damaged trust in institutions. Non-means testing (5.3) reports a (β=.201, p<.01) positive effect on institutional trust, which is in line with the hypothesis. However, the introduction of GDP in the final model is non-significant. The second welfare measure shows a strong positive relationship to institutional trust (β=.301, p< .001, model 5.2) and remains significant after the addition of the final control variable GDP (5.5) (β=.139, p<.05). The positive influence of generosity is in line with van Oorschot and Arts (2005), who find social spending is positively related to institutional trust. GDP has the most influence on the reported levels of institutional trust (β=.312, p< .001) within the model. It seems that while non-means-testing may have an effect on the institutional latent variable, it is GDP and net replacement rates that may be of greater importance. The final r-square value (0.648) is relatively high, suggesting that all contextual indicators may be necessary for understanding trust in institutions.

Table 5.9: Institutional trust (latent variable) at the individual level

Level 1 controls	B	SE
Male	-0.002	(0.003)
Age (centred)	0.001***	(0.000)
Income (Standardised)	0.328***	(0.066)
Education (primary)		
Secondary	-0.005	(0.005)
Tertiary	0.056***	(0.005)
Unemployed	-0.039***	(0.005)
Cohabiting	-0.000	(0.003)
Receives benefits	-0.013**	(0.004)
Domicile (rural)	0.003	(0.003)
Constant	0.366***	(0.023)
Variance country level	0.014***	(0.002)
Variance Individual level	0.047***	(0.000)
Log-likelihood	2827	
N	28,032	

"* p<0.05 ** p<0.01 *** p<0.001"

$$(final\ model) Institutional\ trust_{ij}$$

$$= \beta_0 + \sum_p \beta_{p1} gender_{ij} + \beta_{p2} age_{ij} + \beta_{p3} income_{ij} + \beta_{p4} education_{ij}$$

$$+ \beta_{p5} cohabiting_{ij} + \beta_{p6} employed_{ij} + \beta_{p7} benefits_{ij} + \beta_{p8} domiclie_{ij}$$

$$+ \sum_q \beta_{q1} Non\ means_{qj} + \beta_{q2} Net\ replacment\ rate_{qj} + \beta_{q3} GDP_{qj} + U_{oj}$$

$$+ R_{ij}$$

Table 5.10: The effect of generosity and universalism on institutional trust (latent variable)

	Model 5.0		Model 5.1		Model 5.2		Model 5.3		Model 5.4		Model 5.5	
level 2 controls	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Non-means testing %GDP							0.201**	(0.066)	0.121*	(0.061)	0.065	(0.053)
Total net replacement rate					0.301**	(0.031)			0.250***	(0.070)	0.139*	(0.068)
GDP_PPS											0.312***	(0.093)
Constant	0.376***	(0.023)	0.366***	(0.023)	0.228***	(0.031)	0.282***	(0.034)	0.219***	(0.033)	0.206***	(0.029)
Variance country level	0.015***	(0.002)	0.014***	(0.002)	0.008***	(0.001)	0.011***	(0.001)	0.008***	(0.001)	0.005***	(0.001)
Variance Individual level	0.049***	(0.000)	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)
Total variance (ICC)	24.2%		23.4%		14.8%		18.7%		13.7%		10.2%	
Log-likelihood	2513		2896***		2900***		2904***		2907***		2910**	
R2 level 1			0.033***		0.012***		0.088***		0.141***		0.175***	
R2 level 2			0.066***		0.463***		0.293***		0.511***		0.648***	

N level 1=28,032, Level 1* controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile,
N level 2=29 countries, + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Before moving on to a more detailed discussion of the results and implications for the hypotheses, I address the robustness of the estimation and composition of the net replacement indicator.

5.8 Sensitivity tests

5.8.1 Standard errors

To further contextualise the significance of the models in addressing the set hypotheses, each dimension was also estimated using robust standard errors and restricted maximum likelihood estimation (REML). This aimed to address any potential concerns over model specification, data normality, or the number of level-2 units. To refresh the reader, robust standard errors or sandwich estimator of variance uses the observed squared residuals to estimate the variance, which can vary between observations. The observed information matrix for standard ML estimation assumes a constant variance and homoscedasticity of residuals along a diagonal vector. REML, on the other hand, is a two-stage estimation procedure that uses residuals from level-1 to assist in the estimation of variance at level-2.

It is important to bear in mind that by applying multilevel estimation, the researcher is confident that the data and model provided is valid. Automatically applying restrictions to the model would indicate some uncertainty within the data. As previously stated in the methodology estimation section, a low number of level-2 units can cause concerns over the predicted variance. With 29 groups and large sample sizes, we are expectant that the models will show minimal variation between estimation approaches. Table 5.11 to Table 5.15 provide the final model estimates across all estimation procedures.

Comparison of the estimation types mainly shows consistent reporting across all dimensions. The results for the political and voluntary models remain unchanged. The robust standard errors increase the significance of the adverse effect of generosity on informal social capital to the $p<.05$ level and remains at the $p<.10$ level for REML. The influence of universalism on interpersonal trust is significant across all estimations. Generosity, on the other hand, is no longer significant with REML estimation but is at the $p<.05$ level for robust standard errors. Finally, the significance for universalism on institutional trust falls below the $p<.10$ for both robust and REML, while the effect of generosity remains statistically significant.

What we learn from this is that some caution is required when interpreting the significance of our findings when the margin for error is higher (at the 90% level). Where there is confidence at the p<.05 level, the estimation techniques applied to the multilevel models are reliable and consistent.

Where there is perhaps some difference from the application of ML estimation and REML, is in the slight ICC increase and reduction in the r^2 when REML is applied. REML takes residuals from the observations in the fixed-effects portion of the model then employs ML estimation to estimate the variance components. As it uses regression coefficients, it is not directly comparable with the fixed components of ML (Oehlrt 2012). Perhaps a reminder to remain conservative when expressing the power of the variance components.

Table 5.11: Informal social capital, country-level estimation comparison (Robust and REML)

	Model 1.3		Robust		REML	
level 2 controls	B	SE	B	SE	B	SE
Total net replacement rate	-0.076+	(0.046)	-0.076*	(0.037)	-0.076+	(0.046)
Non-means testing %GDP	-0.039	(0.036)	-0.039	(0.032)	-0.039	(0.039)
GDP_PPS	-0.135*	(0.063)	-0.135*	(0.055)	-0.135*	(0.068)
Constant	0.864***	(0.020)	0.864***	(0.016)	0.864***	(0.021)
Variance country level	0.002***	(0.000)	0.002***	(0.000)	0.003***	(0.000)
Variance Individual level	0.047***	(0.000)	0.047***	(0.001)	0.047***	(0.000)
Total variance (ICC)	5.0%		5.0%		5.8%	
Log-likelihood	2995		2995		2941	
R^2 level 1	0.090***		0.090***		0.085***	
R^2 level 2	0.429***		0.429***		0.361***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, $^+$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 5.12: Voluntary social capital, country-level estimation comparison (Robust and REML)

	Model 2.3		Robust		REML	
level 2 controls	B	SE	B	SE	B	SE
Total net replacement rate	0.115**	(0.042)	0.115**	(0.037)	0.115*	(0.045)
Non-means testing %GDP	0.016	(0.033)	0.017	(0.041)	0.017	(0.035)
GDP_PPS	0.093	(0.057)	0.093	(0.093)	0.093	(0.062)
Constant	0.012	(0.018)	0.012	(0.014)	0.012	(0.020)
Variance country level	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.070***	(0.000)	0.070***	(0.002)	0.070***	(0.000)
Total variance (ICC)	2.7%		2.8%		3.2%	
Log-likelihood	-2592		-2566		-2619	
R^2 level 1	0.080***		0.081***		0.078***	
R^2 level 2	0.596***		0.595***		0.546***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 5.13: Political social capital, country-level estimation comparison (Robust and REML)

	Model 3.3		Robust		REML	
level 2 controls	B	SE	B	SE	B	SE
Total net replacement rate	0.035	(0.037)	0.036	(0.031)	0.036	(0.040)
Non-means testing %GDP	0.039	(0.029)	0.039	(0.029)	0.039	(0.031)
GDP_PPS	0.118*	(0.051)	0.116*	(0.049)	0.116*	(0.054)
Constant	-0.008	(0.016)	-0.008	(0.010)	-0.008	(0.017)
Variance country level	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.045***	(0.000)	0.045***	(0.002)	0.045***	(0.000)
Total variance (ICC)	3.3%		3.3%		3.9%	
Log-likelihood	27584		27875		27875	
R^2 level 1	0.094***		0.094***		0.091***	
R^2 level 2	0.592***		0.593***		0.544***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 5.14: Interpersonal trust, country-level estimation comparison (Robust and REML)

	Model 5.3		Robust		REML	
level 2 controls	B	SE	B	SE	B	SE
Non-means testing %GDP	0.126*	(0.061)	0.126*	(0.053)	0.126*	(0.065)
Total net replacement rate	0.126+	(0.077)	0.126*	(0.082)	0.126	(0.083)
GDP_PPS	0.101	(0.106)	0.099	(0.081)	0.099	(0.114)
Constant	0.273***	(0.033)	0.273***	(0.033)	0.273***	(0.035)
Variance country level	0.007***	(0.001)	0.007***	(0.002)	0.008***	(0.001)
Variance Individual level	0.065***	(0.000)	0.065***	(0.001)	0.065***	(0.000)
Total variance (ICC)	10.0%		9.9%		11.3%	
Log-likelihood	-1408		-1437		-1488	
R^2 level 1	0.100***		0.099***		0.090***	
R^2 level 2	0.468***		0.469***		0.405***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, $^+$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Table 5.15: Institutional trust (latent variable), country-level estimation comparison (Robust and REML)

	Model 4.3		Robust		REML	
level 2 controls	B	SE	B	SE	B	SE
Non-means testing %GDP	0.085+	(0.053)	0.085	(0.058)	0.085	(0.054)
Total net replacement rate	0.163*	(0.068)	0.163*	(0.077)	0.163*	(0.071)
GDP_PPS	0.251***	(0.093)	0.251**	(0.087)	0.251*	(0.102)
Constant	0.219***	(0.033)	0.206***	(0.029)	0.229***	(0.026)
Variance country level	0.008***	(0.001)	0.005***	(0.001)	0.005***	(0.001)
Variance Individual level	0.047***	(0.000)	0.047***	(0.000)	0.044***	(0.001)
Total variance (ICC)	10.2%		9.4%		10.8%	
Log-likelihood	2841		4063		4010	
R^2 level 1	0.175***		0.175***		0.169***	
R^2 level 2	0.648***		0.667***		0.627***	

N level 1=28,032, Level 1 controls= gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, $^+$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.8.2 Household composition

The chosen generosity indicator accounts for the total replacement rate of unemployment benefit, housing benefit and social assistance for a single average worker - providing a comparable measure of entitlement across countries. However, the household compositions upon which the replacement rates are based can alter the picture of entitlement and generosity (see Table 5.16). If we consider the possible welfare-state stratification that exists (Esping-Andersen 1990), then depending on the type of household the generosity index is based on, the results of the models may result in different outcomes of social capital. For example, some countries may wish to provide more generous support to households with children; or decide that a one-earner couple with children is more deserving than a single-parent household. In order to ensure the reliability of the generosity measure, I conducted a sensitivity analysis. This analysis compares the effect of generosity on each dimension of social capital across four household types [single, one-earner couple with two children, a single parent with two children and one-earner couple with no children]. The results of the analyses are in appendix D. The effects of generosity on social capital are broadly consistent across all household types, with a few exceptions. When replacing the generosity index with single-parent households with two children, generosity is no longer a significant predictor of informal networks and voluntary participation. In most cases, generosity is less for single-parent households than one earner two children households. As such, it may not be enough to crowd-out informal support and equally not high enough to enable broader participation.

Country	Single	Country	One earner two children	Country	Single parent two children	Country	One earner no children
Netherlands	64.1	Ireland	82.41	Lithuania	76.8	Ireland	75.41
Luxembourg	61.57	Denmark	82.22	Slovenia	74.16	Netherlands	70.63
Denmark	59.63	Netherlands	80.1	Denmark	73.81	Luxembourg	68.41
Portugal	59.59	Luxembourg	78.44	Luxembourg	72.94	Iceland	63.19
Belgium	55.25	Lithuania	75.43	Finland	68.82	Denmark	63.05
France	53.9	Finland	74.6	Iceland	67.14	Portugal	62.12
Ireland	53.58	Slovenia	74.43	Portugal	65.61	Finland	61.53
Austria	52.36	Iceland	72.47	Netherlands	65.59	Slovenia	57.77
Iceland	51.61	UK	72.32	UK	65.11	France	56.67
Finland	50.66	Austria	72.07	Belgium	65	Cyprus	54.42
Slovenia	46.87	Cyprus	70.85	Austria	64.36	Latvia	54.18
Sweden	45.19	Latvia	70.2	Ireland	64.11	Austria	53.58
Germany	45.16	Germany	68.57	Germany	63.59	Sweden	52.65
Latvia	44.95	Portugal	66.81	France	61.9	Germany	52.1
Spain	44.19	France	62.94	Sweden	60.59	Belgium	50.65
Czech Republic	43.33	Sweden	62.67	Latvia	57.81	Czech Republic	50.43
Croatia	40.13	Czech Republic	59.52	Cyprus	56.4	Spain	46.59
Malta	39.85	Belgium	57.8	Czech Republic	55.08	UK	46.23
Cyprus	39.31	Malta	54.88	Spain	54.69	Malta	43.88
UK	38.43	Spain	54.25	Croatia	53.98	Bulgaria	42.41
Bulgaria	38.24	Bulgaria	53.53	Malta	53.06	Lithuania	40.44
Estonia	33.77	Poland	51.65	Poland	50.26	Estonia	38.88
Poland	31.81	Croatia	50.55	Bulgaria	50.2	Croatia	37.79
Slovakia	28.18	Estonia	47.31	Estonia	44.45	Poland	37.42
Hungary	27.88	Slovakia	44.75	Hungary	40.82	Slovakia	35.17
Lithuania	24.63	Hungary	42.86	Slovakia	38.12	Hungary	32.09
Italy	22.89	Romania	33.1	Romania	31.44	Romania	25.1
Romania	21.09	Italy	27.34	Italy	27.72	Italy	24.31
Greece	15.01	Greece	21.02	Greece	24.03	Greece	16.51

Table 5.16: EU 29 AW replacement rates (2010-2012), by household composition

5.9 Discussion

Within the literature, there was an expectation that the welfare state affects the forms of social capital production. The picture presented was one of either crowding-out the informal and formal networks of civic participation (e.g., Nisbet 1962; Andersen 1984; Wolfe 1989; Lee 2000; Scheepers et al., 2002). Or one that created the environment for networks to flourish (Kuhnle and Alestalo 2000; Dahlberg 2005; Kääriäinen and Lehtonen 2006; Pichler and Wallace 2007; van der Meer et al. 2009), providing the necessary conditions for trust to emerge (Kumlin and Rothstein 2005; Albrekt-Larsen 2007; Trägårdh 2007). It is the potentially conflicting nature of the welfare state the led the research to seek a dimensional account of social capital, one that acknowledged the potential variation and the multifaceted nature of the concept (Eastis 1998; Dasgupta 2000; Grootaert et al. 2003).

As was observed in the results section, the welfare state did indeed indicate the potential for conflicting effects on the forms of social capital. At the individual level, we find mixed support for the hypotheses. Net replacement rates do have a crowding-out effect on informal networks, though after controlling for GDP is only significant at the 10% level. This finding makes claims of welfare generosity crowding-out informal social capital challenging, though still negative. It is worth pointing out that the levels of informal social capital were relatively high across all EU countries and showed little variation, particularly when compared to formal networks. There was also a limitation in the composition of the dependent variable in terms of the either-or response category, making it difficult to determine whether welfare states are providing support where it is required or actively crowding-out. Perhaps an option to observe all instances in which an individual can access informal resources may have improved the interpretation.

Relating this to the theory and the modernisation thesis, we can view the welfare state as a creation to meet the demands of insufficient market provision. Changes in demand and labour movements influenced previous familial informal network structures of provision. One borne out of necessity, one might argue. In this context, one has to consider what the implications of crowding-out are. The critical issue may lay with whether one has access to resources within networks, regardless of whether they are from the state or personal networks. Accounting for state support in the informal network setting increases the EU average from .81 to .92, suggesting that it could provide support beyond individuals' informal networks.

Surprisingly GDP is also found to be significantly negatively related to the informal latent variable. Within the context of the hypothesis, this would suggest that individuals in countries with higher GDP are less concerned they will receive adequate provision and are less motivated to generate informal networks. Perhaps a more prosperous economy indicates the greater likelihood, or maybe the false notion of employment, and thus maintaining one's independence without needing support. It could also be that the economy's demands have reduced the possible time one can dedicate to informal networks. Or the monetary value of exchange influences individuals' relationship to informal support.

The second network dimension is formal networks, explored through the two latent variables of voluntary and political participation. Both dependent variables reported a positive relationship to net replacement rates, although the certainty of our causal claims on the effect of generosity again remains mixed. We find support for the hypothesis regarding voluntary networks, which, after controlling for GDP, shows generosity to have an 11.5% increase in participation. Political participation, however, was found to be non-significant after the introduction of the control variables. This finding is perhaps a little surprising when considering the importance of welfare spending on political participation between income groups (Shore 2014).

Within the context of the crowding-out argument, voluntary associations are those positioned in direct competition with the public provision, with the welfare state substituting the need for a voluntary alternative (Dahlberg 2005). Here the detrimental impact of welfare state institutions on civil society should also be realised (Andersen 1984). The analysis provides an effective counter to this position finding that generosity is more likely to encourage and enable formal participation than deprive it. It is also worth noting that the significance of the voluntary model held across all applied estimation models, adding weight to the validity of the association. Furthermore, GDP reported being non-significant, confirming the importance of the generosity measure. Although political participation is not significant, it remained positive in direction. It also showed uniformity in the formal latent bi-factor model, which would seem to imply that civil society does not languish within the environment of welfare state generosity. Instead, as the hypothesis proposed, generosity supports formal network structures, increasing individuals' formal social capital.

There is support for the positive effect of the welfare state on interpersonal and institutional trust at the collective level. The hypotheses set out the primary importance of distinguishing

between universal and means-tested benefits. This distinction aimed to capture the social significance of universalism, explicitly acknowledging the process of creating solidarity and reducing the perceived social distance between groups. The analyses confirmed the importance of universalism for interpersonal trust. Reported as positively related to non-means testing and significant across estimation applications. Interestingly, generosity is also positively related to interpersonal trust though at the p<.10 level in the final model level. GDP itself was not significant, indicating that the welfare state is an essential determinant in understanding social trust.

It seems countries that are more generous and create a more socially cohesive environment through universalism are more likely to increase the trust between individuals, which is in line with Larsen's (2007) findings. The implications of this are important not only for the perceived cultural distance but also for the broader social fabric. Without trust in the 'other', there can be no civil society (Simmel 1950). As generosity also positively affects interpersonal trust, there is an argument to be made that the more comprehensive welfare system has a mutually reinforcing social capital effect. Universalism reduces the cultural distance increasing trust, which is essential for network formation. At the same time, generosity enables the opportunity to participate and maintain networks.

The second collective aspect of social capital is institutional trust. The model findings were a little different from those expected. While non-means-testing reported initial significance, after the controls, this fell to the 10%-level, which is a tentative finding. There was, however, a reliably significant positive result for the generosity measure, which would seem to imply that more generous provision increases levels of trust. Feasibly this makes sense when we consider that a higher GDP also relates to greater trust in institutions. It seems through the prospect of provision, institutional trust is enhanced. Interestingly, within the context of the nature of welfare support, it appears that rather than a destructive force, greater welfare state support is conducive for trust. These findings suggest that the qualitative distinctions of welfare state generosity and universalism are essential considerations for understanding the levels of trust, both interpersonally and institutionally.

By its very nature, measurement of the social world will involve some approximations and fit for purpose. As such, it may be worth revisiting how we arrived at the independent measures of the welfare state to aid in our judgment of these findings.

The selection of replacement rates as an indicator accounts for both qualitative and quantitative elements of the welfare state. The position of generosity overcomes existing limitations of macro-level influencing effects on social spending used throughout the literature. The indicator employed in the analysis was the total replacement rate of existing earnings for a single average worker (AW) averaged over a 7 to 60-month period. Generosity typically varies with respect to this period and family model type, with provision increasing support to families. Further analysis showed that an averaged indicator across all family types coincides with earlier results, confirming some stability in the replacement rates measure. An assessment of individual household types indicated one difference in the significance of generosity of networks not holding for single-parent households. The dynamics of household composition the stratification processes of how the welfare state supports families differently would be a significant area for future research.

The issue of dimensionality also needs to be raised. Each form of social capital is not entirely independent of each other but is interlinked due to the nature of social relations within a structure (Esser 2008). The decision to take a dimensional approach was to assess the idea of calibration and explore the possible nuances of the welfare state's effect. How the dimensions relate to one another is also likely to be of central importance. If we consider the importance of trust for participation (Coleman 1988; Newton 1999) and our findings suggest that generosity and universalism are essential determinants of trust, then it is likely to have a further impact on formal and informal relations. The implications being that in the process of austerity, the residualisation of welfare systems are likely to harm the levels of trust. As a result, it could have a detrimental consequence for individuals' social capital and civil society at large. This relational nature of social capital is the subject of the fourth analytical chapter, which aims to further our understanding of the social capital relationship and provide a contextualised understanding of the welfare state.

5.10 Conclusion

The initial analysis has confirmed that a dualistic interpretation of the welfare states' influence on the social structure is likely to be an unhelpful position in deciphering the social capital welfare state debate. The evidence mainly pointed towards a positive association of welfare state generosity and universalism on an individual's social capital levels. There was, however,

the potential for crowding-out in regards to informal social capital. Whether crowding-out is an adverse outcome itself, in terms of access to resources and precisely what this means at the individual level, will require further analysis.

This chapter has explored the between-country welfare state effect on social capital. The next stage is to combine these findings with an exploration of the within country-level variation so that we are in a better position to understand the social determinants of social capital.

6 The Role of the Welfare State in Moderating Social Capital Inequalities between Socioeconomic Groups

This chapter aims to address the critical issue of resources. Specifically, I wish to address whether the potential equalising mechanisms of the comprehensive welfare state can positively affect social capital inequalities. Having already theoretically framed our debate, the first part of the chapter briefly visits the literature to contextualise our previous analytical findings before identifying the specific hypotheses for analyses. The main body of the chapter will focus on trying to determine the role of the welfare state in moderating social capital inequalities. Here I address each social capital dimension in turn, first establishing whether there is cross-national variance through random slopes, then assessing whether the welfare state can explain the variance.

The previous analytical aimed to provide a more coherent picture of social capital and its relationship with the welfare state, in particular, by exploring the dimensionality of social capital and the potential calibrating nature of the welfare state. Adopting this approach, we move beyond the simple binary observations and instead identify how dimensions might vary and how this relates to the substantive nature of welfare states. The empirical analysis provided support for the hypotheses that universalism significantly influences interpersonal trust and, to a lesser extent, institutional trust. Generosity was a reliable predictor of participation in formal networks and institutional trust. Therefore, both generosity and universalism appear to create conducive environments for the development of social capital.

The previous chapter also highlighted the potential crowding-out of welfare state generosity on informal networks. The formal arrangements of the welfare state may have replaced some forms of social support, where the family was previously the primary source of individuals' provision. Whether this is an adverse outcome of continued welfare support or more a response to the individualised nature of informal structures as brought about by the economic system is an important consideration to bear in mind.

Perhaps the more pressing question is what the variation in crowding-in and crowding-out of welfare state support means for different groups of individuals in terms of their access to social capital. If the welfare state facilitates social capital that individuals would not otherwise have

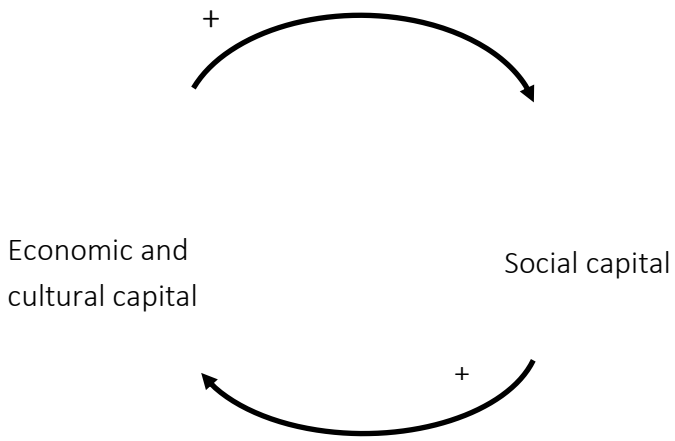
access to, then crowding-out may not necessarily be detrimental for overall levels of social capital, and indeed, could have an equalising effect. Equally, if the welfare state crowds-in more for some groups than others, this could exacerbate the inequalities between SEGs.

The limited logic of the crowding-out debate is to assume that individuals free from the constraints of the welfare state can mobilise their resources for successful practices (which, as the literature suggests, are unequally distributed). Here, the onus of responsibility is on the individual to improve their circumstances through positive association. While we cannot deny agency in individual choices, this perspective overlooks structural inequalities in social capital outcomes. Given the policy emphasis on social capital, the lack of research into cross-national differences in social capital inequalities is notable. Perhaps the resource perspective, as opposed to the society-centred approach, naturally highlights the potential structural inequalities that may persist.

6.1 Social capital inequality

The unequal distribution of social capital between socioeconomic groups (SEGs) has both theoretical and empirical support within the literature. Bourdieu's (1986) forms of capital illustrate how the conversion and transformation of economic and cultural capital into social capital occur in a mutually reinforcing process. Having existing capital enables individuals to acquire more social capital due to their privileged position. Relating this to the findings in the previous analysis, where income signifies economic capital and education represents cultural capital, evidence supports the potential difference in capital production. Those who are tertiary educated reported greater social capital across all dimensions, consistent with the empirical literature (e.g. Bekkers 2007; Gesthuizen et al., 2008). Income was the most significant predictor across all dimensions, affirming the central importance of income as the potential 'root of all other types of capital' (Bourdieu 1986: 252), which is again supported in the literature (e.g. Van Oorschot 2005; Van Oorschot et al., 2006; Vergolini 2011).

Figure 6.1: The mutually reinforcing process of capital

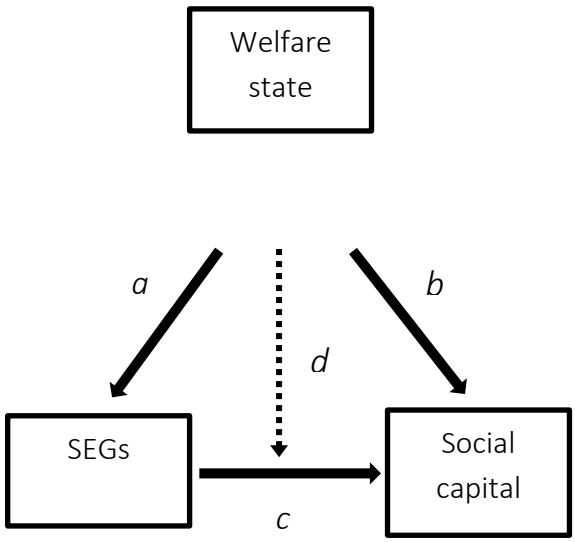


6.2 The welfare state and social capital inequality

As previously established, the welfare state can reduce socioeconomic inequalities through intervention and redistribution that address economic and cultural capital deficits. In turn, these improve opportunities to accumulate and reduce social capital inequalities. Generous and universal policies can ensure equality of access to resources to assist the production of social capital. As we are concerned with the distribution of resources, I also consider a direct social policy measure to be relevant to the discussion beyond the broader measures. As social protection policies aim to keep individuals within market employment, they reduce the potential risk of exclusion from social and labour market participation (Saunders 2010; Barr 2012). In doing so, they influence economic and cultural capital shortfalls and increase the potential for social capital accumulation.

Figure 6.2 illustrates the interaction between the welfare state, SEGs and social capital. Arrow (*a*) highlights the redistributive functions of the welfare state. Arrow (*b*) is the previously explored effects of the welfare state on social capital. Arrow (*c*) represents the influence of socioeconomic inequalities on social capital outcomes. The final broken arrow (*d*) is the relationship to clarify. In the next section, we revisit the evidence relating to the dimensions of networks and trust to understand how the welfare state might influence the social capital inequalities between SEGs.

Figure 6.2: Moderating social capital inequalities between socioeconomic groups



6.2.1 Networks

There is mixed evidence on the role of the welfare state in moderating network inequalities. Gesthuizen et al. (2008) find that greater social security spending reduced the importance of education for informal networks but increased the importance of education for formal networks. Counter to this, van Ingen and van der Meer (2011) found that social security reduces the participatory inequalities between both income groups and education groups, and van der Meer et al. (2009) find greater spending crowds out informal networks for lower-income groups. The differing conclusions of van Ingen and van der Meer (2011) and Gesthuizen et al. (2008) emphasise the difficulty of addressing the social capital to welfare state relationship. Both studies use the same independent measure of social security but have different operationalisations of 'participation'. As I have previously addressed the construct validity of the formal network latent variable, we hope that the proceeding analyses will add some insight beyond the observed indicator approaches. In addition, we look to supplement these existing observations with the previously unexplored welfare state measure of generosity.

6.2.2 Hypotheses

In terms of SEGs, income positively relates to informal networks, which would suggest the potential for informal network inequality to be present. Generosity, therefore, has the potential to perpetuate this inequality or reduce inequality. Previous evidence suggests that spending can widen (van Ingen and van der Meer 2011) or decrease (Gesthuizen et al., 2008) informal network inequalities. If the generous system steps in and provides access to informal social capital, then the negative consequences of income inequality are likely to be compensated. The expectation then is that welfare state generosity will moderate the informal social capital inequalities between income groups, reducing the importance of income for social capital accumulation.

Chapter 5 also confirmed a small significant adverse outcome for the unemployed and those individuals in receipt of social benefits. Whether this is a deficit in the informal network structure of individuals itself or due to crowding-out through welfare state generosity is unclear. When individuals are experiencing adverse effects or find themselves excluded (from the market), Informal networks can provide protection through direct or indirect paths into the labour market (UNDP 2013). Individuals of low socioeconomic status simultaneously find themselves at a disadvantage of limited capital to build or convert into social capital. At the same time, they have restricted access to networks that can potentially improve their employment and benefit outcomes. This situation is precisely the area where we expect the welfare state to have a moderating effect. Ameliorating network inequalities through generosity and ALMPs, and improving access through the universal provision, welfare states can provide access where otherwise individuals find themselves excluded.

It was somewhat surprising that compared to primary educated, tertiary education reported greater access to informal social capital; after all, immediate informal networks should not have apparent access restrictions. That said, the type of networks individuals can access would understandably vary. As the composition of the informal latent variable includes indicators for accessing jobs and money, there is the possibility that acquiring greater cultural capital through education has improved the opportunities of access, enabling conversion into social capital. With this in mind, the welfare state has the potential to be an equalising force, providing alternative sources of access to networks for social capital production that may otherwise be missing from an individual's informal network.

H1 Differences in informal social capital across SEGs will be lower in countries with more generous welfare states.

Providing support and access to resources, enabling individuals to access information and jobs that more privileged individuals already have access to, is a vital function of the possible equalising tendencies of the welfare state between social groups. The formal solidarity of the welfare state that insures against risks can also improve the opportunities to create formal networks and participation in civil society. Universal systems increase individual's rights and possibilities to engage in civil society (Kääriäinen and Lehtonen 2006), where a national context based on solidarity and support can promote broader participation and inclusion (Kunemund and Rein 1999; Rothstein 2001; Van Oorschot and Arts 2005). At the same time, the 'safe refuge' provided by the generous welfare state allows lower SEGs greater opportunity to dedicate time and energy in forming new and maintaining existing networks (Kuhnle and Alestalo 2000). In addition, ALMPs provide expanded opportunities and access to additional network structures that may otherwise be restricted. In short, the inherent inequalities faced by low socioeconomic status in accessing formal social capital can be moderated by the comprehensiveness of the welfare state.

H2 Differences in individual's formal networks across SEGs will be lower in countries with more comprehensive welfare states.

6.2.3 Trust

The literature so far has mainly addressed the network inequalities between SEGs. The potential inequalities in trust outcomes are still relatively underexplored. The first analytical chapter confirmed the positive relationship between the reported levels of trust and both universalism and generosity. Particular emphasis was on the inclusive solidaristic environment created by the universal welfare state. Reducing the cultural distance between the 'us' and 'them' is an essential prerequisite for maintaining trust. Whether the generalised levels of trust found within countries follow the trust levels between SEGs is an interesting and important question. The initial analysis would seem to indicate that there is likely to be some variation between SEGs in their levels of trust. We begin by addressing the evidence within the literature for this potential variation.

How the levels of trust vary between SEGs may not be as one might expect. Support for greater welfare state redistribution is higher in lower socioeconomic groups (Fernandez and Manzano

2016) and less so for the more upwardly mobile, who are less likely to benefit from redistributive welfare policies (Alesina and Giuliano, 2011). The same association may not follow for trust. Instead, the unequal distribution of resources and risks associated with market participation set within the welfare state structure may reflect the socioeconomic position (class stratification) individuals find themselves in (Edlund and Lindh 2013). Those groups considered to be in a more precarious position within a market economy, the low-status low education, are simultaneously more likely to feel the adverse effects of the market while the least able to demand support from the welfare state. This position was indicated in the previous chapter, with the higher educated and those with higher income more likely to report higher levels of trust.

This role of inequality shaping trust is a central focus for Uslaner (2010:128-130), who suggests the unequal distribution of resources creates low trust, creating more inequality. [This position is reminiscent of the vicious circle of social capital decline advocated by the capital-accumulation thesis in the first chapter - see van Oorschot and Finsveen 2010]. Where people understand the system as stacked against them, it can create a bleak future and a perceived lack of control over an individual's circumstances. This distorted notion of fairness from the top down is then replicated horizontally, undermining trust in others. Here, the normalisation of inequality provides a fertile ground for conflict between groups [creating a cultural distance] that leads to institutional and interpersonal distrust.

There is a clear equalising potential for the welfare state in addressing conflict and inequality. By promoting solidarity through universalism and social inclusion through generous welfare provision, the welfare state can moderate inequalities between SEGs. This position of inclusivity is where Larsen (2007) distinguishes between the trust outcomes of universalism and selective welfare policies. Much in the same way as inequality can breed distrust, residual welfare systems have the potential to generate cultural distance. In residual systems, the lower SEGs are often stigmatised as the undeserving poor, who exploit the system and cannot be trusted. More generous welfare systems that direct resources to the less well-off can assist them in being able to maintain an equivalent social standing. It is the process of inclusion, which can increase the trust of lower SEGs, thus reducing the variation and inequality between groups. Within the empirical literature, there is some mixed empirical support for this proposition.

Employing the WVS (1990), comparing 27 market economies, Knack and Keefer (1997) find that interpersonal trust[13] is positively related to low levels of polarisation- as measured through income inequality[14]. This suggests that welfare systems can have a role to play in reducing inequalities and the social cleavages between classes, potentially resulting in the equalising tendencies of social trust. This finding is corroborated by Delhey and Newton (2003), comparing seven nation-states from the Euromodule survey (1999-2001). They observe greater social trust where perceived conflict [measured through a summation of six social conflicts[15]] between social groups is at its lowest. Oorschort and Finsveen (2010) also find a reduction in interpersonal trust inequalities with larger social expenditure. Counter to this, Vergolini (2011), using the ESS (2002), after accounting for economic and social stratification, finds very little evidence for the positive effects of socio-democratic welfare systems on social cohesion between SEGs (as measured through institutional and generalised trust). His results are somewhat surprising in that they show the weakest effects of stratification within the liberal regime. These studies provide a mixed picture of the welfare states influence on social capital inequalities. Social expenditure shows a reduction in interpersonal trust in some cases (Oorschort and Finsveen 2010), while in others, more residual systems indicated greater equality in levels of trust (Vergolini 2011).

6.2.4 Hypothesis

Acknowledging the potential for conflict between socioeconomic groups, which the literature suggests will result in different outcomes for trust, the importance of the universal solidaristic welfare state is a critical factor in understanding social capital inequalities between different SEGs. Here more generous welfare provision is expected to reduce the perceived conflict between SEGs.

Where universalism is more substantial, the cultural distance between SEGs should be less. It is also possible that ALMPs will have a positive effect, with welfare systems actively providing greater inclusion through generous social policies. Enhancing or improving connection to the labour market can improve the perceived difference in opportunities, with better integration

[13] (Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?)
[14] Gini-coefficient
[15]: poor and rich people, unemployed and people with jobs, management and workers, young and older people, men and women, nationals and immigrants

leading to greater trust in the systems of delivery. As such, the levels of inequality faced between SEGs in trust outcomes will be moderated by generosity.

H3 The difference in the levels of an individual's institutional and interpersonal trust between socioeconomic groups will be more equal in more generous and universal welfare states.

6.3 Data and Methods

The detail for the data, variables and methods is located in the methodology section.

6.3.1 Research Frame

As in the previous analytical chapter, my research hypotheses are concerned with individuals clustered within countries and the influence of country-level characteristics on individual social capital. Multilevel models are therefore adopted to reflect the hierarchical nature of the data. Previously the linear model incorporated random intercepts, allowing differences between countries in the average value of the dependent variable (social capital). There is also the expectation that the relationship between the explanatory (welfare state characteristics) and the dependent variable will differ between groups (Bosker and Snijders 2012). Given the focus in this chapter on country differences in the effect of socioeconomic factors on the levels of individuals' social capital, random slopes are introduced to the model to allow regression coefficients to vary across countries and enables us to address the within-country welfare state variation.

The detail for the data, variables and methods is located in the methodology section.

6.3.2 Individual-level

The central individual variables of interest for this analysis are socioeconomic groups, which within the context of the hypothesis are those groups where competition over resources is likely to be most significant. Education provides access to cultural capital found to be important for all forms of social capital. Income is the most significant predictor of social capital. It is an essential resource mobilised to generate all forms of social capital. Although not always significant in the previous models, receiving social benefits is vital when we consider how variation in social policy design will affect their access to networks, ability to participate, and

trust in the system of provision. Generous entitlement can ensure adequate coverage, while more universal systems can reduce the stigma associated with support and encourage take-up. Similarly, variation in how much welfare states reduces the risks of unemployment, enabling individuals to maintain existing networks, or provide access to new networks through policies, will affect the inequalities experienced between the employed and unemployed groups.

6.3.3 Random Slope Model

In assessing the specific variation between SEGs, a random slope model is conducted for each variable (the statistical notation is located within the methodology chapter). To maintain the dimensionality of social capital, this means applying several models for each dependent variable. To make this manageable to the reader, we report the information of substantive interest to the central questions of this chapter: Are there cross-national differences in social capital inequalities between SEGs, and can the welfare state explain these differences?

Each set of analyses began with the random intercept model (chapter five), containing all individual-level variables, before introducing the slope to observe its significance and viability for further investigation. Country-level variables are included before testing for the interaction effects, along with country controls, to confirm the significance of the findings.

6.4 Results

6.4.1 Cross-national differences in informal network inequalities

In the previous chapter, we confirmed the significant positive effect of income (β=.250) and education (β=0.14) on informal networks, while the unemployed (β=-.051) and benefits recipients (β=-.031) were less likely to have access to informal networks. In the random slopes model, these effects are allowed to vary across countries. Table 6.1 provides the results of the slopes models without country-level controls. The average effect reported in the table is the overall association between each socioeconomic factor (x) and social capital (y) across countries. The slope variances (U) confirm whether the effects of each socioeconomic factor varies significantly across countries, with the 95% (C.I) showing the range of estimated effects across countries. The likelihood-ratio (LR) test provides statistical confirmation for the improvement of the random slopes model over the previous intercept model. All slope

variance estimates are significant across all socioeconomic factors. The variance for income is particularly large (var=0.327, p=<.05).

Figure 6.3 presents the differences in income slopes across countries, which shows the importance of income for informal networks is the least in Spain and the largest in the Netherlands (compared to the global average). The variance estimates for tertiary education (var =.000, p=<.001), the unemployed (var=.001, p=<.001), and benefit recipients (var=.001, p=<.001), are all relatively small, though do confirm there are differences between countries and fit the data better, compared to the previous random intercept models. Figure 6.4 illustrates the cross-national differences in benefit slopes. Here the negative association between receiving benefits and informal networks is the largest in the UK and the least in Denmark. The significant variance estimates for all socioeconomic factors show there are differences in informal network outcomes across countries. With this in mind, the next question seeks to address whether the welfare state can explain these differences in informal network inequalities as the hypothesis predicted.

Table 6.1: Multilevel random slopes model: the country effects of socioeconomic factors in informal networks

	Income	Tertiary education	Unemployed	Benefit recipient
Average effect	0.494**	0.014**	-0.052***	-0.031***
95% range (C.I)	0.187, 0.801	0.004, 0.024	-0.065, -0.040	-0.044, -0.018
Slope variance (U)	0.327*	0.000***	0.000***	0.001***
LR[a]	21.04***	30.97***	10.57**	24.42***
df	13	14	13	13

Source: EQLS 2011/2012.
N level 1=28,032; N level 2=29 countries Level 1 controls(all models)= gender, age, income, education, unemployed, cohabitation, benefits and domicile, +p<0.10 *p<0.05 **p<0.01, ***p<0.001, LR[a]= difference between random slope and random intercept model

Figure 6.3: Ranked country income slopes: the association between income and informal networks across countries

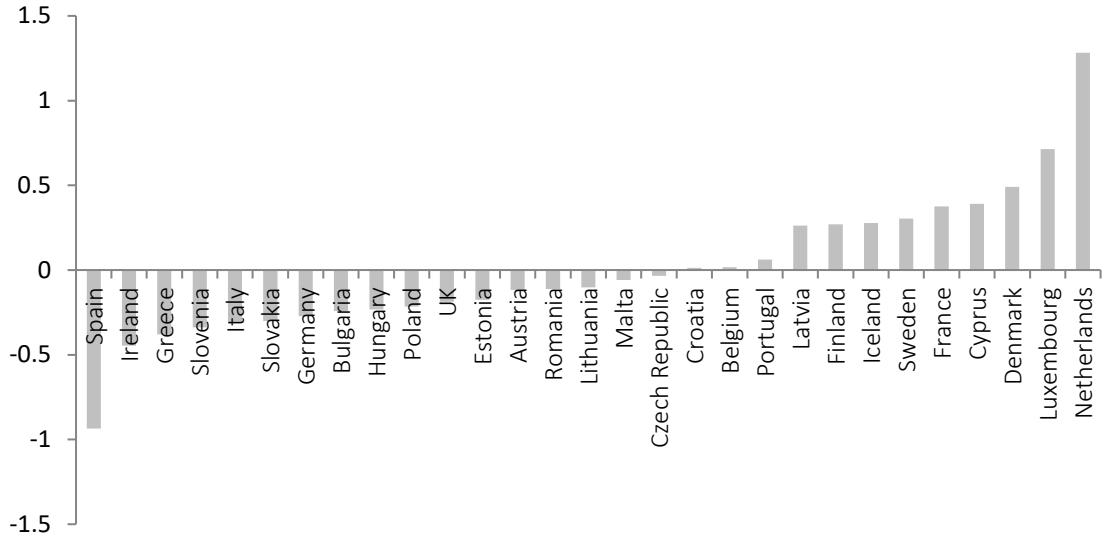
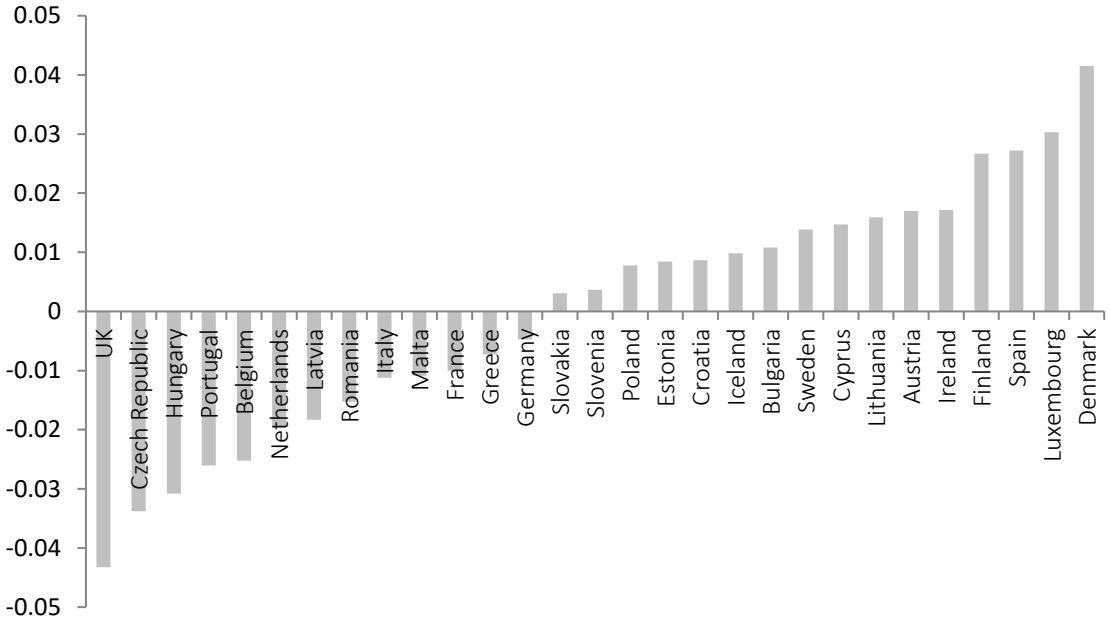


Figure 6.4: Ranked country benefit slopes: the association between receiving benefits and informal networks across countries



6.4.2 Generosity and informal network inequality

Table 6.2 provides the random slopes and cross-level interactions for generosity and each SEG. The slope is the average effect of each socioeconomic factor in countries with average levels of generosity. The interaction between each SEG and net replacement rate indicates whether the individual effects vary significantly across countries according to generosity levels. Our hypothesis predicted that generosity would reduce the informal networks inequalities between SEGs. The results of the models do not support this prediction. The interactions for individuals who are unemployed and those in receipt of benefits are non-significant. Therefore, while there are country-level differences in the outcome of informal networks for these two groups, generosity does not explain the differences.

Both income and tertiary education interaction terms were significant, although they were not as expected. The interaction term with income and net replacement rate reports a positive significant coefficient, β=.025, p=<.05, suggesting that income is slightly more strongly related to informal networks in countries with greater generosity than countries with less generosity. Figure 6.5 presents the interaction effect. These findings suggest that in countries with high net replacement rates, the gap between income groups is larger. In contrast, countries with low net replacement rates have slight income differences in informal social capital. In other words, inequality in access to informal networks across income groups is larger in more generous welfare states.

The interaction term between tertiary education and replacement rates, although small, was positive and statistically significant β=.001, p=.05. Once again, this suggests that generosity widens the informal network inequalities, in this case, between the tertiary and non-tertiary educated. Therefore, while the average levels of informal social capital decrease with generosity, the effect is more negligible for those with higher incomes and tertiary education. These findings align with van der Meer et al. (2009), who find greater spending crowds out informal networks for lower-income groups and counter to Gesthuizen et al. (2008), who find greater spending reduces the importance of education for informal networks.

Based on the results of the analyses, we reject the first hypothesis that generosity reduces the informal network inequalities between SEGs, with evidence to suggest that the gap between SEGs increases. In the next section, we move on to formal networks to assess whether there

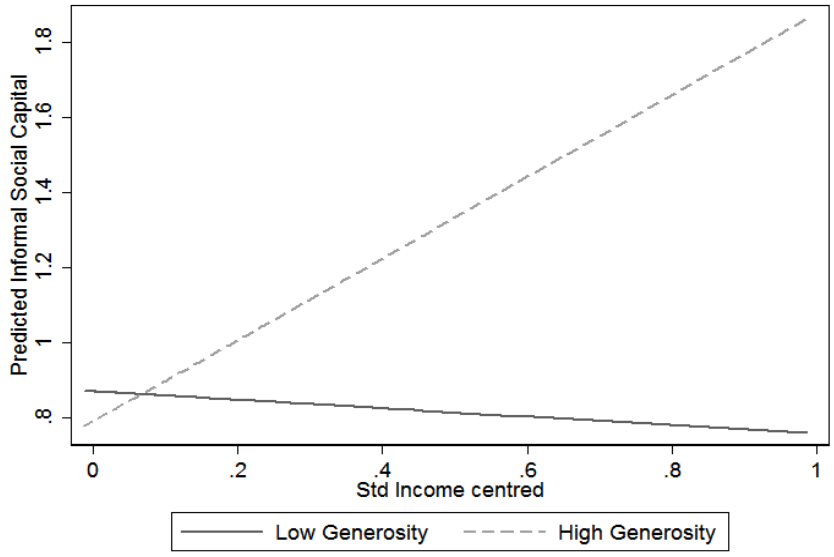
are cross-national differences in the outcomes of political and voluntary networks between SEGs.

Table 6.2: Moderation effects on informal networks (random slopes model with cross-level interactions)

	Income	Education	Unemployed	Benefits
Average effect	0.659***	0.012+	-0.052***	-0.031***
Total net replacement rate	-0.162***	-0.162***	-0.162***	-0.162***
c_Net replacement rate × Income	0.025*			
c_Net replacement rate × Education		0.001*		
c_Net replacement rate × Unemployed			0.000	
c_Net replacement rate × Benefits				-0.001
cons	0.876***	0.854***	0.874***	0.858***
var(individual)	0.047***	0.047***	0.047***	0.047***
var(country)	0.003***	0.003***	0.002***	0.002***
var(Slope)	0.453*	0.000***	0.000***	0.001***
LR[a]	3.95*	3.99*	0.16	1.06

Source: EQLS 2011/2012
N level 1=28,032, Level 1 control variables = gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, level 2 controls=Net replacement rate, Non-means-testing, GDP, + p<0.10 *p<0.05 **p<0.01 ***p<0.001, LR[a] Null=random slopes model with controls

Figure 6.5: Cross-level interaction between income and net replacement rate, informal networks



6.4.3 Cross-national differences in formal network inequalities

The results of the fixed models highlighted the importance of education (volβ=.162, polβ=.132) and income (volβ=.300, polβ=.132) for voluntary and political networks with lower levels of participation for the unemployed (volβ=-.014, polβ=-.027) and benefits recipients (β=-.008). Perhaps surprisingly, benefit recipients indicated greater political participation compared to non-recipients (β=.007).

Table 6.3 provides the results of the random slopes models, where we observe whether the effects of socioeconomic factors on formal networks vary across countries.

The income slope variance is considerable for voluntary networks (var=1.068, p=<.05), suggesting considerable variation in income inequalities across countries. The slope variance for political is only significant and the 90%-level (var=0.257, p=<.10), though the LR test confirms a better fitting model (LR=6.68, p=<.05). The slope variance is significant for the unemployed group (var=.000,p=<.001) in voluntary networks. However, the LR test does not confirm a better fitting model than the previous intercept model, suggesting that the cross-national differences are relatively small. All other models confirm the addition of the slope is a better representation of the data, except for the benefit slope for voluntary networks, which is only significant at the 90%-level (LR=5.42, p=<.10).

Even though the education slope variances are small for both voluntary (var=.001, p=<.001) and political networks (var=.001, p=<.001), there is cross-national variation, which is more easily interpreted in Figure 6.6 and

Figure 6.7. Here the importance of education for access to voluntary networks is higher in the UK and Ireland and the least important in Bulgaria (compared to the global average). Education is also highly important in the UK for political participation, along with Germany and the least in Estonia and Romania.

According to the results of the random slope models, the effect of socioeconomic factors on formal networks varies cross-nationally. In the next section, we examine whether the welfare state reduces these network inequalities as our hypothesis predicted.

Table 6.3: Multilevel random slopes model: the country effects of socioeconomic factors in formal social capital

		Voluntary	Political
Income	Average effect	1.034***	0.532***
	95% range (C.I)	0.534 < 1.533	0.259< 0.831
	Slope variance (U)	1.068*	0.257+
	LR[a]	10.63**	6.68*
Tertiary education	Average effect	0.158***	0.125***
	95% range (C.I)	0.143 < 0.174	0.110 < 0.140
	Slope variance (U)	0.001***	0.001***
	LR[a]	14.29***	66.29***
Unemployed	Average effect	-0.028***	-0.011
	95% range (C.I)	-0.040 < -0.156	-0.024 < 0.003
	Slope variance (U)	0.000***	0.001***
	LR[a]	0.84	14.17***
Benefit recipient	Average effect	-0.008+	0.009*
	95% range (C.I)	-0.018 < 0.005	0.000< 0.018
	Slope variance (U)	0.000***	0.000***
	LR[a]	5.41+	14.17***

Source: EQLS 2011/2012.
N level 1=28,032; N level 2=29 countries Level 1 controls(all models)= gender, age, income, education, unemployed, cohabitation, benefits and domicile, +p<0.10 *p<0.05 **p<0.01, ***p<0.001, LR[a]= difference between random slope and random intercept model

Figure 6.6: Ranked tertiary education slopes, the association tertiary education and voluntary networks across countries

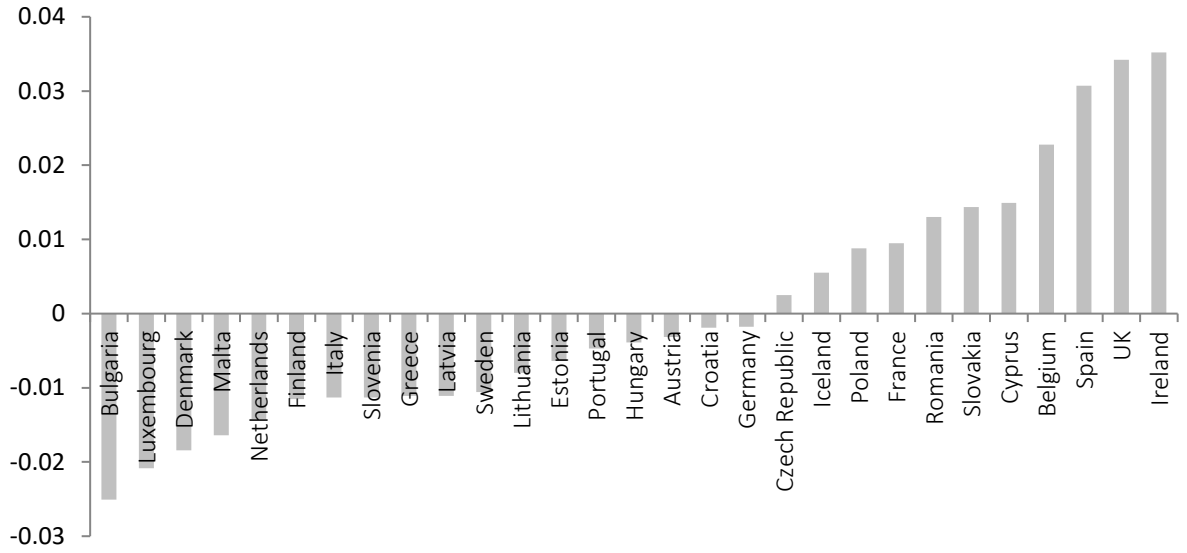
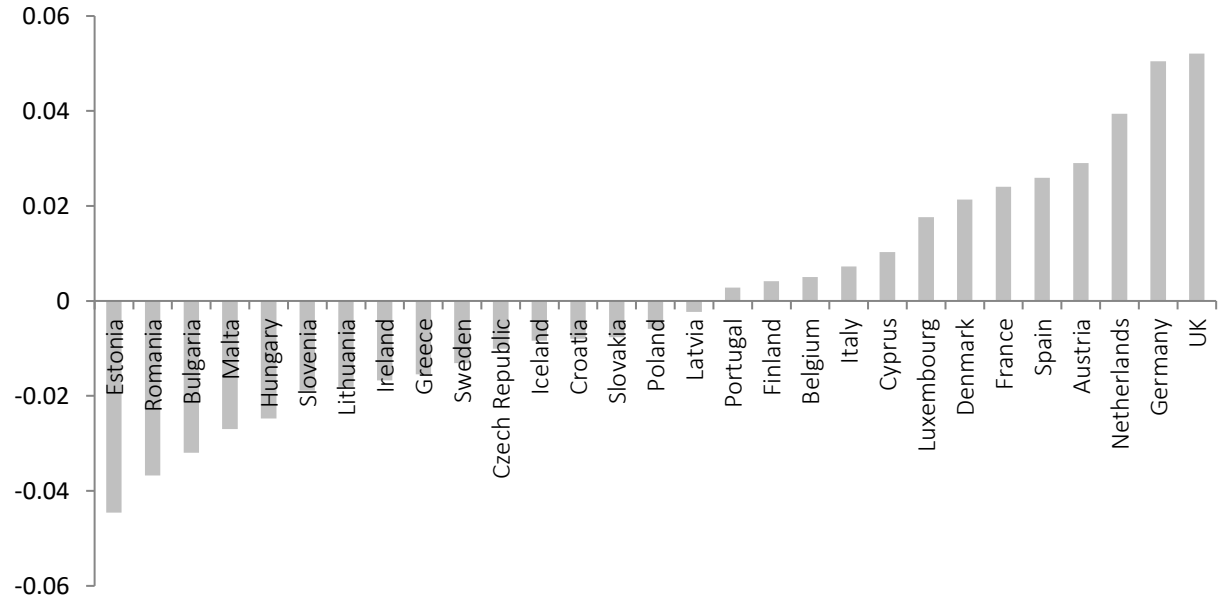


Figure 6.7: Ranked tertiary education slopes, the association tertiary education and political participation across countries



6.4.4 The welfare state and formal network inequality

Building on the random slopes models, Table 6.4 and Table 6.5 includes the cross-level interactions for both generosity and universalism with each SEG, indicating whether the combined effect of our welfare state measures and socioeconomic factors have an additional impact on the outcome of formal networks. The hypothesis predicted that generosity would moderate the formal network inequalities between SEG. However, none of the interactions is significant for voluntary networks (Table 6.4). Suggesting that while there are cross-national differences in the association between each socioeconomic factor (income, tertiary education, benefit recipients, the unemployed) and voluntary networks, generosity does not explain the inequalities between SEGs and voluntary networks. Previous studies have indicated that greater social spending can both decrease (van Ingen and van der Meer, 2011) and increase (Gesthuizen et al., 2008) the importance of education for formal networks, which we are unable to clarify.

We do, however, notice a moderating effect with the universalism measure. The interaction term with income and non-means-testing reports a significant negative coefficient (β=-0.137, p=<.01), suggesting that income is less important for voluntary networks in countries with a greater universalism. Figure 6.8 presents the interaction effect, which shows that income is positively associated with voluntary networks in countries with low universalism and has no effect in countries with high universalism. In other words, income only matters for voluntary networks in countries with low levels of universalism. Arguably, this represents an equalising mechanism; in the sense that in countries with high universalism, income is no longer associated with voluntary networks.

In terms of political participation (Table 6.5), the interactions terms with generosity and income, unemployed and benefit recipients, were all non-significant. The interaction terms with universalism and the unemployed and benefit recipients were also non-significant. We did, however, find a significant interaction term with income and universalism reporting a negative coefficient (β=0.052, p=<.10), although this is only significant at the 90%-level. The LR test also confirmed an improvement over the random slopes model at the 90%-level (LR=2.74, p=<.10). The interaction term is illustrated in Figure 6.10, which shows that in countries with high universalism, income is less important for political participation than countries where universalism is low, where income matters more. Although the significance

level suggests some caution, the interaction term indicates a reduction in inequalities for political participation outcomes across income groups in more universalist welfare states.

Where we do notice a significant moderating effect of generosity and universalism is with tertiary education. The interaction term with tertiary education and net replacement rate reports a positive significant coefficient (β=0.001, p=<.05), and the interaction term with tertiary education and non-means-testing reports a positive significant coefficient (β=0.004, p=<.001). In these instances, both generosity and universalism increase the importance of education for political participation, implying a widening of social capital inequalities instead of the equalising effect predicted. Although the overall effect of generosity and universalism on political participation is non-significant, individuals with a tertiary education will benefit more from increasing welfare state support. Figure 6.9 presents the interaction effect between universalism and tertiary education, which illustrates the slight increase in political participation outcomes for tertiary-educated when universalism is larger.

We reject the second hypothesis that generosity reduces participatory inequalities between SEGs. We also note that generosity and universalism have the potential to widen inequalities between tertiary and non-tertiary educated in political participation outcomes. There is an indication of a potential equalising effect with universalism reducing the importance of income for political participation and cancelling out the effect of income on voluntary networks, suggesting the hypothesis still holds for universalism and income.

Table 6.4: Moderation effects on voluntary networks (random slopes model with cross-level interactions)

	Income	Education	Unemployed[b]	benefits
Average effect	1.034***	0.158***	-0.028***	-0.008+
Total net replacement rate	0.115***	0.115***	0.115***	0.115***
c_Net replacement rate × Income	-0.005			
c_Net replacement rate × Education		0.000		
c_Net replacement rate × Unemployed			0.000	
c_Net replacement rate × Benefits				0.000
LR[a]	0.03	0.04	-	0.52
Non-means-testing	0.049	0.049	0.049	0.049
c_Non-means × Income	-0.137**			
c_Non-means × Education		-0.001		
c_Non-means × Unemployed			0.000	
c_Non-means × Benefits				0.001
LR[a]	9.98**	0.34	-	1.22
cons	0.055*	0.008	0.055*	0.061**
var(individual)	0.070***	0.070***	0.070***	0.070***
var(country)	0.003***	0.002***	0.002***	0.002***
var(slope)	0.470+	0.001***	0.000***	0.000***

Source: EQLS 2011/2012
N level 1=28,032, Level 1 control variables = gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, level 2 controls=Net replacement rate, Non-means-testing, GDP, + p<0.10 *p<0.05 **p<0.01 ***p<0.001, LR[a] Null=random slopes model with controls [b]Reml estimation was applied, this prevented between model significance testing

Figure 6.8: Cross-level interaction between income and non-means-testing, voluntary networks

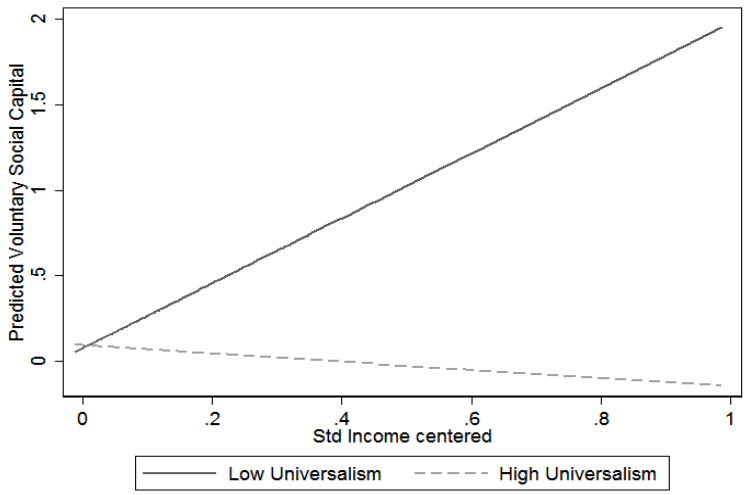


Table 6.5: Moderation effects on political participation (random slopes model with cross-level interactions)

	Income	Education	Unemployed	Benefits
Average effect	0.532***	0.125***	-0.011	0.009*
Total net replacement rate	0.038	0.038	0.038	0.038
c_Net replacement rate × Income	0.007			
c_Net replacement rate × Education		0.001*		
c_Net replacement rate × Unemployed			0.000	
c_Net replacement rate × Benefits				0.000
LR[a]	0.48	7.70**	0.52	0.05
Non-means-testing	0.049	0.049	0.049	0.049
c_Non-means × Income	-0.052+			
c_Non-means × Education		0.004***		
c_Non-means × Unemployed			0.001	
c_Non-means × Benefits				0.000
LR[a]	2.74+	11.44***	0.34	0.01
cons	0.090***	0.052***	0.090***	0.090***
var(individual)	0.045***	0.045***	0.045***	0.045***
var(country)	0.002***	0.002***	0.002***	0.002***
var(slope)	0.212*	0.001***	0.001***	0.000***

Source: EQLS 2011/2012
N level 1=28,032, Level 1 control variables = gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, level 2 controls=Net replacement rate, Non-means-testing, GDP, + p<0.10 *p<0.05 **p<0.01 ***p<0.001, LR[a] Null=random slopes model

Figure 6.9: Cross-level interaction between tertiary education and non-means-testing, political networks

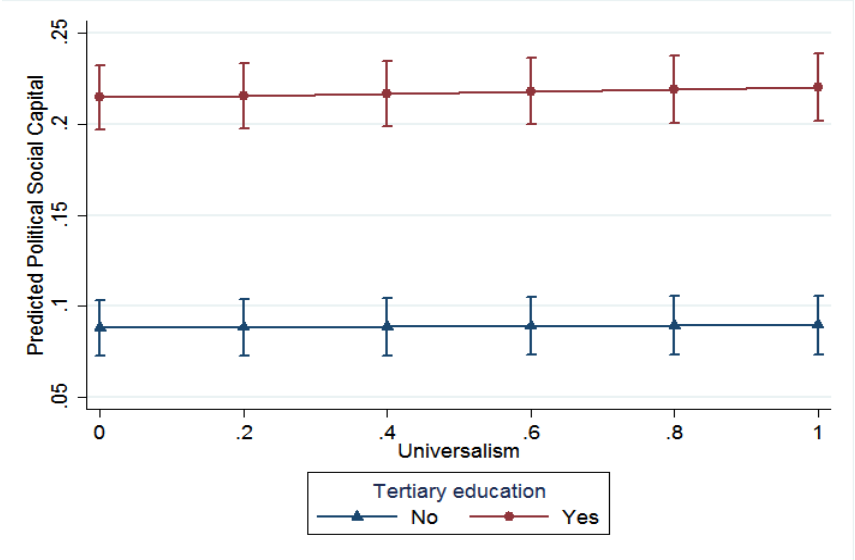
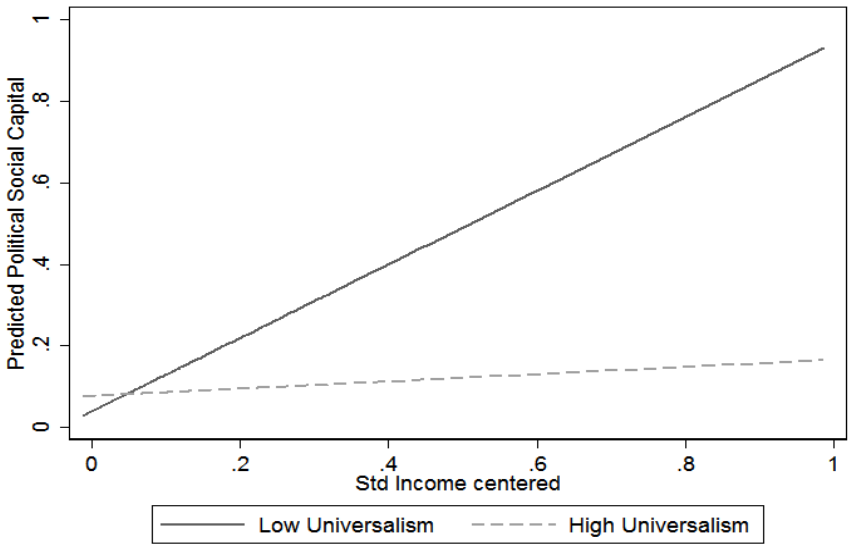


Figure 6.10: Cross-level interaction between income and non-means-testing, political networks



6.4.5 Cross-national differences in trust inequalities

The previous random intercept models confirmed the significant associations between SEGs and trust outcomes. Income (β=.456) and tertiary education (β=1.04) was positively related to interpersonal trust. In contrast, the unemployed (β=-.029) and benefits recipients (β=-.016) reported a negative association. We observe similar effects for institutional trust outcomes with income (β=.328), education (β=0.56), the unemployed (β=-.039) and benefits recipients (β=-.013). In this section, we explore whether these differences in trust outcomes between SEGs vary across countries. Table 6.6 provides the results of the random slope models with and without country-level controls. All slopes are statistically significant, with the LR test confirming the slopes models are a better fit than the previous random intercepts models.

The slope variances for both interpersonal (var 3.888, p=<.05) and institutional trust (var 1.011, p=<.05) are again large, suggesting there may be considerable variation in income inequalities across countries. Although the slope variances for receiving benefits (var=.000, p=<.001), tertiary education (var=.001, p=<.001) and the unemployed (var=.001, p=<.001) are small, they are all significant. Figure 6.11 and Figure 6.12 illustrates the cross-national

variance in trust outcomes for benefit recipients. Here the adverse effect of receiving benefits on interpersonal trust is the largest in the UK and the lowest in Denmark and Spain (compared to the global average). The UK also reports the largest negative effect of receiving benefits on institutional trust, while the lowest is in Bulgaria (compared to the global average).

The statistically significant slope variances, supported by the LR tests, confirm cross-national differences in the effect that socioeconomic factors have on trust. In the next section, we address whether the welfare state measures of generosity and universalism can explain these differences.

Table 6.6: Multilevel random slopes model: the country effects of socioeconomic factors in trust

		Interpersonal	Institutional
Income	Average effect	1.704***	0.897***
	95% range	0.922 < 2.486	0.426< 1.368
	Slope variance (U)	3.388*	1.011*
	LR[a]	25.36***	26.09***
Tertiary education	Average effect	0.105***	0.056***
	95% range	0.090< 0.120	0.039< 0.072
	Slope variance (U)	0.001***	0.001***
	LR[a]	16.47***	70.30***
Unemployed	Average effect	-0.029***	-0.040***
	95% range	-0.043< -0.014	-0.053< -0.026
	Slope variance (U)	0.001***	0.001***
	LR[a]	7.26*	11.78**
Benefit recipient	Average effect	-0.014*	-0.010+
	95% range	-0.026< -0.002	-0.021< -0.002
	Slope variance (U)	0.000***	0.000***
	LR[a]	8.93*	13.02**

Source: EQLS 2011/2012.
N level 1=28,032; N level 2=29 countries Level 1 controls(all models)= gender, age, income, education, unemployed, cohabitation, benefits and domicile, +p<0.10 *p<0.05 **p<0.01, ***p<0.001, LR[a] = difference between random slope and random intercept model

Figure 6.11: Ranked benefit slopes, the association between receiving benefits and interpersonal trust across countries

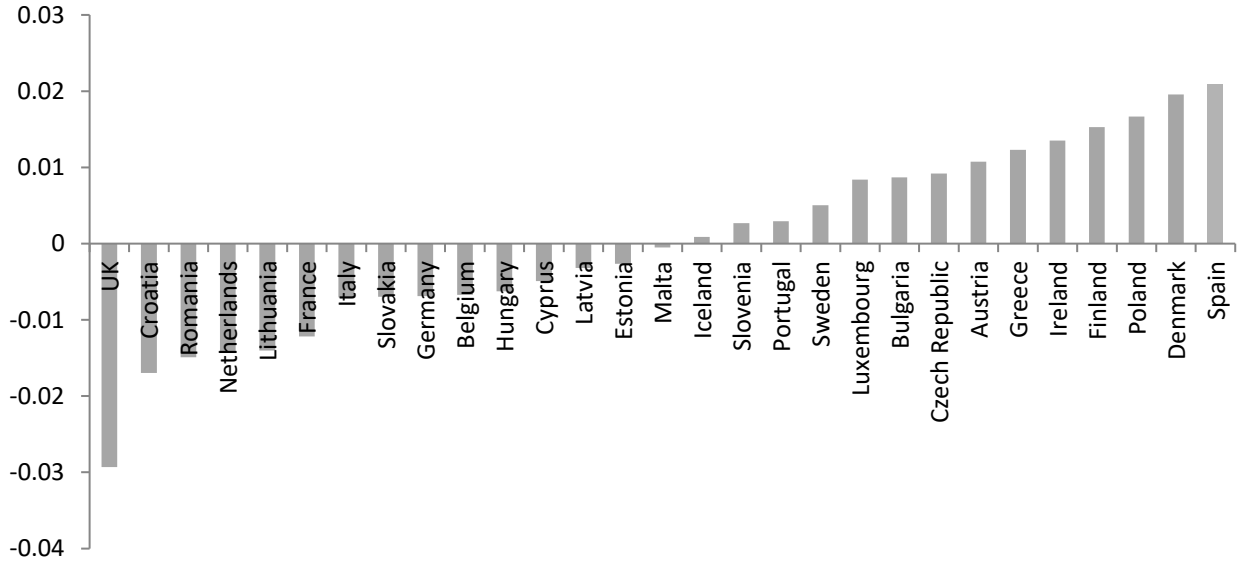
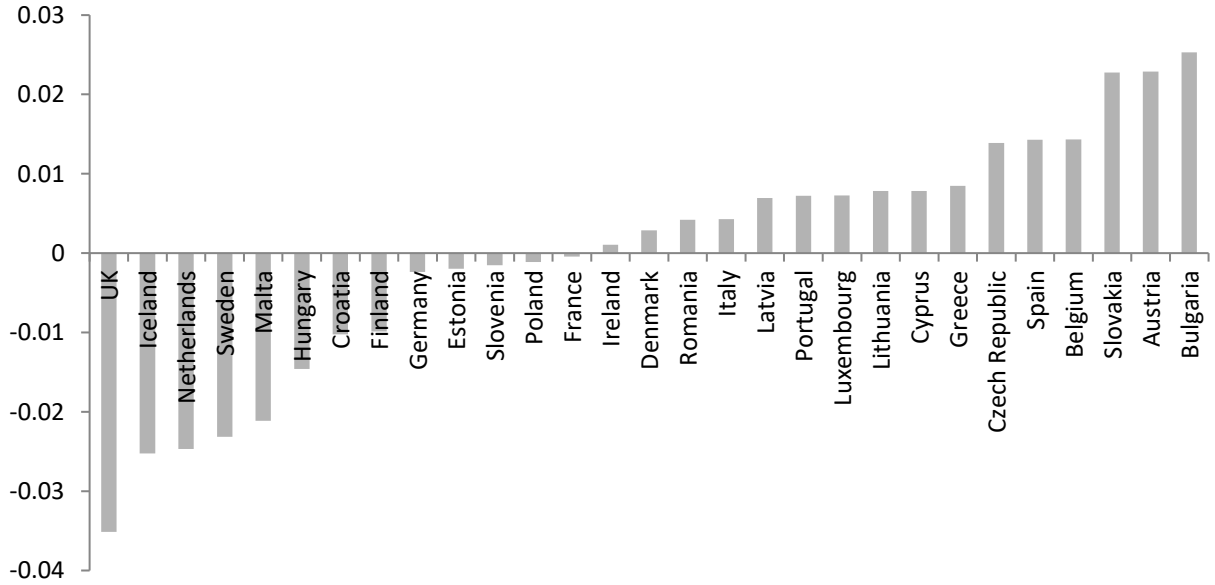


Figure 6.12: Ranked benefit slopes, the association between receiving benefits and institutional trust across countries



6.4.6 Generosity, universalism and trust inequalities

Table 6.7 and Table 6.8 provide the random slopes and cross-level interactions for generosity and universalism with each SEG. These models allow us to observe whether the combined effect of our welfare state measures with socioeconomic factors has an additional impact on interpersonal and institutional trust outcomes. Our hypothesis predicted that generosity and universalism would moderate the influence of socioeconomic factors, reducing trust inequalities between SEGs. The results of the analyses do not support this prediction. There are no significant interactions observed for income, benefit recipients or the unemployed with the net replacement rate and non-means-testing. The two significant moderating interactions observed are again with net replacement rate and education. The positive result (β =.001, p=.05) found in both trust models suggests the generosity increases the gap between tertiary and non-tertiary educated, widening the institutional and interpersonal trust inequalities. As average levels of generosity are associated with an increase in interpersonal trust, people who are tertiary educated will have an additional benefit from an increase in generosity. We reject the third hypothesis that generosity and non-means testing reduces trust inequalities between SEGs and acknowledge the potential of generosity to widen the gap between tertiary and non-tertiary educated in trust outcomes.

6.4.7 Summary

The results of the random slope models confirmed that the effect of socioeconomic factors on social capital varies cross-nationally. In exploring this variation, introducing cross-level interactions enabled us to understand whether generosity and universalism would moderate the social capital inequalities between SEGs. The analyses suggested little support for generosity and universalism, explaining the slope variance. Where we did find evidence of moderating effects, it was often counter to our predicted hypotheses. It appears that generosity provides an additional benefit to tertiary educated people across all dimensions of social capital, except voluntary networks. Universalism also provides an additional benefit for tertiary educated people in terms of political participation outcomes. There was also a widening of inequalities in access to informal networks, with generosity increasing the importance of income. Where we did notice a potential reduction in social capital inequalities is with universalism reducing the importance of income for formal networks. Before we move to a more detailed discussion of these results and contextualise the findings, we consider a direct social policy measure.

Table 6.7: Moderation effects on interpersonal trust (random slopes model with cross-level interactions)

	Income	Education	Unemployed	Benefits
Average effect	1.642***	0.105***	-0.028***	-0.014*
Net replacement rate	0.126+	0.126+	0.126+	0.126+
c_Net replacement rate × Income	0.013			
c_Net replacement rate × Education		0.001*		
c_Net replacement rate × Unemployed			0.000	
c_Net replacement rate × Benefits				0.000
LR	0.54	4.84*	1.87	1.69
Non-means-testing	0.126***	0.126***	0.126***	0.126***
c_Non-means × Income	-0.012			
c_Non-means × Education		0.002		
c_Non-means × Unemployed			0.002	
c_Non-means × Benefits				0.000
LR	0.37	2.49	3.62	1.19
cons	0.285***	0.257***	0.303***	0.276***
var(individual)	0.065***	0.065***	0.065***	0.065***
var(country)	0.008***	0.007***	0.008***	0.008***
var(slope)	2.974*	0.000***	0.000***	0.001***

Source: EQLS 2011/2012
N level 1=28,032, Level 1 control variables = gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, level 2 controls=Net replacement rate, Non-means-testing, GDP,
+ p<0.10 *p<0.05 **p<0.01 ***p<0.001, LR, Null=random slopes model

Table 6.8: Moderation effects on institutional trust (random slopes model with cross-level interactions)

	Income	Education	Unemployed	Benefits
Average effect	0.922***	0.056***	-0.040***	-0.009+
Net replacement rate	0.143*	0.143*	0.143*	0.143*
c_Net replacement rate × Income	0.022			
c_Net replacement rate × Education		0.001*		
c_Net replacement rate × Unemployed			0.000	
c_Net replacement rate × Benefits				0.000
LR	1.51	7.26**	0.05	.00
Non-means-testing	0.077	0.077	0.077	0.077
c_Non-means × Income	0.012			
c_Non-means × Education		0.002		
c_Non-means × Unemployed			0.000	
c_Non-means × Benefits				0.000
LR	0.05	1.05	.036	0.43
cons	0.189***	0.257***	0.187***	0.858***
var(individual)	0.047***	0.047***	0.047***	0.047***
var(country)	0.005***	0.005***	0.005***	0.005***
var(slope)	1.001*	0.000***	0.001***	0.001***

Source: EQLS 2011/2012,N level 1=28,032, Level 1 control variables = gender, age, income, education, unemployed, cohabitation, benefits and domicile, N level 2=29 countries, level 2 controls=Net replacement rate, Non-means-testing, GDP, + p<0.10 *p<0.05 **p<0.01 ***p<0.001, LR, Null=random slopes model

6.4.8 Additional welfare state analyses

So far, we have illustrated that, except for informal networks, average levels of generosity and universalism are associated with positive social capital outcomes. However, when exploring how social capital varies between SEGs, welfare state generosity does not appear to help reduce inequalities and may have an unintended exacerbation of existing inequalities, particularly regarding education groups. To contextualise this observation, we consider a direct measure of social capital beyond the broad qualitative measure of welfare generosity.

6.4.9 Active labour market spending on training and social capital inequalities

Having already discussed the significance of the variances in the initial analysis, the focus here is solely on the outcome of the interactions effects that can further explain the slope variance. Table 6.9 provides the results of the slope and cross-level interactions for ALMP spending on training with each socioeconomic factor across all dimensions of social capital. The average effect reports the slope model for each socioeconomic factor on each social capital dimension (average increase in DV). Centred LM spending on training is the main effect. The interaction terms and corresponding LR tests represent five separate models and statistical confirmation per socioeconomic factor (5 DVs × 4 SEGs= 25 cross-level interactions, 25 random slope models). The final group of results are the slope variance for each SEG and each social capital dimension.

ALMP spending on training reduces the importance of income for voluntary social capital (β=-3.673, p<.05). As illustrated in, income is increasingly important for voluntary participation outcomes in countries with low labour market spending and less so in countries with higher spending. The implication being that greater spending on training may reduce income inequalities in voluntary networks. While all individuals benefit from an increase in LM spending, associated with a 0.220 increase in voluntary networks, those with lower incomes benefit more. This finding is in line with Anderson (2009), who finds the beneficial outcomes of ALMPs on voluntary associations are more pronounced for labour market outsiders.

Assessing the moderating effects between education groups, we notice one significant interaction for political participation (β= 0.091, p<.05). Here ALMP spending provides an additional benefit to participation outcomes for those who are tertiary educated. Once again, increased spending suggests a slight widening of inequalities between tertiary and non-tertiary educated groups, which is counter to our predictions. Figure 6.14 illustrates that while both

tertiary and non-tertiary educated see an increase in political participation with increased LM spending, the increase is greater for tertiary educated. There are two further significant interactions within the models at the 90%-level, both for informal networks. ALMP spending has a positive effect on the unemployed (β= 0.072, p<.10) and benefit recipients (β= 0.005, p<.10). As receiving benefits and being unemployed negatively relates to informal network outcomes, increased spending can moderate this adverse effect, reducing the informal network inequalities. Although the significance of the findings suggests some caution, Anderson (2009) finds a similar result of ALMPs improving social ties for those who receive unemployment benefits.

6.4.10 Summary of additional welfare state analyses

There is some evidence of the moderating effects of ALMP spending reducing socioeconomic inequalities regarding voluntary and informal networks, but not for trust outcomes. There is a reduction in the importance of income for voluntary networks, which is more in line with the expected hypothesis. There were also positive effects of spending for the unemployed and benefit recipients, in access to informal networks, in line with the first hypothesis. We also observe a similar widening of inequalities present in the previous analyses, this time with spending widening inequalities between tertiary and non-tertiary educated in political participation. In the next section, we discuss these findings and the earlier analyses within the broader context of the crowding-out debate.

Table 6.9: Moderation effects on social capital (random slopes model with cross-level interactions)

	Informal	Voluntary	Political	Interpersonal	Institutional
Average effect					
Income	0.667***	1.047***	0.528***	1.818***	1.035***
Education	0.013+	0.158***	0.125***	0.105***	0.055***
Unemployed	-0.040***	-0.026***	-0.010	-0.014+	-0.032***
Benefit recipient	-0.038***	-0.009	0.007	-0.020**	-0.013*
c_LM training spending	-0.158+	0.220***	0.046	0.250+	0.193+
c_LM training × income	-0.892	-3.673*	-0.704	-2.533	-1.445
LR[a]	47.44***	6.56*	3.06+	17.05***	29.06***
c_LM training × Education	0.014	0.007	0.091*	0.045	0.039
LR[a]	0.16	0.03	4.69*	1.28	0.74
c_LM training × Unemployed	0.072+	-0.017	-0.052	0.037	0.053
LR[a]	3.00+	5.30*	1.00	0.44	1.52
c_LM training × benefits	0.005+	-0.001	0.000	0.004	0.004
LR[a]	3.43	1.37	0.10	2.05	5.95+
Constant	0.848***	0.017	0.009	0.300***	0.237***
var(country)	0.000***	0.001***	0.001***	0.001***	0.001***
var(individual)	0.047***	0.069***	0.044***	0.065***	0.047***
Slope variance					
Income	0.437***	0.922***	0.261***	3.469***	1.111***
Education	0.001***	0.001***	0.001***	0.001***	0.001***
Unemployed	0.000***	0.000***	0.001***	0.001***	0.002***
Benefit recipient	0.001***	0.000***	0.000***	0.000***	0.000***

N level 1=27,212; N level 2=28 countries Level 1 controls = gender, age, income, education, unemployed, cohabitation, benefits and domicile, level 2 controls= GDP, Net replacement LM spending, +p<0.10 *p<0.05 **p<0.01, ***p<0.001, LR[a], Null= Random slopes with controls

Figure 6.13: Cross-level interaction between income and LM spending on training, voluntary networks

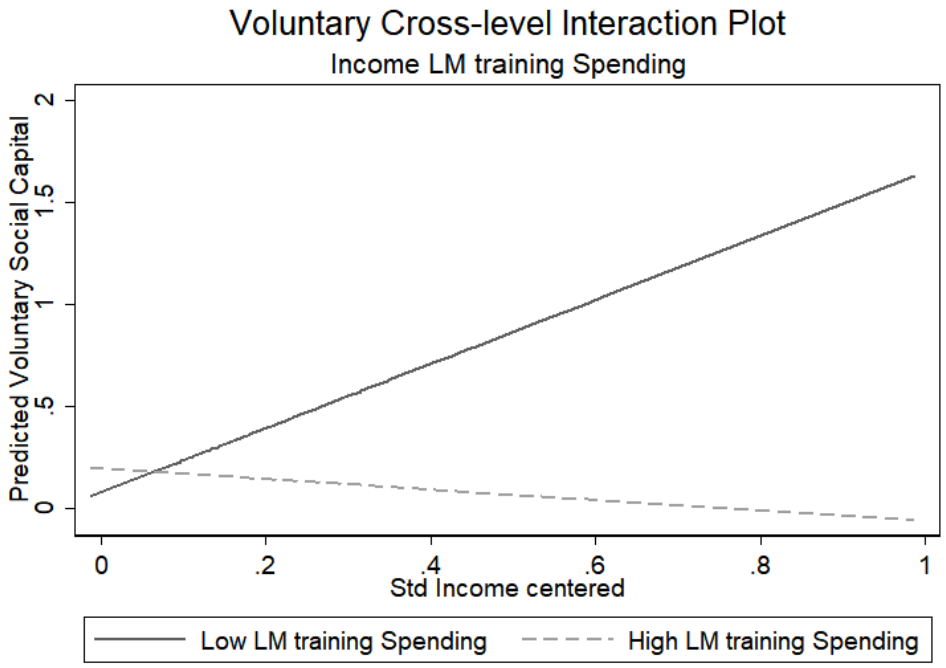
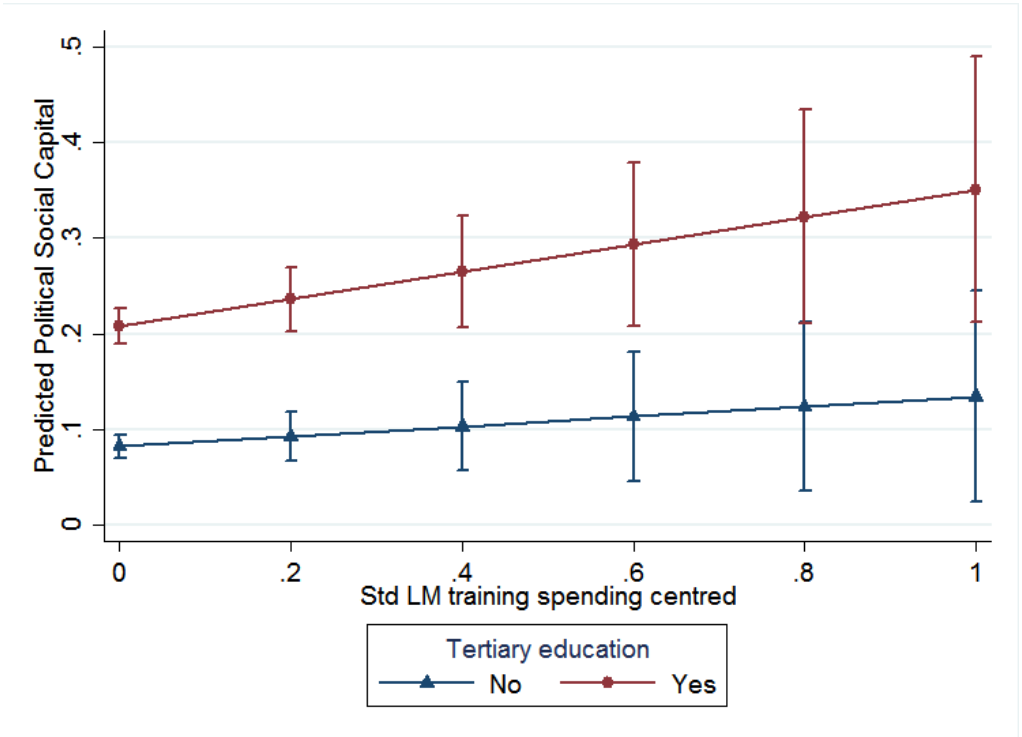


Figure 6.14: Cross-level interaction between tertiary education and LM spending on training, political networks



6.5 Discussion and conclusion

The overarching aim of this chapter was to understand whether cross-national differences could explain variation in social capital outcomes between different socioeconomic groups. Broadly speaking, there was evidence to suggest country-effects matter and can in part explain social capital differences. The vast majority of random slopes were statistically significant, indicating that the effect of socioeconomic factors on social capital varies cross-nationally. The evidence for the welfare state in explaining this between-country variance was somewhat limited. Where we do notice a consistent moderating effect is in the opposite direction expected. It seems that generosity maintains existing class cleavages through educational advantage.

I hypothesised that welfare state generosity and universalism could reduce social capital inequalities between SEGs. As income is central to social capital formation, the expectation was that the welfare state could provide access to capital for those who are economically disadvantaged through generous entitlement, which would offset the adverse effects on income inequality and provide the opportunity to develop networks. The results of the analyses are mixed. On the one hand, universalism reduces the importance of income for voluntary and political networks; on the other hand, generosity increases the importance of income for informal networks. It seems that individuals with higher income are likely to benefit more from greater access to informal networks in countries with higher generosity. In contrast, universalism creates a national context of solidarity and equal opportunity for access to formal networks.

The fact that generosity assists those with higher incomes, improving access to informal networks may relate to greater autonomy. [Particularly in light of the informal social capital dimension composition, which leans towards a slight bias of crowding-out.] Where low-income groups are encouraged to establish informal networks through need, high-income groups can rely on generous systems to provide informal support. At the same time, they can maintain their independence, using existing capital to invest time in informal networks. In such instances, the observation of the increasing importance of income with generosity makes sense. What seems to be the case for low-income groups is that with less access to networks, they are relying on the provisions through welfare state structures for informal social capital, which manifests itself as crowding-out. As a result, we see generosity widening informal network inequalities between income groups.

Another central aspect of understanding social capital outcomes is cultural capital. Once again, our expectation was for the welfare state to reduce social capital inequalities between tertiary and non-tertiary educated. The moderating effects for tertiary education were more consistent across the social capital dimensions, though not in the expected direction. Generosity provides an additional benefit to the tertiary educated for the informal, political, institutional and interpersonal dimensions of social capital. At the same time, universalism shows an increase for tertiary-educated in political participation. This finding suggests that the welfare state supports capital accumulation for the higher educated but does little to increase the social capital potential for those not tertiary educated. It seems that those with existing cultural capital are able to use their advantage to ensure successful practices within the welfare field.

Observing a greater effect of education on trust in comprehensive welfare states does have some concurrence in the broader literature. Frederiksen et al. (2016), using the World Values Survey 2005 to 2009, based on 48 countries and Charron and Rothstein (2016) original survey of 24 European countries in 2010 and 2013, find that the effect of education on trust depends on the level of corruption and the quality of public institutions. Only when the quality of government is sufficiently high does education lead to higher generalised trust (Charron and Rothstein 2016). Where corruption is low, education has a significant positive effect on trust, while in high-corruption settings, education negatively affects trust (Frederiksen et al., 2016). The implication here is that context matters. Where universal and generous welfare systems reflect a similar institutional environment, it perhaps makes sense that we also observe an increase in the effect of education on trust. The higher educated are more reflexive and attune to the institutional context and systems of provision.

Additional analyses using ALMPs provided contextual understanding alongside the applied welfare state measures. Here we did notice that specific active policies towards training did see a reduction in the negative effect of receiving benefits and being unemployed through greater labour market spending for informal social capital. It would seem that some form of increased entitlement is necessary for reducing inequalities in informal network formation between benefit recipients and the unemployed. However, these findings were only significant at the 90%-level, which, considering the number of significance tests, suggests we should be cautious (Bland and Altman 1995).

6.5.1 Limitations

It is essential to bear in mind that our analyses are limited to describing associations, relying on cross-sectional data of a fixed point in time. In order to improve the robustness of the findings, we could test these hypotheses using longitudinal data to confirm that generosity causes social capital inequalities to widen between education groups. Notwithstanding this limitation, the analyses have provided compelling evidence of the potential unintended consequences of generosity on social capital inequalities.

7 The interrelations of social capital: Exploring a 'causal' model

In order to understand the determinants of social capital, this thesis focuses primarily on analysing the separate dimensions of social capital. In doing so, it aims to provide some clarity over the potential calibrating effects of the welfare state and its potential for moderating effects on social capital inequalities. While this separation is essential for understanding the welfare state social capital relationship, there is a need to explain how each dimension relates. These relationships are important not only for understanding individual outcomes, as access in one dimension may affect the accrual in another but also in highlighting the potential areas of importance for welfare state policy regarding how to improve an individual's social capital outcomes. Much of the literature explores social capital outcomes by addressing certain aspects or dimensions, yet the specific dynamics of how they relate is often underexplored and requires further clarification.

Addressing the 'trustworthiness of the social environment' (Coleman 102:1988) is a critical aspect of understanding social capital. It is also centrally important to consider the role of state institutions and their potential influence, both as shapers of trust within society (Rothstein and Stolle 2003) and as structures that provide the basis of participation (North 1990). Acknowledging the centrality of trust to social capital (Coleman 1988; Putnam 1993; Newton 1999; Fukuyama 2000), this chapter focuses on social trust determinants. The objective here is to test a theoretical model of social capital that fully identifies the relationship between social capital dimensions. In doing so, the aim is to provide greater clarity surrounding the society-centred and institutionalist approaches, to understand better the direction of influence between trust and networks, and institutional and interpersonal trust. Providing further insight into this complex relationship is of added importance to interpreting individual outcomes, social capital inequalities and welfare state influence.

7.1 Social capital theory

As previously suggested, trust is central to social capital formation, creating the necessary conditions for network formation (Newton 1999) and providing the basis for collective activity (Letki 2006). Returning to the social capital literature and our theoretical account, social capital, is understood as the resources an actor can mobilise from their embeddedness in the network of social relations. We also noted the distinction between the individual and collective aspects, accounted for through the separation of networks and trust. The relationship between these two dimensions is at the centre of the division for social capital explanations. For Putnam, trust is derived from the network [where social capital is defined as]; "the connections among individuals' social networks and the norms of reciprocity and trustworthiness that arise from them" (2000:19). Specifically, voluntary associations have an internal effect [at the individual level] that creates habits of cooperation, solidarity and public-spiritedness (Putnam 1993:90). An external effect [at the collective level], garnering trust from the cooperative values and reciprocity generated through voluntary associations.

For Coleman, social capital is both an individual and collective property; the individual's interaction within the collective social structure [understood as a property of networks] produces social capital. Here social capital depends on 'the level of trustworthiness of the social environment [and] the actual extent of obligations held' (1988:102). Thus, the creation of social capital suggests an alternative direction, with trust as the basis for network formation.

These two perspectives provide an understanding of social capital where trust is either derived from network participation or a requirement for network formation. In the following section, I address this relational nature of social capital, drawing on the literature to examine the theory and empirical evidence of the expected relationship between social capital dimensions.

7.2 Determinants of interpersonal trust

Although there may not be a universal agreement on what defines trust, there is little question about its importance to individuals and society. Understanding why we trust someone is evident in its conceptualisation, whether from a genetic, evolutionary, rational or cultural perspective. Specific to the area of inquiry, I focus here on the institutional and society-centred approaches to help explain how social trust and networks are related.

7.3 The relationship between social capital and interpersonal trust

7.3.1 Formal Networks

The society-centred approach holds the view that through interactions in civic associations, people learn the virtues of trust, reciprocity, and cooperation. Voluntary organisations are essential because active engagement brings local people into face-to-face contact (Putnam 2000). Positive experiences through associations create the 'spill-over effects' influencing attitudes and values, generating social trust (van Ingen and Bekkers 2012). Although a defined interest can create opportunities for social relationships (Hardin 2002), it is difficult to see how one sustains networks unless there is some trust to start with (Newton 1997). Trust may be a precondition of engaging in networks with those more trusting, more likely to join associations (Stolle 1998). Here the 'excess propensity to cooperate' allows the transference of trust from the individual to the group, which is reciprocated and reinforced, creating a climate of trust (Meulemann 2008:10).

7.3.2 Empirical evidence

With the widespread appeal of civic participation to improve our lives and democratic institutions, there has been a great deal of literature dedicated to the positive relationship between participation and trust (Almond and Verba 1963; Brehm and Rahn 1997; Knack and Keefer 1997; Stolle 1998; Stolle and Rochon 2001; Wollebaek and Selle 2002, 2003; Delhey and Newton 2003; Herreros 2004; Paxton 2007). Except for Brehm and Rahn (1997), whose structural model using pooled data (General Social Surveys from 1972 to 1994), find the stronger relationship is from participation to interpersonal trust rather than the reverse; not all other studies sufficiently explain the directionality (Nannestad 2008).

Uslaner (2002), in his simultaneous estimations using the General Social Survey (1996), finds that group membership does not affect trust, with the direction moving from trust to engagement. The self-selection process, where those who trust are more likely to join associations, has some support within the literature (Stolle 2001; Uslaner and Brown 2003; Stolle and Hooghe 2004; Bekkers and Bowman 2009; Bekkers 2012). Stolle and Hooghe's (2004) longitudinal study using the Youth-Parent Socialization Panel study (1965-1982) confirms the assertion, finding a positive effect of trust on participation and not the other way round.

By building on previous studies that aim to improve our understanding of directionality, van Ingen and Bekkers (2013), using the Swiss Household Panel Survey (2004-2008), measure whether there is any change in the levels of trust for those who participate. Measuring civic engagement through active and passive membership in voluntary associations and volunteering. With the standard generalised trust survey question[16] forming the dependent variable. They find no effect for volunteering enhancing generalised trust and small effect size for membership. Their repeated analysis with panel surveys from the UK, the Netherlands and Australia, provide consistent results. They conclude that civic engagement brings trusting individuals together but does not enhance generalised trust (van Ingen and Bekkers 2013:21).

Together these empirical studies inform an alternative to the society-centred approach, where rather than an outcome of formal associations, interpersonal trust enhances participation.

7.4 Informal networks

The social capital literature is primarily preoccupied with addressing the role of voluntary organisations. Nevertheless, there is some consideration to the role of informal networks as a potential determinant of trust. Much like the experiential account of formal networks, informal social ties can build trust through continued interaction over time (Offe 1999). Interactions with friends, family, and neighbours all encourage social trust development (Putnam 2000; Delhey and Newton 2003; Li, Pickles, and Savage 2005; Paxton 2007). Positive social interaction within close relationships can serve as a reinforcement of trusting others where obligations are met (Welch, Sikkink, and Loveland 2007).

When considering the specific relationship of informal social capital, it is crucial to consider the conceptual and operationalised indicator used. The theoretical position taken is off access to resources embedded with social relations. Therefore, it seems necessary to consider the relationship from a position of access, not just experience. Does access to a network resource require social trust, or does access increase trust? The more trust an individual possesses, the increased likelihood of greater access to networks (Offe 1999), although this says nothing about the generalised other. Is an individual with reduced access to informal social capital likely to report less trust in others? Trustworthy individuals are more likely to trust others (Glaeser et al. 2000) and believe that others share the same trusting values (Uslaner 2002). As such,

[16] Would you say that most people can be trusted or that you can't be too careful in dealing with people? 0 Can't be too careful to 10 Most people can be trusted

social trust may lead to stability in a shared network. It is possible then that the rewards from obtaining access to informal social capital increase interpersonal trust in a relational manner.

7.4.1 Empirical evidence

There is some support for the positive relationship between informal relations and social trust. Delhey and Newton (2003) comparing seven[17] countries from the Euromodule survey (1999 and 2001) find that social networks (measured as the number of close friends and the frequency of social contacts) are significantly related to social trust across all countries. Further correlational evidence points to a positive interaction with neighbours (Letki et al. 2005) and neighbourhood attachment (Li, Pickles and Savage 2005), predicting greater interpersonal trust. Uslaner (2002:114) finds some support that people with support networks, who talk to their neighbours, and who are satisfied with their friendships are more trusting, although the directionality is unclear.

Glanville, Andersson and Paxton (2013), using the General Social Survey panel (2006–2008), find that informal ties[18], are significant predictors of changes in trust, suggesting that social ties actually enhance trust. Glanville and Paxton (2007), undertaking confirmatory analysis on two US surveys (Social Trust Survey 1998) and the national component of the Social Capital Benchmark Survey 2000), find support for the development of trust from the particular to the general. They observe that more trust within the family and neighbourhood setting produces higher levels of generalised trust. This implies that in the formation of informal networks, the process of familiarity through familiarisation (Möllering 2006) may precede trust in creating the environment for trust to develop.

7.5 Institutional trust

From the institutional-centred perspective, the institutions themselves are considered essential in creating the climate necessary for trust to flourish (Levi 1996; Rothstein and Stolle 2002; Kumlin and Rothstein 2005). The informal constraints and formal rules derived through institutions reduce uncertainty in exchange (North 1990). When information or knowledge is lacking, institutions can provide the necessary structure for cooperation (North 1990). The capacity to generalise from the particular to the other is bound within the belief systems that

[17] Germany, Hungary, Slovenia, South Korea, Spain, and Switzerland

[18] how often they engage in various forms of socialising, including spending the evening with friends, relatives, neighbours, and at bars or taverns

correspond to the individual and institutional (North 1998). State institutions perceived to be fair and effective positively influence generalised trust (Levi 1996; Rothstein 2000; De Cremer et al. 2005).

'Because it is impossible to know the trustworthiness of most people in society, people must rely on imperfect information when they form their beliefs about social trust' (Rothstein 2013:1020). The key for Rothstein is how the behaviour of public officials acts as a mechanism for filling the gap in information and, subsequently, the decision of whether someone should be trusted or not. Corrupt and untrustworthy officials convey the message that those who enact laws cannot be trusted and that corrupt or clientelistic practices are acceptable to replicate. According to Rothstein, this leads to the inference that, in general, people cannot be trusted. 'When institutions serve as a source of trust between actors, those institutions become objects of trust, too' (Mollering 2006: 54). As such, state institutions can form the basis for trusting others (Rothstein and Stolle 2008) and facilitate interpersonal trust amongst strangers (Yamagishi and Yamagishi 1994).

7.5.1 Empirical evidence

There is mixed evidence within the empirical literature for the influence of institutional trust on interpersonal trust. Brehm and Rahn (1997) find support for the positive effect of confidence in institutions on interpersonal trust in their structural model. Freitag (2003) finds the increased likelihood of trust with confidence in institutions, and Zmerli and Newton (2008) find significant correlations between generalised social trust and confidence in institutions. While the efficiency of institutions (Public Institutions Index) also increases the levels of social trust (Herreros 2008). Uslaner (2002), on the other hand, finds little evidence of the relationship between confidence in institutions and interpersonal trust, stating that trust in government and trust in people do not have much in common (Uslaner 2002:158). Mishler and Rose (2001) support this finding, observing no discernible impact of institutional trust on social trust in countries in Eastern Europe.

In their use of the Danish Social Capital project (2004) with four immigrant groups (Turks, Pakistanis, Bosnians and Ex-Yugoslavians) in Denmark, Nannestad et al. (2014) find a causal link between the levels of trust in institutions on the levels of social trust and not the other way round. The suggestion being, the quality of institutions is vital for increasing interpersonal trust, rather than trust remaining stable as a cultural norm. Sønderskov and Dinesen (2016), using

data from Danish panel surveys (1990-2008), measuring institutional trust through a composite indicator of trust in parliament, the judiciary, the police and politicians, and social trust through the standard generalised trust question.[19], find strong evidence of institutional trust exercising a causal impact on interpersonal trust. Testing the reverse relationship, they find that social trust has little or no effect on institutional trust, confirming the importance of institutions.

These recent studies, although specific to a single country, along with the existing empirical correlational evidence, would seem to support the idea that institutions, specifically the levels of trust individuals place in them, can affect the individual outcomes of interpersonal trust.

7.6 Model Hypotheses

In exploring the determinants of interpersonal trust, the exiting theory and evidence indicate the expected relationship of interpersonal trust leading to formal networks. Although there was evidence to suggest that informal ties lead to an increase in interpersonal trust (Glanville, Andersson and Paxton 2013), the theoretical distinction for informal networks is one based on access, which implies a level of trustworthiness required to enter into an exchange. Therefore, I expect a positive influence of interpersonal trust on informal networks will be greater and model accordingly. A causal relationship was established for Institutional trust influencing interpersonal trust, yet the question remains whether institutional trust directly affects the other network dimensions beyond interpersonal trust.

In line with the institutionalist literature that predicts a positive relationship between institutional and interpersonal, I also expect the direction of influence to follow from institutional to voluntary participation, as institutions provide the necessary structure for cooperation (North 1990). Likewise, trust in institutions may affect perceptions of provision and inclusion that may influence informal network investment strategies. Given the nature of the political participation questions, it is unclear whether there will be the same relationship with trust as with institutions and voluntary associations. Political participation does not necessarily require one to trust institutions. If anything, holding institutions to account or protesting may require a certain amount of distrust in a healthy democracy. I would argue that institutional trust does not directly influence political participation in the same way as voluntary networks. Institutional trust, while reducing uncertainty in exchange or signifying a

[19] 'Generally speaking, do you think that most people can be trusted or that you cannot be too careful in dealing with other people?'

cooperative structure for interaction (often with participatory frameworks built into voluntary organisations and government), may be directly at odds with political protest.

We can, however, observe whether institutional trust has an indirect effect on political participation. If we consider that institutional trust has a positive effect on interpersonal trust and voluntary associations, and participation in voluntary associations, along with interpersonal trust, leads to greater political participation. We may expect to observe an indirect effect of institutional trust on political participation.

For the theoretical model proposed, the expectation is that those with greater access to voluntary associations are more likely to increase potential access to political networks through increased association rather than political participation leading to formal associations. This direction would align with Putnam's suggestion that voluntary associations act as the schools of democracy (Putnam 2000). There is also evidence to suggest that informal networks influence political participation, providing access to information and the opportunity to accrue resources that lower the barriers to political participation (McClurg 2003:7). With this in mind, we expect the direction of influence to extend from informal and voluntary networks to political participation.

The final relationship for consideration in the model is between informal and formal networks. It is conceivable that the possession of a robust informal network base would provide the opportunity for access to broader formal network associations. On the other hand, formal associations could provide opportunities for closure into a more informal network setting. At the same time, if we consider the distinction made within the literature between bonding and bridging social capital. Here, informal social capital is derived from the strong homogenous ties of closed networks, and bridging is the weak ties of associations essential for broadening identities (Putnam 2000). As such, a causal relationship may not follow. Where access is restricted, as in the case for some SEGs, individuals might rely solely on informal networks (Hall 2002; Li et al., 2005); if this closed network remains stable, it is unlikely to lead to wider participation. Equally, someone choosing to invest solely in informal social capital will not affect his or her participation in voluntary associations. Therefore, I expect there to be no direct causal relationship between the two forms of social capital.

The theoretically established pathways represent two central hypotheses. The first challenges the society-society approach to social capital formation, and the second seeks to establish whether institutional accounts of social capital hold.

H1: Interpersonal trust determines network outcomes.

H2: Institutional trust is central to social capital formation.

With the hypotheses established, we now move on to testing.

7.7 Research Frame

This chapter aims to address the nature and direction of the relationship between the social capital dimensions. Specifically, I wish to understand the relationship between networks and trust and shed light on the institutionalist and society-centred approaches to social capital. In order to accomplish this, I draw upon the framework of structural equations methods (SEM). Applying methods such as path analysis allows the researcher to test whether proposed models are represented within the data and confirms the theory.

7.8 Method

Structural equation modelling provides a very general and convenient framework for statistical analysis - allowing the assessment of complex relationships between multiple independent and or dependent variables. It enables us to combine regression and factor analytical approaches that make it the most suitable method for illuminating the multidimensional construct of social capital. The SEM comprises a measurement model and the structural model.

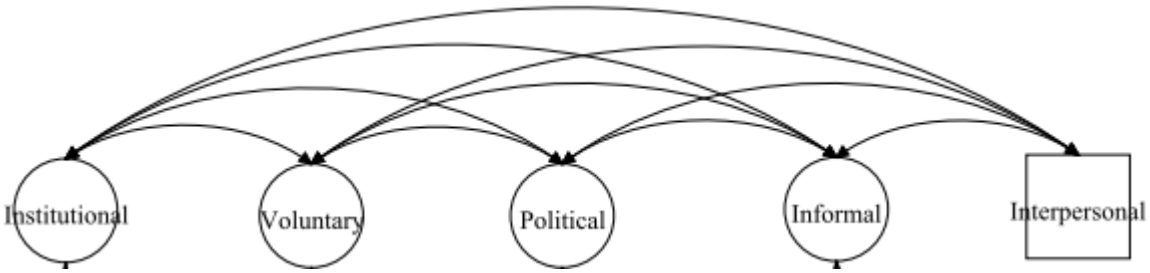
The measurement model is what informed the theoretical propositions concerning the latent variable dimensions of social capital carried out in the dependent variable chapter. CFA was used to assess whether a subset of observed variables considered theoretical relevant is consistent with the observed matrix within the dataset (Heck & Thomas 2015). The structural model describes the relationship between each of the variables. It enables us to specify the type of relationship through regression or path coefficients and identify the covariances. Doing so provides the opportunity to assess the hypothesised relationships between each of the latent variables. Due to a large number of categorical variables and model complexity, model estimation is achieved using Mplus, applying the default WLS estimator.

7.9 Covariance model

It is important to bear in mind that the data for this analysis is cross-sectional, so causal claims are restricted. While it is possible to test whether a theoretical model fits the data, attributing causal arrows between the dimensions can only be substantiated through theory. With this in mind, I begin with a full covariance model that identifies the strength of the correlates between each of the social capital dimensions, initially establishing if the expected relationships exist before moving on to a proposed theoretical model.

Figure 7.1 provides a graphical representation of the social capital dimensions of the first specified model. The circles represent which dimensions are latent variables, and the square box indicates the observed variable. Within the model, the curved two-headed arrows indicate that the two variables correlate. As indicated, there is a specified covariance between each dimension of social capital.

Figure 7.1: Social Capital Latent Variable Covariance Model



7.10 Results

The results in Table 7.1 provide the standardised estimates for the specified covariances between each dimension of social capital. Except for interpersonal trust, all other dimensions of social capital report a significant negative correlation with informal networks. The implication is that there might be a small trade-off between formal [$political(\beta = -.023, p = < .05)$ $volutnary(\beta = -.040, p =< .01)$] and informal networks, where investment in the network may be selective in terms of the time individuals have available or the level of access individuals may have.

The positive relationship found between informal networks and interpersonal trust $(\beta = .065, p =< .001)$ suggests a potential socialising effect of informal networks providing an environment conducive to social trust development, which aligns with previous findings

(Glanville, Andersson and Paxton 2013; Glanville and Paxton 2007). That said, there is still the possibility that trust is a prerequisite to access and maintain informal networks.

The negative coefficient observed between institutional trust and informal $networks$ $(\beta = -.059, p =< .001)$ is interesting. It could be that individuals invest in informal networks because of a lack of confidence in the institutions to provide for their needs. Alternatively, individuals with restricted access to informal social capital distrust institutions because of their lack of social capital. Either way, this implies a slight discord between the formal state apparatus related primarily to the welfare state and the closed informal networks of individuals.

The voluntary latent variable is positively related to both institutional ($\beta = .218, p =< .001$) and interpersonal trust $(\beta = .233, p =< .001)$ and political participation $(\beta = .543, p =< .001)$. The relationship between voluntary and trust is comparable across both dimensions, suggesting that an increase in voluntary activity could result in the same increases (around a fifth) for institutional and interpersonal trust. Whether participation leads to increased trust is still open to question. It could be that people participate because they have trust in others or that trust increases through the formal sphere. Trust in institutions may also be symbolic of a socially conducive environment to participate. The correlation between voluntary and political is the largest effect found within the model, indicating that a unit increase in one dimension is likely to increase the other dimension by half. Such an observation adds further weight to exploring a dimensional account that would otherwise be unrealised with a single formal network indicator.

Both institutional $(\beta = .126, p =< .001)$ and interpersonal $(\beta = .201, p =< .001)$ trust are significantly positively related to political participation. The larger beta (.2) would seem to indicate the interpersonal trust holds more importance for political participation than institutional trust. While the relationship between social trust and participation is open to question, it seems more plausible that trust is a precondition to participating. This specification is in line with Kasse (1999), whose analyses of the Eurobarometer and European WVS find social trust to be a precondition for political involvement. This does not rule out the potential for political participation to increase interpersonal trust; indeed, there may be some form of reciprocity between the two.

Whether institutions create an environment conducive for political participation or individuals who participate, believe in the democratic process and thus trust institutions to fulfil their obligations is difficult to determine. Political participation, particularly in the form of protest, does not require one to trust institutions and may inform a certain amount of distrust (normal in healthy democracy). Political action may lead to trust in institutions to hear and respond to those actions. This view would be in line with Braun and Hutter (2016), whose multilevel analysis with the ESS (2002-2010) find distrust in institutions to increase the likelihood of political participation.

The final relationship between interpersonal and institutional trust is significant $(\beta = .357, p =< .001)$, suggesting that a one-factor increase in one dimension is likely to increase the other by around a third. Whether more trusting individuals are more likely to trust institutions or institutional trust acts as a source for increased interpersonal trust is still open to question. The latter assertion is firmly grounded within the institutionalist literature (Rothstein 2013; Rothstein and Stolle 2008; De Cremer et al. 2005; Rothstein 2000; North 1998; Levi 1996). In the next section, I provide a theoretical model to test this association.

Table 7.1: Standardised covariances between the dimensions of social capital

	(with)	Est	S.E
Informal	Institutional	-0.059***	0.008
	Interpersonal	0.065***	0.007
	Political	-0.023*	0.011
	Voluntary	-0.040**	0.013
Voluntary			
	Institutional	0.218***	0.010
	Interpersonal	0.233***	0.009
	Political	0.543***	0.012
Political			
	Institutional	0.126***	0.009
	Interpersonal	0.201***	0.008
Interpersonal			
	Institutional	0.357***	0.005

7.11 Theoretical Social Capital Model

Having previously empirically confirmed that there are significant correlations between the dimensions of social capital, I seek to explore an alternative theoretical model that further elucidates the specific relationship between the dimensions. Here I look to confirm the centrality of interpersonal trust whilst acknowledging the importance of institutional trust in creating the social environment for social capital to develop.

As indicated in the previous discussion, interpersonal trust is central to social capital formation rather than an outcome of association. That is not to say, associations do not provide opportunities for the development and reciprocation of trust, but there is evidence to suggest

the direction will follow from interpersonal trust to formal networks. The previous covariance model has confirmed the positive relationship, and I now test whether the pathways from interpersonal trust to the latent variables representing political, voluntary and informal social capital are empirically substantiated.

In line with the institutionalist literature, there is an expectation that institutions themselves are an essential determinant of social capital. Based on the existing evidence, the proposed model tests the direct influence with a path from institutional to interpersonal. I also examine the potential effects of institutional trust on the social environment, specifically, the potential for increased participation in voluntary associations and the indirect effects of institutional trust on political participation. Given the previous negative relationship found between institutional trust and informal networks, it will be interesting to observe whether this effect changes with the direction specified.

7.12 Results

The final specified social capital model is presented in Figure 7.2. Each of the latent variables is represented by a circle, with squares indicating the observed variables. The arrows within the path model indicate the direction of influence on which each variable is regressed on, with the standardised coefficients indicating the size of the effect. For ease of reference, all model results are contained in Table 7.2.

With the exception of informal networks on institutional $trust$ $(\beta = -.094, p =< .001)$ and political on informal $(\beta = -.026, p =< .001)$, all predicted path coefficients are positive. The latter association would indicate a greater focus on immediate close relationships at the expense of broader political involvement. Institutional trust directly having a negative effect on informal networks is surprising. Individuals with high trust in institutions may have low informal social capital because the welfare state institutions provide access to informal resources where required.

In line with institutionalist theory, institutional trust has a large positive effect on interpersonal trust (β=.356, p=<.001) and voluntary associations (β=.148, p=<.001). This corroborates the findings of Nannestad et al. (2014) and Sønderskov and Dinesen (2016), who observed a causal influence from institutional to interpersonal trust. It seems that trustworthy institutions positively affect the formal social environment, one that encourages participation and trust between individuals, which is in line with Rothstein's work. Having considered that institutional

trust may not be necessary for political participation, I also model indirect effects via interpersonal trust and voluntary networks. The total indirect effect was significant (β=.136, p=<.001), with indirect pathways from institutional to political via interpersonal (β=.025, p=<.001), voluntary (β=.077, p=<.001), and voluntary then interpersonal (β=.034, p=<.001). Therefore, while institutional trust may not be a prerequisite for political participation, it may still have a positive effect through interpersonal trust and voluntary networks.

The predicted model also placed interpersonal trust central to network formation. The implication being that social trust was a precondition of participating and accessing networks. The model results show a direct positive influence on informal (β=.096, p=<.001), voluntary (β=.182, p=<.001), and political (β=.071, p=<.001). This result supports the idea that trust is central to the social environment and social capital formation (Coleman 1988; Newton 1997; Fukuyama 2000). The final specified relationship predicted that voluntary participation would likely increase political participation. The confirmed positive relationship between the two formal latent variables was the largest in the model, reporting (β=.521, p=<.001) and supports Putnam's (2000) position of associations acting as the schools of democracy.

The results briefly described here (except the negative institutional informal relationship) broadly support the theoretical model and existing literature. The question remains as to what makes this proposed model the correct model and what certainty can we have about these predicted associations.

Table 7.2: Theoretical social capital model, standardised regression estimates

Social capital dimension		Est	S.E
Institutional	→		
	Interpersonal	0.356***	0.005
	Informal	-0.094***	0.008
	Voluntary	0.148***	0.010
Interpersonal	→		
	Informal	0.096***	0.008
	Voluntary	0.182***	0.011
	Political	0.071***	0.010
Informal	→		
	Political	-0.026*	0.011
Voluntary	→		
	Political	0.521***	0.013
Indirect			
Institutional to Political via			
	Total	0.136***	0.006
	Interpersonal	0.025***	0.004
	Voluntary	0.077***	0.006
	Voluntary -> Interpersonal	0.034***	0.002

7.13 Model assessment

7.13.1 Model Fit

As with the CFA models earlier in the thesis, an initial assessment of the suitability of the proposed model is achieved with an inspection of the p-value and global fit statistics. The model itself is not statistically different from the null model indicated by the non-significant p-value. However, the global fit statistics do report RMSEA below .05 and the CFI above .90, suggesting that the model is valid and represented within the data. For comparison, I present the model fit statistics of the initial covariance model alongside the established theoretical model. As the covariance model has a lower degree of freedom and larger chi-square (χ^2), it would suggest the theoretical model fits the data better (although there is little difference in the global fit statistics and no change in the p-value). In order to confirm this, a chi-square difference test assesses whether the restricted model (H0) is a worse or better fit than the less restricted model (covariance model). A significant p-value indicates that the nested model significantly worsens model fit. The results in Table 7.3 confirm that the theoretical model better represents the data.

The model hypotheses also predicted that there would be no direct relationship between informal networks and voluntary networks. An additional model was tested with the specified pathway between the two network dimensions (see Table 7.4). The model fit, and difference test results confirm that the specified pathway is less suited to the data than the theoretical model, indicating no causal relationship between informal and formal networks.

Table 7.3: Social capital path model fit statistics

Model	(χ^2)	*df*	p-value	RMSEA	CFI
Theoretical	1981.720	125	0.000	0.020	0.974
Covariance	2094.93	124	0.000	0.021	0.972
Network	2027.008	124	0.000	0.020	0.973

Table 7.4: Chi-square difference test against the theoretical model

χ^2	Covariance	Informal→ Voluntary
Value	4.973	12.049
df	1	1
P-value	0.0257	0.0005

Without certainty over direction, the issue of model equivalence arises. Even though a valid model has been identified, without any ability to provide a temporal control, the ability to confirm the influence in one direction cannot be causally substantiated. It is quite feasible that alternative models exist, which generate identical covariance matrices and, as a result, fit the observed data equally well (MacCallum et al. 1993). While we are unable to overcome the limitations of cross-sectional data, we can critically evaluate the model observations by confirming their appropriateness to the data and theory in the form of equivalence.

7.14 Models of Equivalence

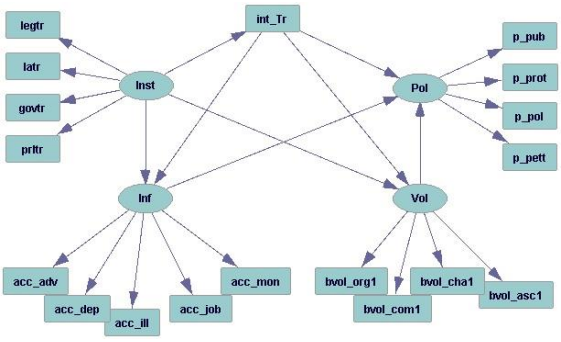
[As an indication of the potential variation and number of identified models. If we consider a model without prior knowledge, resulting in non-specified relationships between five variables, the number of possible permutations would return 42 equivalent models]. Without the ability to structure the model with a definite causal pathway (that would restrict the causal pathways), the proposed theoretical model has nine other Markov equivalent models, presented below. The coloured arrow indicates a deviation from the theoretical model while remaining within the same equivalence class.

The equivalent models are easily classified relating to each social capital dimension. Models H0, 1 and 4 are the dedicated institutional models, 2 and 3 are the informal directed models, 5, 6 and 7 are the interpersonal led models, and 8 and 9 are the voluntary centred models. All latent variable variances have been fixed at one (and observed variables freed under each factor) to aid comparability of the coefficients between models.

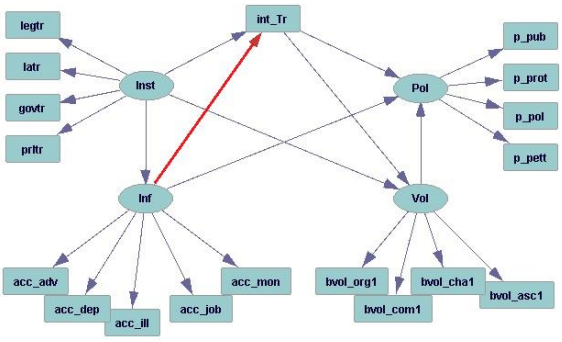
Within the equivalent models, three relationships remain consistent throughout the predicted model iterations. [According to the equivalence theorem (Verma and Pearl 1990), these specified pathways represent a shielded collider, meaning that any conditioning cannot alter this relationship if it is to follow the rules of d-separation and remain within the equivalence class.] Observing the predicted models, interpersonal trust, informal networks and voluntary

participation all influence the political participation latent variable. These specified relationships are in line with the proposed theoretical model substantiated earlier. As such, I will direct attention to those arrows that provide potentially conflicting outcomes to the hypothesised model and assess any variation in model fit (Table 7.5).

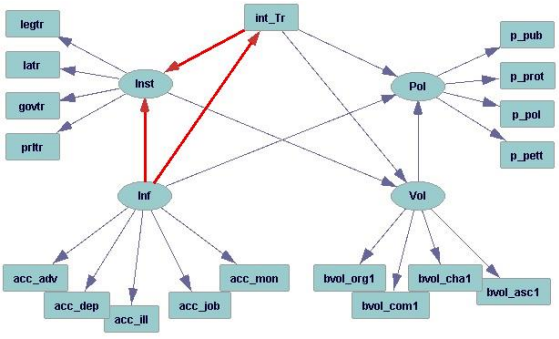
H0



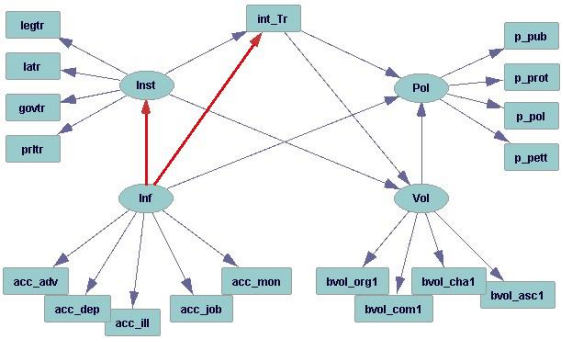
Model 1



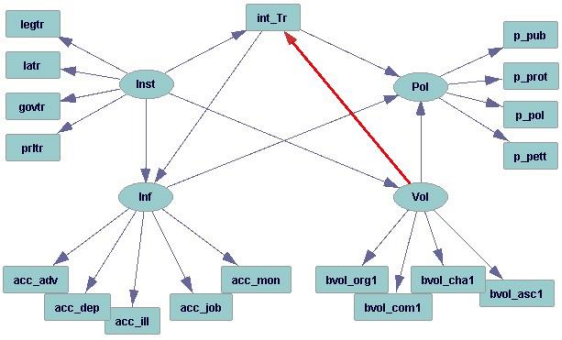
Model 2



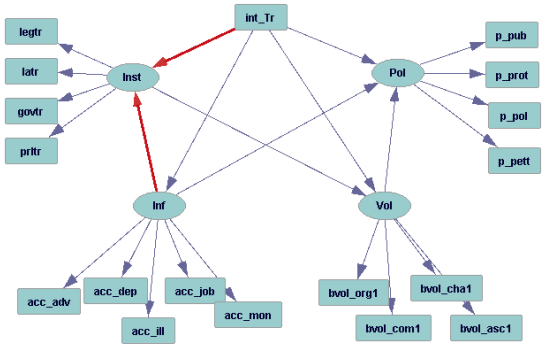
Model 3



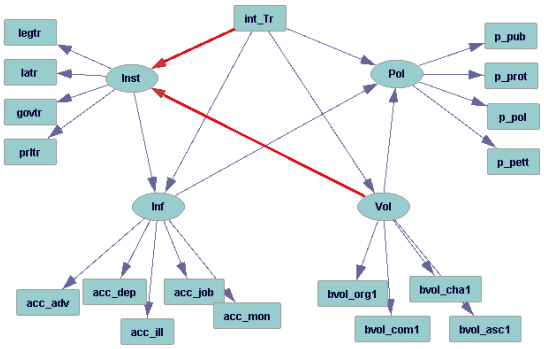
Model 4



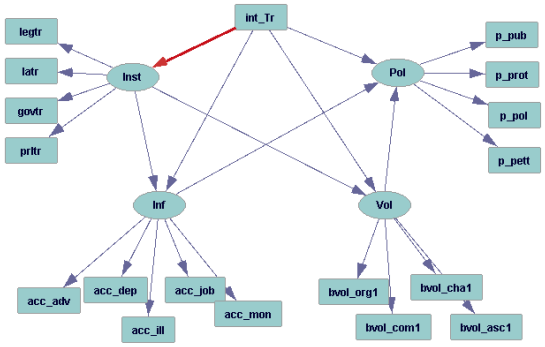
Model 5



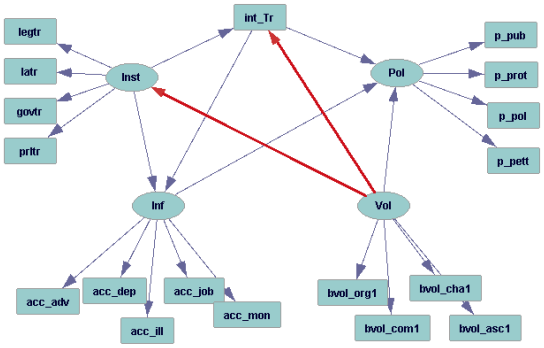
Model 6



Model 7



Model 8



Model 9

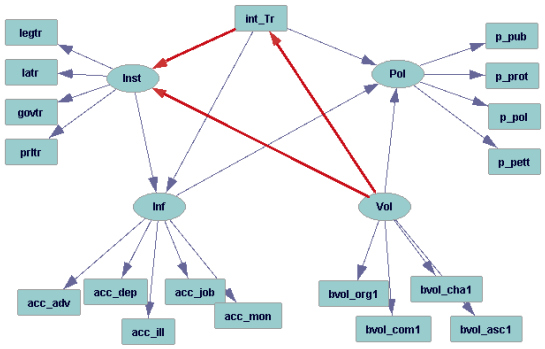


Table 7.5: Equivalent models, fit statistics

Model	(χ^2)	*df*	p-value	RMSEA	CFI
0	1993.517	125	0.000	0.020	0.974
1	1993.500	125	0.000	0.020	0.974
2	1993.489	125	0.000	0.020	0.974
3	1993.494	125	0.000	0.020	0.974
4	1993.491	125	0.000	0.020	0.974
5	1874.867	125	0.000	0.020	0.977
6	1874.860	125	0.000	0.020	0.977
7	1874.863	125	0.000	0.020	0.977
8	1993.494	125	0.000	0.020	0.974
9	1993.485	125	0.000	0.020	0.974

7.14.1 Informal

The first relationship for assessment is the direction between informal networks and interpersonal trust (model 1). Considering the evidence within the literature on the importance of informal networks for social trust (Putnam 2000; Delhey and Newton 2003; Li, Pickles, and Savage 2005; Paxton 2007), the fact that altering the direction conforms to the same equivalence class, with the same model fit, makes sense. This fact draws our attention to the apparent difficulties faced with directionality in modelling with cross-sectional data. The only deciphering variation is the fractionally different chi-square value from the hypothesised model, and the slightly larger effect of interpersonal trust on informal networks (β=.096, p=<.001), compared to the reversed (model 1) informal on interpersonal (β=.084, p=<.001), which is not significantly different.

Although we find support for our theoretical position of access with the initial (H0) model, both directions remain plausible without being able to specify causally. Regarding our understanding of the relational nature between these two dimensions, it is likely that interpersonal trust and informal networks are mutually reinforcing. Experiences with family and friends are liable to shape our predisposition to place trust in others. At the same time, an individual who trusts others is likely to have trust reciprocated through the norm of trusting behaviour. An individual whom themselves is deemed trustworthy is more likely to gain greater access to informal social capital.

Disentangling the informal networks and institutional trust relationship is another difficult task. The each-way direction provided a negative coefficient of institutional on informal (H0, β=-.096, p=<.001) and informal on institutional (H0, β=-.096, p=<.001) and informal on institutional (model 5, β= -.060, p=<.001; model 3, β= -.086, p=<.001; model 2, β= -.082, p=<.001). Whether individuals trust institutions to deliver services and guarantee effective provision reduces the need to secure a strong informal network base. Or distrust in institutions encourages them to ensure access to informal networks through self-interest, or anxiety of non-market survival is perhaps open to question.

As the second analytical chapter showed, countries with high levels of institutional trust also have a generous entitlement that includes the provision of informal support. Here, the modernisation thesis implies the negative direction of influence would run from institutional trust to informal, with trust in institutions to provide support previously afforded to familial

informal network structures of provision. Theoretically, it makes sense for the negative causal arrow to run from institutional trust to informal networks. However, it remains plausible that greater reliance on informal social capital leads to a deeper distrust in institutions.

7.14.2 Voluntary

Institutions are considered essential in creating the conditions and climate [of trust] necessary for social capital development (Kumlin and Rothstein 2005; Larsen 2007). The expectation, therefore, within the theoretical model was for institutional trust to influence voluntary participation. Comparing the H0 model (β=.147, p=<.001) with the (voluntary led) equivalence model 8 (β=.212, p=<.001), 6 and 9 (β=.136, p=<.001), the results indicate a positive effect of voluntary associations on institutional trust.

Participation within civic associations may create a 'public-spiritedness', as Putnam (2000) suggests. The (positive) experience of formal participation engenders trust that is then reciprocated towards cooperative public institutions. Formal associations are those most closely related to the formal organisations and institutional framework, often overlapping the third sector. As such, individuals who participate in the formal sphere are likely to trust the organisational process it represents. It is equally plausible that that institutional trust acts as a guarantor for uncertain exchange within civil society. Here the cooperative norms of state institutions provide the formal institutional framework for participation (van der Meer et al. 2009). Although either model is credible, it is difficult to see how participation within the third sector is established without trust in the institutions themselves.

Reversing the pathway direction from interpersonal → voluntary in the H0 model (β=.183, p=<.001), to voluntary → interpersonal in model 4 (β=.167, p=<.001), falls within the same equivalence class. The regression coefficients are not significantly different from one another and have the same model fit. Without additional information, the data suggests the models are equally plausible. As such, it is feasible that the positive experiences of participating in voluntary associations create 'spill-over effects', generating wider social trust (van Ingen and Bekkers 2012). This does not alter the fact that social trust may be required to participate (Uslaner 1996; Stolle and Hooghe 2004; Bekkers and Bowman 2009; Bekkers 2012) as the theoretical model predicted; rather, we are unable to determine causality.

7.14.3 Interpersonal

When we compare the H0 model (β=.356, p=<.001) with the equivalent model 7 (β=.357, p=<.001), we observe the same effect between interpersonal and institutional trust in both directions; as such, trusting individuals may have a greater tendency to report trust in institutions. We also notice a slight improvement in the model fit with the interpersonal led models, reporting a reduction in the chi-square and an increase in the CFI (.977). However, this may relate to the variable itself (i.e. a single indicator compared to the more complex latent variable). What the equivalent model does bring to our attention is a potential disagreement with the empirical evidence (Nannestad et al., 2014; Sønderskov and Dinesen 2016), of a causal influence from institutional to interpersonal trust, running counter to the institutional position of state institutions forming the basis for trusting others (Rothstein and Stolle 2008).

We cannot overcome the difficulty in disentangling the casual relationship between institutional and interpersonal trust with the present data limitations. What the equivalence model shows is that contrary to expectations, the model with interpersonal trust influencing institutional trust fits the data equally well.

7.15 Discussion

This chapter aimed to explore the interrelationships of the social capital dimensions. Specifically, it looked to address the importance of trust and provide insight into society-centred and institutionalist approaches to social capital production. The results of the proposed theoretical social capital model did support the centrality of trust found within the literature; (Coleman 1988; Putnam 1993) as a necessary condition for the creation of networks (Newton 1999), enabling social relationships to emerge (Fukuyama 2000) and facilitating collective action (Putnam 2000). The equivalent models (5, 6 and 7) with interpersonal trust as the exogenous variable (influencing all other social capital dimensions) also showed that they fit the data equally well.

If interpersonal trust is the leading causal dimension, then this raises questions of both the institutionalist and society-centred approaches and further raises the question of what influences interpersonal trust. To be clear, both the institutional led models (H0, 1 and 4) and the voluntary-led models (8 and 9) are in the same equivalence class. Given the issue of causality, combined with the fact that the majority of comparative work relies on cross-sectional data, it is perhaps not surprising that conflicting theories are substantiated.

There is some support for the society-centred position. The equivalent models show voluntary associations positively influence political participation, along with interpersonal trust and institutional trust. The limitation of explaining directionality between institutional and voluntary networks within the data makes addressing the approaches difficult. The position taken within the thesis has primarily been in support of the institutional position that emphasises the importance of institutions for civil society (Rothstein and Stolle 2008; van der Meer et al. 2009). There is no evidence to suggest that this is not the case, but rather what the equivalent models have indicated is that the dimensions are likely to be mutually reinforcing. Thus, trust is simultaneously a result of cooperation (Gambetta 1988) and a precondition for cooperation (Misztal 1996). In terms of our theory and model outcomes, there is reasonable support for trust as a precondition for participating.

The fact that we observe positive relationships between interpersonal trust and social capital dimensions in both directions is perhaps indicative of the relational nature of trust itself. Trust adheres to the nature of social relations (Coleman 1998), created in the interaction between individuals within the structure of relations (Frederiksen 2014). There is some support for this mutually reinforcing nature in Robbins (2012). His non-recursive SEM analysis (WVS 2000) shows a statistically significant positive feedback effect between generalised trust[20] and institutional quality[21], where the path from generalised trust to institutional quality is stronger.

In terms of trying to understand the potential for welfare states to influence social capital outcomes, this implies a more important consideration for improving the environment of trust. If interpersonal trust directly affects social capital dimensions, models that previously explored the outcomes of interpersonal trust across countries are of further importance when interpreting the potential welfare state effect. Specifically, as universalism and generosity relate positively to interpersonal trust, this indirectly implies a greater potential for social capital production, alongside the specific direct effects on each dimension. Reducing the cultural distance may have more extensive benefits to social capital production beyond the hypothesised interpersonal trust relationship. If we consider the potential role the welfare state has in crowding out informal networks, but at the same time observe generosity increases

[20] Would you say that most people can be trusted or that you can't be too careful in dealing with others?
[21] Three indicators measuring fairness and effectiveness; legal property rights protection, the rule of law, and corruption

interpersonal trust, which also increases informal networks, then the negative effect of generosity on informal networks may be indirectly offset through interpersonal trust.

It is also worth drawing attention to the fact that not all relationships within the model were positive. Informal networks were associated with a (β-.026, <.05) reduction in political participation. Institutional trust with a reduction in informal social capital (β=-.096, p=<.001) and informal negatively related to institutional (model 5 β=-.060, p=<.001, model 2 β= -.086, p=<.001). This potential for a negative association or 'dark-side' of social capital does have support within the literature (Portes & Landolt, 1996; Portes 1998; Putnam, 2000; van Deth, and Zmerli 2010).

As previously indicated, informal networks are considered distinct from other forms, often referred to as 'bonding' social capital (Putnam, 2000). The homogeneity of the network lends itself to network closure, where associations are isolated and inward-looking, restrictive to outsiders and the wider community (Portes 1998; Li, Savage, & Pickles 2003; García Albacete 2010). This is confirmed in García Albacete (2010:710), whose regional analysis in Spain finds members of bonding social networks have fewer positive attitudes toward the political system than those active in bridging groups.

Relating this to the welfare state discussion, Albano and Barbera (2010) (using ESS, 2002) focus on the relationship of informal help with trust and satisfaction in institutions. They find that the welfare state is an important factor in mediating the informal institutional political relationship. Those helping others in a weak welfare state tend to have a critical attitude toward the political system. Where the welfare state is stronger, the negative relationship is significantly less. Here we understand the importance of the social solidarity engendered by the welfare state and its outcomes for the social capital environment.

Within the context of the thesis, we have confirmed the positive effect of the welfare state on the dimensions of social capital, except for informal networks. When we observe the crowding-out of informal networks through increased welfare state support, it is important to remember that a negative relationship does not necessarily mean that individuals are without support. Instead the primary access point may have transitioned from the family to the state, where the systems of universal provision and collectivised caring replaces the dependency on informal networks. It is quite feasible that there could be a reduction in the negative associations

between informal networks and the other dimensions in such instances where support is guaranteed.

7.16 Conclusion

This chapter endeavoured to further our understanding of the specific relationships between the dimensions of social capital. After reviewing the theory and empirical evidence, a proposed model of social capital was established. The aim was to test whether we could identify the specific role of trust in and on social capital formation. What the analysis confirmed, though with limitations, is that trust is an essential element in understanding and strengthening social capital. This finding is of further importance when we consider the role of the welfare state in creating a socially conducive environment for trust. Although theoretically driven, the proposed model requires further work to establish causality for the complex relationship between the dimensions of social capital to be fully realised.

As highlighted by the multiple plausible models, if we did not address the issue of equivalence, then one could easily find support for their corresponding theoretical position. Such is the nature of cross-sectional data and the complexity of social capital that we cannot easily disentangle the interrelationships. Part of the criticism attached to the exploration of existing social capital research is the lack of precision in the application, particularly when aspects are used interchangeably as an account of social capital. What the examination of the interrelationships has highlighted is that the mutually reinforcing nature of the social capital dimensions confirms the need to approach social capital as a multidimensional construct. The implication being that we cannot fully understand individual outcomes focussing on a single dimension alone.

What this means in terms of the welfare state is that improving social capital outcomes should not focus entirely on one element. Communitarian positions that promote civil society as the answer to social improvement may need first to consider the environment of trust necessary for participation to occur. Likewise, institutionalist arguments may also need to recognise the importance of creating the environment for trust and participation at the individual-level. What this may look like and the implications for social policy are addressed in the next chapter.

Figure 7.2: Theoretical Social Capital Path Model

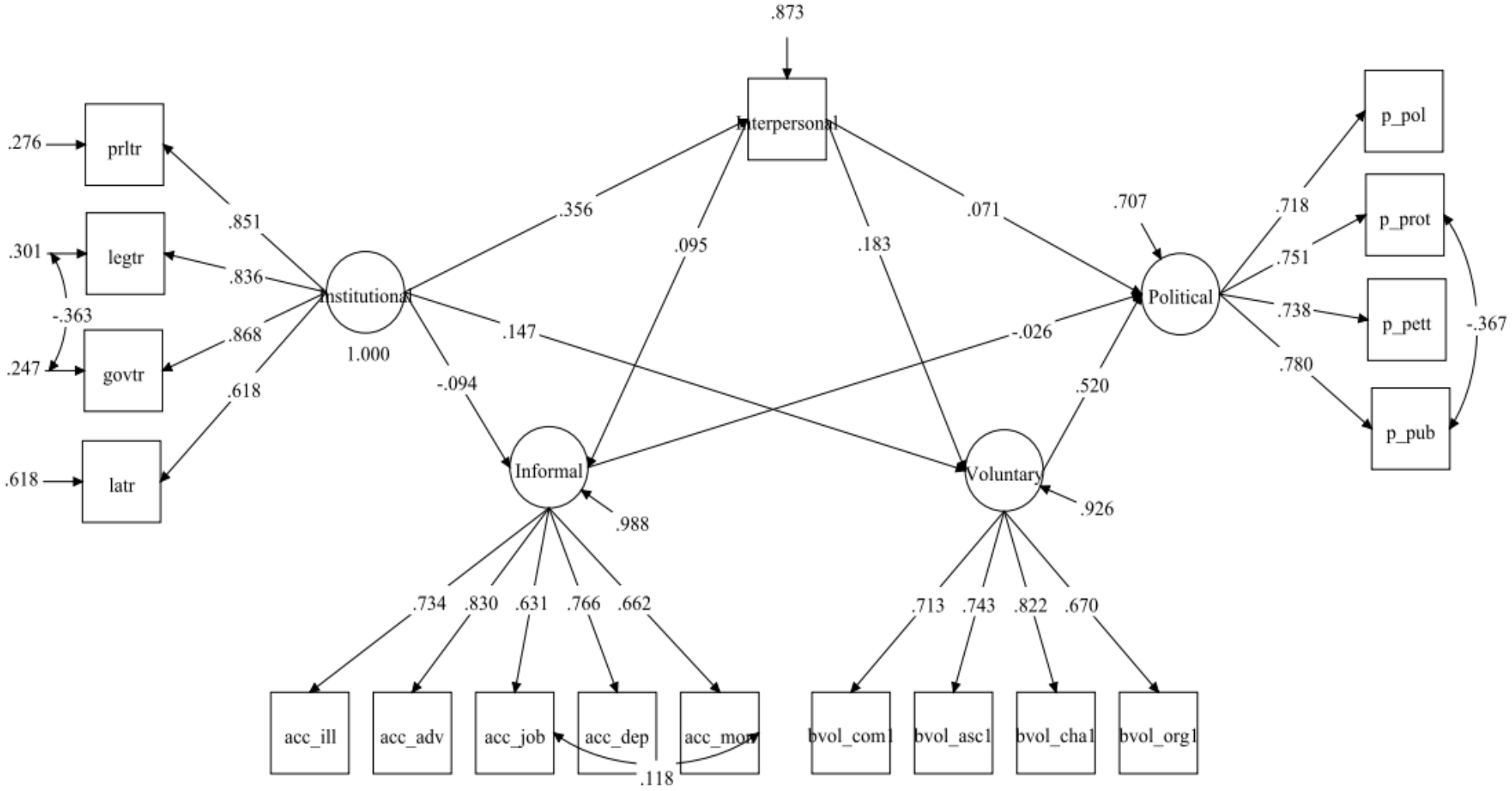


Table 7.6: Standardised coefficients for all equivalent models

		Model H0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Institutional											
→	Voluntary	0.147	0.147	0.147	0.147	0.212	0.147		0.147		
	Informal	-0.094	-0.060			-0.094		-0.098	-0.098	-0.094	-0.094
	Interpersonal	0.356	0.361		0.361	0.321				0.321	
Interpersonal											
→	Voluntary	0.183	0.183	0.183	0.183		0.179	0.232	0.179		
	Political	0.071	0.071	0.071	0.071	0.071	0.082	0.082	0.082	0.071	0.071
	Institutional			0.361			0.363	0.326	0.357		0.324
	Informal		0.095			0.095	0.066	0.101	0.101	0.095	0.095
Informal											
→	Political	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026	-0.026
	Interpersonal	0.084		0.062	0.084						
	Institutional			-0.082	-0.060		-0.086				
Voluntary											
→	Political	0.520	0.520	0.520	0.520	0.520	0.513	0.513	0.513	0.520	0.520
	Interpersonal					0.167				0.167	0.235
	Institutional							0.136		0.212	0.136

8 Discussion

This chapter provides an overview of the thesis and contributions, highlighting the importance of measurement. It provides a summary of findings before situating them within the broader context of communitarian and institutionalist approaches to social capital and its policy implications. I also discuss a potential alternative for social policy that builds on the findings of this study. The final section raises some limitations and areas for likely future research before concluding.

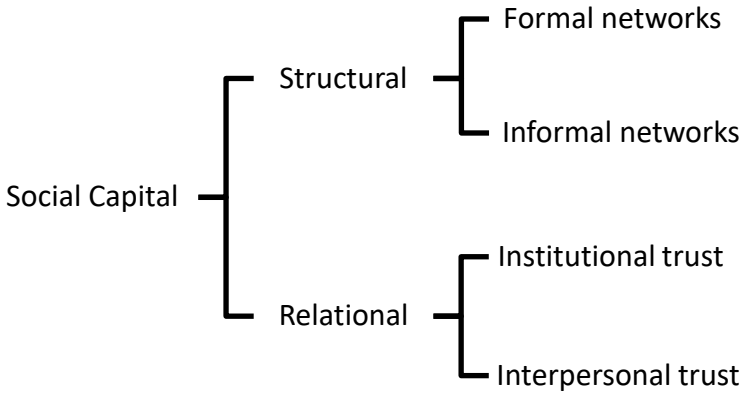
8.1 Overview

In chapter 2, the thesis began with an exploration of the central theoretical positions within social capital. From these principal exponents, we established an understanding of social capital as an individual and collective property. Importantly, this also provided insight into how and under what conditions we could understand social capital variation, which is critical to understanding the welfare state relationship. There is no universally agreed-upon definition of social capital. Scholars choose to focus on either the sources or effects of social capital and whether social capital is an individual or collective property. However, its value as a concept and avenue for research lies in its conception; as a resource (one embedded within social relationships) which we consider both individual and collective in nature.

8.1.1 Multidimensionality of social capital

The key message here is that if we understand social capital as both an individual and collective property, we must distinguish between the structural dimension of networks and the relational dimension of trust (Nahapiet and Ghoshal 1998; Dasgupta 2000; Kaasa and Parts 2008). Although the dimensions are related due to the nature of social relations within a structure, they are substantively different, neither reducible nor interchangeable. Thus, within the literature and my own analyses, we find support for identifying social capital as a multidimensional construct (Oorschot et al., 2006; Kaasa and Parts 2008; Oorschot and Finsveen 2009; Guillen et al., 2011; Ferragina 2017). It is only by separating the structural and relational elements that we can provide the necessary distinctions to answer the crowding-out debate and clarify the nature of the welfare state's impact on social capital outcomes.

Figure 8.1: The dimensionality of social capital



The analytical model of the dimensions of social capital provides us with a position from which to address the social capital welfare state relationship. While this analytical distinction is essential, it is only meaningful if the measures we use are sufficient and reliable. With this in mind, the purpose of chapter 4 was to address the critical issue of measurement.

8.1.2 Dependent variable

There is surprisingly little attention given to the actual measurement and construction of indicators used, considering the wealth of social capital research that exists. Proxies are widely employed without always having the critical reflection required to ensure the indicators measure what they purport to measure. Arguably, the main strength of this thesis is that social capital is theoretically driven and empirically substantiated. Having identified social capital as a multidimensional construct, the application of CFA ensured the construct validity of each dimension. In doing so, we confirmed both the dimensionality of social capital and its coherence as a latent variable construct. The importance here is not only to ensure that our dependent variable is valid for inquiry but also to address the relationship between social capital and the welfare state.

Driven by theoretical underpinning, I established measuring social capital through five distinct dimensions. By accounting for the critical distinction of access to potential resources, informal networks measure those resources available to an individual they can rely on to provide support, measured here through the five resources of; help, advice, support, jobs and money. Formal networks also represent the potential access to resources, this time through the wider networks of participation. As it is not possible to distinguish a specific resource, we infer the

potential access through the network being present rather than the frequency at which participation occurs. Formal networks are measured through two separate indicators of voluntary[22] and political networks[23].

Trust is a dimensional construct in its own right. Here we distinguish between the interpersonal trust between individuals that allows networks to be created and maintained, alongside institutional trust that frames the social environment in which participation takes place. Institutional trust is measured through four indicators of trust in governmental institutions[24]. These indicators are those most closely associated with the welfare state and where crowding-out is most likely to be realised. There is only one question relating to interpersonal trust [an inherent limitation] within the data set and is included as an observed variable[25].

In empirically confirming the separate dimensions of social capital, we have provided a reliable basis for understanding social capital outcomes. What the theoretical model of social capital also illustrates is that the dimensions themselves, although distinct, are interrelated. In chapter 7, we acknowledge the central role of trust in social capital formation. In doing so, we provide a broader context for the influence of the welfare state and how this may affect social capital as a whole. Importantly, through equivalence models, we also established how the social capital dimensions were mutually reinforcing, giving credence to the position of social capital as a multidimensional construct.

8.1.3 Measuring the welfare state

In addition to the multidimensionality of social capital, we need to be critical about the operationalisation of the welfare state. Previous research has focussed on social expenditure or welfare regimes to account for welfare state influence. However, these approaches are limited because spending alone does not adequately account for the substance of welfare states, its coverage and distribution [Spending at the macro-level may not necessarily reflect the real generosity of welfare states at the micro-level]. In contrast, welfare regimes can obscure the variation in countries' social insurance programmes. By focusing on replacements

[22] i) community and social services ii) education, cultural, sports or professional associations iii) social movements or charities, and iv) other voluntary organisations

[23] attended a meeting of a trade union, a political party or political action group ii) attended a protest or demonstration iii) signed a petition, including an e-mail or online petition and iv) contacted a politician or public official

[24] Parliament ii) the legal system iii) the government and iv) local (municipal) authorities

[25] 'generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people

rates, we explicitly capture welfare states' commitment to ensuring individual's participation irrespective of market provision. In doing so, we can assess whether increased support is positively or adversely related to social capital outcomes.

Alongside generosity, another critical aspect to understanding welfare state provision is the mode of delivery. Here we distinguish between the provision of social benefits as a matter of right and those through means-testing. Identifying universalism through the absence of means-testing, we aim to capture the perceived fairness and solidarity of the welfare state (Kumlin and Rothstein 2005) and its potential to reduce the cultural distance (Larsen 2007).

Crucially, a dimensional approach allows for an assessment of where crowding-in and crowding-out occur, according to the form and level of provision. A specific limitation of the crowding-out debate has been to present a dualism of welfare state influence without acknowledging how this might change according to the dimensions of social capital and the welfare state in question. By maintaining the dimensionality of social capital through various models in chapter 5, we can assess the potential influences on social capital accumulation and avoid the pitfalls of selectivity. In doing so, we move away from the reductionist dichotomy to one that acknowledges the potential calibrating effects of the welfare state.

8.1.4 The difference across different socioeconomic groups

A second inherent limitation to the crowding-out thesis is the assumption that if the welfare state does not intervene then, individuals would be free to accumulate social capital, which I have identified within the literature as being unequally distributed according to socioeconomic factors. Here of importance is the ownership of existing economic and cultural capital an individual possesses, which can then be used to generate social capital; in a mutually reinforcing manner (Bourdieu 1986). From the literature, I have identified the welfare state as a potential equalising mechanism that reduces social capital inequalities. There has been a tendency with mainstream approaches to social capital to overlook the differences between SEGs in their access to social capital. Here a focus on promoting the positive potential of social capital has ignored issues of structure and inequality. With this in mind chapter six, expressly acknowledges how the structural patterns of inequality might influence access to social capital and how the welfare state might moderate this relationship.

In summary, this thesis asks how the welfare state influences social capital outcomes, whether this influence affects SEGs differently and what this means for social capital as a whole.

8.2 Summary of findings

The following section summarises the findings and conclusions of the empirical chapters.

8.2.1 The social determinants of social capital: Do welfare states matter?

The 2nd analytical, chapter 5 of the thesis, critically addresses the crowding-out argument, asking whether welfare state generosity and universalism matter for an individual's social capital. Despite the significant attention given to the welfare state social capital relationship, some specific limitations have perpetuated the crowding-in or crowding-out argument. Part of this relates to the lack of clear mechanisms explaining the welfare state's influence on social capital. A focus on the size of the welfare state has tended to reproduce polarised [ideological] debates in terms of positive and negative dualism. By establishing mechanisms, I proposed the idea of calibration, suggesting that the welfare state can, in fact, crowd-in and crowd-out – depending on the type of social capital in question and which aspect of the welfare state is in focus. In order to assess this proposition and provide some clarity on this debate, the research questions specifically address how generosity and universalism relate to each dimension of social capital; explored through the following hypotheses:

Hypothesis 1-1: More generous welfare states with higher replacement levels will crowd out informal networks by decreasing individuals social capital.

Hypothesis 1-2: Welfare states with greater social protection through generous replacement rates support individual's formal network structures and provide access to new ones - increasing the level of formal participation.

Hypothesis 1-3: A more generous and universal welfare state that promotes solidarity with less means-testing will increase the levels of reported interpersonal and institutional trust.

The results of the models confirm country-level variation across each of the social capital dimensions. Broadly speaking, the selected welfare state indicators are essential factors in explaining social capital outcomes. In terms of our hypotheses, there is a negative association of welfare state generosity with informal networks. Although the significance drops to the 90%-level with the addition of the GDP control, it is statistically significant when robust standard errors are applied. With some caution, we accept the first hypothesis that generosity crowds out informal social capital.

The results for formal social capital are mixed. We find that welfare state generosity has a positive and significant effect on voluntary networks, but not for political participation, which does not remain significant after the introduction of the wealth of the country as a control. So our hypothesis holds for voluntary but not for political, social capital. So while greater welfare state generosity is associated with increased participation in voluntary networks, the same cannot be said for political participation. Importantly, the direction is positive, so although the significance drops for political participation, welfare state generosity is likely to positively influence building a stronger civil society, rather than crowding-out, as some may suggest. Furthermore, let's consider the large positive association of voluntary networks on political participation, explored in chapter 7. The positive effect of welfare state generosity may also indirectly improve political participation via voluntary networks.

Welfare state indicators generally had a positive relationship with trust, though not entirely as the hypothesis predicted. Non-means-testing has a positive effect on interpersonal trust and is significant across all estimation applications, allowing us to accept the third hypothesis; countries with a greater proportion of non-means testing are likely to increase the levels of interpersonal trust. The positive effect of non-means-testing on institutional trust did not hold after the model included welfare state generosity. With generosity remaining significant after the inclusion of GDP, it seems that generosity is a better predictor of institutional trust than our second welfare state measure non-means-testing. In this case, we partially accept the hypothesis for institutional trust, noting the significant effect of welfare state generosity and the overall positive effect that the generous and universal welfare state has on trust.

Alongside the hypothesis that specifically addresses the relationship between the welfare state and each dimension of social capital, we are also interested in the broader question of what this means for the crowding-out debate. Remember, part of this disjuncture results from the conflicting narratives on society and the individual. We have sought to move the discussion on by focussing on the dimensionality of social capital, acknowledging the individual and collective properties, allowing for a more nuanced understanding of the welfare state influence.

The analysis results confirm that the welfare state mainly has a crowding-in effect on social capital. Previous research has suggested a detrimental impact of increased welfare state support on civil society. I find the opposite is true. The universal generous welfare state is a crucial determinant of trust, which is essential not just for the perceived cultural distance

between individuals but also the wider social fabric. [Without trust, there can be no functioning civil society (Simmel 1990).

Where there is an adverse effect and what looks like crowding-out is on informal networks, specifically the reliance on resources from informal networks; this implies that there is likely to be a calibrating effect, with the welfare state crowding both in and out. Importantly perhaps in response to the communitarian approaches, is that the welfare state crowds in civil society. It is also possible that the crowding-out observed will not be detrimental to individuals, particularly if the welfare state steps in to provide access to resources previously out of reach. In some respect, this relates to the importance of the welfare state as an institution providing access to resources that would have previously been the domain of families.

Although the hypotheses focus on country-level effects on social capital, the individual-level controls are also of interest and particularly relevant to the discussion of social capital inequalities. The results confirmed that income is the most important predictor of social capital across all dimensions. Tertiary education is also a significant predictor across all dimensions. A clear indication of resources derived from economic and cultural capital can enhance social capital; what Bourdieu (1986) understands as the process of capital accumulation and reproduction. Individuals who are unemployed report significantly less social capital across all social capital dimensions compared to the employed. Receiving social benefits has a negative relationship to social capital, which is significant for interpersonal trust and informal social capital. These four distinct socioeconomic groups highlight the potential variation in access to resources and are the subject of the third empirical, analytical chapter.

8.2.2 The Role of the Welfare State in Moderating Social Capital Inequalities between Socioeconomic Groups

If we consider the importance often placed upon the concept of social capital and its widespread application, there is still surprisingly a lack of attention directed towards inequalities and the structural causes of social capital from a cross-national perspective (Pichler and Wallace 2009). One could argue that part of the success of social capital as a political project and its universal appeal is its emphasis on community and the individual. The product of Putnam's social capital vision, Ferragina (2010:8) argues, has been to 'shift the attention from structural and collective problems of western democracies, such as economic inequalities, to individual issues of responsibility'. From this position, the deficit in social capital

between SEGs is a result of individual agency. It is only by increasing individual freedom that individuals can benefit from accessing social capital.

I take issue with this assumption in the third analytical chapter, acknowledging the structural issues surrounding the unequal distribution of social capital (Bourdieu 1979). I consider the welfare state a critical factor in mediating structural inequalities rather than hindering individual freedom. In doing so, I ask whether welfare states moderate the social capital inequalities between SEGs. Previous research is limited in fully accounting for social capital variation between SEGs across welfare states. [Pichler and Wallace (2009) focus on networks between SEGs with the macro-level measure of inequality (Gini coefficient). Gesthuizen et al. (2008) explored the effect of social security on volunteering between education groups. Van der Meer et al. (2009) focuses on informal networks between income groups and social expenditure. Oorschort and Finsveen's (2010) study relies on correlational data to assess social capital inequalities between welfare regimes]. This chapter adds to this existing literature with a fully dimensional approach to social capital and improved welfare state representation.

This question is explored through the following hypothesis:

H2.1: Differences in informal social capital across SEGs will be lower in countries with more generous welfare states

H2.2: Differences in individual's formal networks across SEGs will be lower in countries with more comprehensive welfare states

H2.3: The difference in the levels of an individual's institutional and interpersonal trust between socioeconomic groups will be more equal in more generous and universal welfare states.

Contrary to our expectations, the welfare state was limited in explaining the cross-national variance in the social capital gap found between socioeconomic groups. We found consistent moderating effects with the welfare state appearing to widen inequalities between education groups. Here welfare state generosity provides an additional benefit to tertiary-educated for the informal, political, institutional and interpersonal dimensions of social capital. Universalism also shows an increase for tertiary-educated in political participation. We did, however, observe a potential calibrating effect, with universalism reducing the importance of income for voluntary and political networks. At the same time, welfare state generosity increased the importance of income for informal networks.

Our first hypothesis predicted that welfare state generosity would reduce informal network inequalities between SEGs. However, the only moderating effect observed widened the gap between income groups, so the hypothesis is rejected. It seems that high-income groups are able to use the generosity of the welfare state and invest in informal networks, while low-income groups are relying on the welfare state for informal social capital.

The second hypothesis provided mixed evidence. Universalism reduces the importance of income for voluntary and political networks, suggesting that it may alleviate potential barriers to participation. While both welfare state generosity and universalism increase the gap between education groups in political networks, suggesting that the welfare state supports capital accumulation for the higher educated. Here we accept the hypothesis in terms of income groups but reject it in terms of reducing education inequalities.

There again was very little evidence of the welfare state moderating trust inequalities between groups. The only significant effect observed was generosity widening the gap between education groups in interpersonal trust and institutional trust, which is a rejection of the hypothesis. Here those with existing capital supported by generous entitlement have greater trust in the systems of provision and others.

Although the findings were not entirely as anticipated, there was further evidence of the calibrating nature of the welfare state - reducing inequalities in some areas and perpetuating them in others. This finding further demonstrates the importance of exploring the welfare state social capital relationship in a dimensional manner.

8.2.3 The interrelations of social capital: Exploring the 'causal' pathways

In the final analytical chapter, the focus is on the interrelations of social capital. Despite accounts within the literature that explores outcomes for social capital, the specific dynamics of how the dimensions relate is often underexplored and requires further clarification. Focussing on the determinants of social trust, I provided an assessment of the society-centred and institutional approaches to social capital. Previously, research has addressed specific aspects of the social capital relationship [Ingen and Bekkers (2013) account for volunteering and generalised trust; Glanville, Andersson and Paxton (2013) focus on informal networks and generalised trust; Sønderskov and Dinesen (2016) assess institutional and interpersonal trust]. I build on this previous research with a complete relational account of social capital. Deriving a causal model of social capital requires the application of structural equation modelling -

combining the measurement model (our established social capital latent variables) with a structural model (the relationship between the latent variables) specified through regressions.

In generating a theoretical model of social capital for empirical assessment, I test the following hypotheses:

H3.1: Interpersonal trust determines network outcomes

H3.2: Institutional trust is central to social capital formation

The model results proved that the institutional-trust-led theoretical model was empirically substantiated, providing a better fit than the covariance model (with no path directions specified). Institutional trust has a positive effect on interpersonal trust and voluntary social capital and indirectly on political, social capital through interpersonal and voluntary social capital. There was, however, a negative effect of institutional trust on informal networks. Suggesting that individuals with high trust in institutions may have low informal social capital because they trust the welfare state to provide access to informal resources where required. Interpersonal trust also reported a positive increase in formal and political social capital. The proposed model mainly supports the hypotheses on the centrality of trust for social capital formation, with trustworthy institutions encouraging participation and trust between individuals and interpersonal trust increasing participation.

Although the proposed model was theoretically driven and confirmed within the data, we are limited in the causal claims we can make due to cross-sectional data limitations. Therefore, to remain both critical and transparent, I tested for model equivalence. This process produced nine other Markov equivalent models that could be equally plausible within the data without a distinct causal pathway. The results of the secondary analysis highlighted the difficulties faced with claiming certainty on the specified pathways. With all models being valid, the only deciphering factor between them was a slight difference in model fit for interpersonal trust.

Whilst this does challenge the centrality of the institutionalist hypothesis, interpersonal trust remains vital to social capital formation. Furthermore, if interpersonal is central to social capital formation, then the positive effect of the welfare state on interpersonal trust may have more comprehensive benefits to social capital.

8.3 Research and Policy Implications

This study has confirmed the importance of addressing the multidimensionality of social capital. In doing so, we move beyond the previous dualistic tendencies of the crowding-in and crowding-out debate and instead ask how and under what conditions the welfare state affects social capital. We find evidence of calibration, where the welfare state simultaneously crowds out informal networks whilst crowding-in, formal networks and institutional and interpersonal trust. What this reveals for the communitarian and confirms for the institutionalist approaches to social capital is the importance of comprehensive welfare provision.

8.3.1 Implications for social capital as communitarianism: Crowding-in

There is a considerable emphasis within the social capital literature, specifically from the Putnam vision, on the importance of voluntary associations to create a more cohesive, productive and democratic society. This decision to shift attention from the structural and potential role of the welfare state to individual responsibility is arguably a political one (Ferragina 2017). This pattern has been remarkably prescient in the UK with multiple social capital incarnations; New Labour's Third way, Cameron's big society and the current Conservative civil society strategy, have all shifted responsibility from state support to private provision. Here the enabling state (Gilbert, 2005) increases social capital by enhancing the role of local communities and removing the barriers of service provision for charities and private businesses (Cameron 2010; Cabinet Office 2018). What the analysis has shown is that comprehensive welfare is conducive to the formal networks on which this development of civil society is based. There appears to be an inherent contradiction between the communitarianism proposed and the actual participatory outcomes. Volunteering in the UK declined by 14.5% between 2005 and 2015 (ONS 2017), which coincided with efforts to reduce public expenditure and a decline in generosity. Other countries debating the merits of service substitution (DG EAC 2010), particularly as a means of curbing public expenditure, should consider the positive effect generosity has on civil society (volunteering).

The desire to reduce costs and improve efficiency while advocating social engagement, has been on the agenda for most major European parties and EU policy over the last decade. In response to the economic (financial) crisis, structural reforms have resulted in widespread cuts to public expenditure. Within this context, the Europe 2020 strategy considers this an opportunity to enhance the efficiency of social protection, and at the same time, promote social cohesion and inclusion (COM 2010). The response of governments to achieve efficiency

and achieve targets for reducing poverty and social exclusion has primarily focussed on restrictive targeting on those at the very bottom of the income distribution (Nelson; EC 2011). However, as the analysis indicates, increasing means-testing to enhance inclusion and cohesion may prove counterproductive.

Policy design that focuses on excluded groups through means-testing may increase the existing stigma associated with receiving benefits, preventing take-up and reinforcing social divides (Larsen 2007). Universal entitlement, on the other hand, creates an environment conducive to the development of interpersonal trust and bridges the cultural distance between social groups (Larsen 2007). Furthermore, as interpersonal trust is central to social capital formation (the social capital model in chapter seven), an increase in means-testing may have pervasive consequences for inclusion and social capital in general.

The number of people at risk of poverty and social exclusion has increased in 17 EU Member States since 2008 (European Union 2016). As such, countries may need to re-evaluate the success of efficiency strategies to improve individual outcomes. Particularly in light of findings that show the positive influence of generous and universal entitlement on social capital. Rather than increasing conditionality and continuing with austerity measures that see spending cuts disproportionately affect the poorest (OECD 2014). Countries (wishing to improve social capital outcomes) may need to consider a more progressive taxation system, rather than offsetting the burden of the recession on those in most need of support (and least able to mobilise politically against cuts to their entitlements).

8.3.2 Implications for Institutions: Crowding-out and social capital inequalities

Where we do notice a negative effect of the welfare state on social capital is in the form of informal networks. To be clear, crowding-out does not necessarily mean individuals are without access to resources within informal networks; rather, welfare state structures may have replaced traditional forms of support. Arguably, this could be considered a natural response brought about through modernisation and the demands of insufficient market provision. Suggesting the removal of welfare state support to enhance social capital would be to misunderstand existing social structures - ignoring the obvious need for support individuals have.

To clarify this point, let us consider the outcomes of the informal random slope models in chapter six. There was a positive interaction effect of generosity on both income and the tertiary-educated slope. So, while we observe a negative impact of generosity on informal networks, the reduction in access is less for higher-income groups and less for tertiary-educated than for primary educated groups. The welfare state and crowding-out implications are that those with limited resources have to rely upon support systems for non-market survival; whereas, those with existing resources are less likely to feel the negative effects of welfare state reduction.

There is a distinction between those who rely on social capital as a matter of need and those with more socioeconomic resources, who maintain sociability in networks through choice. As the welfare state has transitioned to one of caregiver, those with existing resources are simultaneously able to rely on the welfare state for support and use their privileged position to generate social capital. Thus, the income gap widens for informal networks because welfare state provision allows those with economic capital to maintain their independence whilst being supported by generous entitlement if the need occurs. In this sense, the generous welfare state supports a form of collective individualism. Under the auspices of austerity, those reliant on access through the welfare state systems of support are likely to see the adverse effect of welfare removal and reduction to their social capital.

In this context, perhaps we do not see a moderating effect of the welfare state reducing social capital inequalities between SEGs because welfare state restructuring disproportionately affects lower SEGs. Whether the reduction in welfare state generosity (over time) also coincides with reducing social capital and increasing inequalities requires clarification and is an important area for future research.

Another reason why the comprehensive welfare state may not reduce social capital inequalities, as expected, is that the welfare state has evolved to meet the growing aspirations and sustained advantage of the middle class (Esping-Andersen 1990). Those with existing cultural capital and a greater understanding of the 'rules of the game' can use their privileged position to ensure successful practices within the welfare field. Except for volunteering, the welfare state improves outcomes for tertiary-educated across all social capital dimensions. The shared structure habitus of higher status groups aligns more closely with the political class and the reproduction of privilege within the education system. As such, political participation, trust in the institutions of provision and trust between each other increase through generous and

universal entitlement. Higher educated groups can then utilise the welfare state's generosity to ensure they get the access required in informal social capital.

Beyond the welfare state measures of generosity and universalism, we do notice some equalising tendencies through LMPs. Greater LM spending on training improves informal social capital outcomes for benefit recipients and the unemployed. One would imagine this predominantly relates to gaining access and information for jobs, which is present within the informal social capital latent variable. Whether activation leads to sustained employment and expanded participatory outcomes is unclear. What it does indicate is that some specificity to education and skills may be a relevant area for improving social capital outcomes.

Having the requisite resources to access social capital is somewhat lacking in the communitarian accounts of society and social capital. The central idea that individuals, through shared common goals, can maintain the services required relies on individuals having the necessary skills and social capital to fulfil such tasks and demands. The logic that restructuring welfare and removing the barriers of service provision will enable social capital to flourish assumes that everyone has equal access to resources to begin with, which we know to be unevenly distributed. Therefore, rather than reducing social spending to improve the social capital of lower SEGs, greater spending and training beyond existing welfare state support may be required. Support that is specific to the needs of individuals, enabling them to develop the necessary skills and networks would allow them to participate and be active in their participation.

8.4 Wider implications for social policy: A potential alternative

The research presented here has shown how generosity and universalism increase average levels of social capital. It has also shown that a reduction in welfare state effort will likely affect those of lower socioeconomic groups disproportionately. At the same time, in its current form, the welfare state is unlikely to improve the social capital inequalities between SEGs. With this in mind, I consider a potential alternative to current welfare provision that may provide a way to enhance social capital outcomes.

8.4.1 Universal Basic Income (UBI)

UBI has many characteristics relevant to our welfare state conception, which I consider conducive to social capital development. A guaranteed basic income to all individuals aims to eliminate material poverty and enable the social and cultural participation of every individual

(BIEN 2018). It is an income paid to all individuals without the requirement of a means-test, paid on a regular basis and without work conditionality (BIEN 2018).

The universal nature of the payment can have equalising tendencies both within and between households - bridging social divides. As universalism increases interpersonal trust, UBI could promote a system of increased trust between individuals and reduce the cultural distance. Furthermore, as interpersonal trust positively influences all other dimensions of social capital, UBI will provide an environment conducive to social capital development. Such an approach may also prove more beneficial to achieving the EU 2020 strategy aim of reducing social exclusion.

The main barrier to volunteering across Europe is time (DG EAC 2010). The pressure of economic concerns demands the resource of time spent to accumulate economic capital. Without the conditionality of work, UBI provides individuals with the necessary coverage and affords them the resource of time to enable social capital production- in this case, time to volunteer. So, rather than promoting social capital, merely as voluntary networks stepping in to fill the void in times of austerity, through UBI, individuals would be given the necessary support to participate within society. Providing individuals with the security of income will allow them the freedom to develop skills, invest in their future and communities.

The actual empirical evidence for UBI is somewhat limited, although there are a few studies we can draw upon to provide some insight into the potential outcomes of support. These studies highlight the improvements for health and social outcomes at the community level (Forget 2011), along with the weakening of social stigmatisation between the 'deserving' and 'undeserving' poor (Calnitsky 2016), which is considered essential for trust and social capital development.

Significant positive health and social outcomes were found in the UBI pilot program in Otjivero, Namibia in 2008[26]. The study's findings highlighted the positive effects of an unconditional cash transfer that is both individually and socially transformative. It enabled some individuals to use basic income (economic capital) as a means of investing in education (generate cultural capital) while providing security for others, allowing them to contribute to their communities (increase social capital). At the same time as fighting poverty, UBI fostered social and local economic development (BIG coalition 2014). In this case, enabling individuals the opportunity and

[26] The program was dropped after two years as the government pursued a more traditional form of economic development.

support to participate is a crucial function of UBI and provides opportunities for successful practices of social capital production.

Current UBI experiments are underway in Finland, Spain, Canada and the Netherlands. Although no evidence for the programs is available yet, it is worth briefly reflecting on the types of programs introduced and how their intended design may relate to social capital outcomes.

Addressing the unemployment trap that can arise through means-tested guaranteed minimum schemes (the lack of positive income differential between no work and low-paid work) and increased financial insecurity from part-time, precarious and temporary contracts is an essential element of UBI (BIEN 2018). Finland's basic income experiment is primarily concerned with labour supply effects and focuses on those who previously received unemployment benefits. Such an approach is likely to have psychosocial benefits for an individual's wellbeing. Unfortunately, the scheme under consideration is only a partial income and insufficient to meet basic living expenses. As such, the support may not be enough for an individual to dedicate time to invest in social capital. Limiting the target population to those in receipt of unemployment benefits also limits the universal element of UBI, which may hinder broader perceptions of legitimacy and trust.

The Tilburg experiment has three control groups: i) the removal of reintegration requirements ii) more intensive form of reintegration service for welfare recipients in line with the Participation Act (that requires verification that individuals made adequate effort to find employment) iii) a group permitted to keep additional income earned on top of welfare benefits. The Nijmegen experiment follows a similar logic, with one group having minor reintegration requirements and the second having more strict reintegration requirements. Interestingly, the second group will maintain some autonomy concerning participation with help finding work, volunteering, or assistance for entrepreneurship (McFarland 2017). This program distinction provides opportunities to assess participation in social and cultural life alongside education and employment prospects. The freedom to contribute to civil society also provides a clear opportunity to evaluate the potential of social capital development.

Barcelona’s B-MINCOME experiment aims to address poverty and social exclusion. Participants are again drawn from current recipients of social assistance, though participation is voluntary. Half of the households within the control group are assigned to participate in one of four social programs; i) occupation and education, ii) social and cooperative economy program, iii) guaranteed housing program, and iv) community participation program. The remaining

household receives income without any conditionality of work or willingness to participate (McFarland 2017).

Ontario's basic income pilot focuses on lower-income households, with eligibility for participation set below a certain income level (half the median annual income) and not restricted to current welfare recipients. The guaranteed minimum income program is concerned with reducing poverty, food insecurity and wellbeing outcomes, alongside education, training and labour market participation (Segal 2016). This approach could provide opportunities for developing social capital and alleviate the stigma associated with welfare claimants. Unfortunately, the program will end in March 2019, mainly because the government deciding it is too costly.

The current programs underway in the EU primarily target existing welfare claimants at the bottom end of the income distribution. Part of this logic for assessing UBI in terms of employment trap, or sustained support for precarious work patterns, will undoubtedly impact individuals' wellbeing. However, given that the focus is solely on welfare claimants, it might not remove the stigma associated with benefit receipt. A strong case for universal coverage is that it brings everyone together under one group of belonging (Larsen 2006).

A problem of focussing on welfare groups is that it may not change wider perceptions of deservingness, which is essential not just for the social capital outcomes of society as a whole but also for maintaining political support for such policy endeavours. Recent attitude research from democratic forums (Taylor-Gooby and Leruth 2018) shows strong support for social investment. The justification for policy intervention tends to vary according to the welfare system in place. Highlighting the individual and social benefit intervention has, in the more socio-democratic universal systems (Denmark) and economic motivation in corporatist (Germany) and liberal (UK) welfare systems. As such, one might expect that the type of UBI followed, its viability and its presentation may relate to the existing welfare system in place. In countries with typically higher levels of generosity and universalism, the institutional structure reinforces the community's shared sense of solidarity and individual obligations. Here the social value of UBI may prove more easily translatable. More liberal countries with greater means-testing, where deservingness of benefits relate more to contribution and participation, may require alternative forms of basic income.

Atkinson makes the argument that in order to maintain political support, it may be necessary to compromise on the principle of unconditionality, with basic income being paid conditional

on participation (Atkinson 1996:68). Those in (and seeking) employment, caring roles, education, training or voluntary work would all contribute to the idea of being an 'active citizen' and thus deserving of a non-means-tested income. Such an approach may be more credible in the UK, where attitudes towards welfare provision are geared more towards individual responsibility and societal contribution (Taylor-Gooby et al., 2018).

Whether such as system would reduce the burden on administrative costs (and stigma attached to means-testing) to satisfy a genuine participation requirement has been the cause of some debate (see De Wispelaere and Stirton 2018). Other authors suggest some conditional elements may be required initially before introducing a more generous unconditional basic income. As a part of broader public discourse on the values of community contribution, some form of compulsory community participation may help strengthen awareness and social cohesion (Parijs and Vanderborght 2017:213).

There are participation requirement elements in both the Spanish and the Netherlands basic income schemes. Such approaches could prove fruitful, particularly within the context of providing individuals with the opportunity to develop the requisite skills to generate social capital. Provision is something often overlooked by advocates promoting social capital production through reduced welfare spending. Regardless of whether income is conditional, the key to enhancing social capital is through investment. Education and training provide a straightforward way to improve an individuals' potential to generate social capital, which is essential for those without the requisite skills and existing cultural capital. As noted earlier, there was some support for total LM spending and training spending to reduce social capital inequalities. Entry into the labour market is one way to improve an individual's opportunities to access social capital. An alternative approach, one that UBI could provide, is participation in civil society.

Social policy is geared towards labour market participation, yet the prospect of full employment remains elusive across all EU countries. As rapid technological change continues to challenge labour, new approaches are required to substitute the possibility of work with a valued contribution. Here social policy has an opportunity to strengthen the value of social contribution beyond economic participation towards civil society and investment in social capital. Empowering individuals and local communities is a way of redefining contribution towards more socially productive means. Participation income is a way to begin this process. The focus of such a policy should not be limited to those of lower-income groups but needs to

ensure the universal nature of UBI is maintained. The centrality of universalism to policy is essential for trust-building, providing the structural foundations for social capital, social cohesion and participation.

The danger of current EU policy, particularly its response under austerity, has the potential to undermine social capital development. The focus on welfare as efficiency and measurable expected returns of spending, alongside attempts to address social inclusion, has led to a reduction in generosity and an increasing turn towards means-testing. Such a direction increases the conflict over resources, undermines perceptions of deservingness and is likely to exacerbate the cultural distinctiveness of lower SEGs. As my research indicates, this runs counter to the positive effects of universalism and generosity on trust and participation outcomes for individuals within Europe.

8.5 Limitations and Future Research

8.5.1 Individual-level

The analysis in chapter five focussed on four socioeconomic groups, specific to the resources perspective. However, there is also the potential for variation in outcomes for other social groups, such as gender, age and ethnicity.

Gender makes a difference in how much time one can dedicate to volunteering and the type of volunteering (Wilson 2000). Typically, men have more active social networks (Van Oorschot and Finsveen 2010), participating more in business and political associations (Pichler and Wallace 2009). Women tend to be involved in more associations relating to health and social services (Kroll 2010). The gendered difference of network diversity finds men more likely to gain access to information and jobs in voluntary networks (Lin 2000); while women have access to less diverse networks, and some see a reduction in the size and volume of contact as a result of a 'child-rearing effect' (Lin 2000:788). Here the difference in access afforded to men and women can be understood concerning the wider structural separation of the familial roles on childbearing, alongside exclusion to formal networks, and in particular power and prestige.

The reconciliation between paid and unpaid work is considered vital for women's social capital profiles (Lowndes 2000), which means the stratification functions of the welfare state have the potential to affect the development of an individual's social capital. A family policy that promotes independence with flexible working patterns, generous maternity leave and child-care provision will enable a great deal more autonomy than a welfare state that supports

traditional family values (Davaki 2010). Alternative forms of support and generous provision may reduce the need to rely on informal networks but at the same time increase flexibility for investing in formal networks. One would also expect that a system that promotes greater autonomy and resources through entitlement is likely to improve trust outcomes in the institutions of provision. Alongside family expenditure, the generosity measure of income replacement could also better reflect the gendered nature of the provision. Specifically, a measure that accounts for the net replacement of single mothers would be a valuable contribution to understanding the effect of generosity on social capital outcomes for women.

It was not possible to account for individuals ethnicity with the data set used in this study. However, much like the examined SEGs, there are likely to be issues of access and inequalities between ethnic groups that remain unaccounted. Economic inequality increases social barriers between ethnic groups that, in turn, reduce informal and formal social capital (Gesthuizen et al., 2009:136). Conflict over resources, particularly between denizens and immigrants, are also likely to challenge the trust outcomes of those who find themselves restricted as labour market outsiders. The increasing trend of welfare chauvinism within Europe, with calls for restrictions on access to welfare provision (Taylor-Gooby et al., 2017), will likely be detrimental to the social capital development of immigrants. How the welfare state responds in terms of generosity and universal entitlement may have far-reaching consequences for the cultural distinctiveness and interpersonal trust between groups. Therefore, policies that challenge interpersonal trust (which is central to social capital formation) are another area for meaningful research.

8.5.2 Dependent variable

A limitation with the current measurement of accessing social capital within network structures is the ability to account for online networks. The available data is somewhat limited and, beyond being on the internet, provides little in the way of adequate operationalisation. Social capital within the context of online communities has generated a significant amount of recent research, which is undoubtedly an important area for modern forms of access. Whether we find the transfer of traditional forms of solidarity and participation engendered through welfare states online is an interesting question. Access to the internet may seem ubiquitous, yet there are still likely to be structural issues that decide access. If social inequalities are reinforced through Internet usage, as Neves et al. (2018) find, then welfare states and social policies are likely to be vital for future research.

8.5.2.1 Culture

To some extent, the macro-level indicators of generosity, universalism and GDP are accounting for cultural differences. The types of welfare state structures shape social relations, while GDP represents a general modernisation process that shapes individuals' relationships. Something observable in the negative effect that both the welfare state and GDP had on informal networks. Owing to the relational nature of social capital, we would still expect an element of cultural influence unaccounted for at the individual level.

Culture can help explain the negative outcomes of network membership, in the case of privileged access or group conformity that may have detrimental consequences to the individual or society. For example, in our case, culture may influence the responsibilities to care, the acceptability of lending money, charity or protesting. Although the theoretical distinction made in this thesis is one of access to resources and arguably less susceptible to cultural influence than the frequency of contact and participation, there is still likely to be some cultural differences. Whether culture mediates, the welfare state social capital relationship would provide a relevant area for future research. There is some evidence to suggest that institutions are central to explaining trust outcomes even after accounting for cultural variations (Nannestad et al., 2014).

8.5.3 Methodology

Accounting for variation in social capital outcomes for individuals in different welfare states has been a principal area for investigation. Our methodological approach reflected the available data of individuals within countries and applied multilevel analysis. As social policies are organised at the national level, this assessment of the macro-micro relationship makes sense for comparative analysis. However, other contextual influences on individuals' social capital are likely to be relevant at lower geographic levels, such as regions and local authorities. [Indeed, Putnam's (1993) original social capital thesis developed from identifying civic associations as the main reason for differences between the regional administrations of North and South Italy’s performance

.]

While it was not possible to address regional variation with the dataset used, it is important to acknowledge that the existing resources within local areas and the implementation of a

national policy locally might influence social capital production. This limitation is not specific to this study but is a larger issue for (cross-sectional) survey data in general. Comparative datasets are restricted by funding limitations, which often means adequate sample sizes for regional data preclude analysis of variation.

The limitations of cross-sectional data also constrain us. While we have shown that positive and negative relationships between the welfare state and social capital exist, we cannot confirm they are a direct cause. This limitation was highlighted explicitly in chapter 7, where without a direct causal pathway between the dimensions of social capital, multiple competing models coexist. Examining evidence from numerous longitudinal studies may provide a way to inform and specify models with greater certainty.

8.5.4 Wellbeing

The analysis in chapter five confirmed that the welfare state positively influences all social capital dimensions, except for informal social capital. As previously suggested, whether this is an actual crowding-out of individuals informal networks; or whether the welfare state actively steps in to provide the support when required is difficult to determine. What the moderating inequalities models in chapter six indicated was that in countries with greater generosity, those with existing capital would most likely see an increase in access to informal networks compared to lower SEGs. This observation raises the interesting question of what the influence of generosity on informal networks means for individuals themselves and their immediate wellbeing. After all, the crowding-out of informal networks is significant only in terms of whether access is restricted and whether; this is detrimental to wellbeing.

The importance of social relationships for individuals' wellbeing is well-documented (Argyle 1987; Shields and Wooden 2003; Searle 2008) and substantiated throughout the empirical literature. We find a positive effect of informal networks (Helliwell and Putnam 2005; Kroll 2010; Bartolini et al., 2012), formal networks (Keyes 1998; Frey and Stutzer 2000; Meier and Stutzer 2008; Bacchetti 2009), interpersonal (Helliwell 2006; Hudson, 2006; Bjørnskov, 2007; Kroll 2010) and institutional trust (Helliwell and Putnam, 2004; Hudson, 2006; Dolan et al., 2008) are all associated with greater wellbeing.

There is also evidence of the positive effect of the generous and universal welfare state on wellbeing and life satisfaction (Radcliff 2001; Graham & Pettinato, 2001; Di Tella et al., 2003; Haller and Hadler; Pacek and Radcliff 2008; Kotakorpi and Laamen, 2010; Flavin 2011; Ochsen and Welsch 2012; Wulfgramm 2014). Here, the decommodifying and universal functions of the

welfare state combat against market insecurities, providing safe refuge from market forces, enhance a shared sense of solidarity, increase the life chances and experience of the world, and improve wellbeing.

So far, we have established the relationship between the welfare state and social capital. An unexplored relationship is how the welfare state affects the importance of social capital for wellbeing. As the welfare state provides access to resources, one would expect the importance of social capital for individual wellbeing to be less where the generosity of the welfare state is greater — as such, crowding-out should not affect wellbeing where support is sufficient. In addition, we might expect the welfare states impact on wellbeing to be mediated through the impact they have on social capital formation [for different groups of individuals].

Although the government's interest in social capital is primarily preoccupied with its productive potential, as a resource, social capital is of value in itself and a significant contributor to our wellbeing. This makes the exploration of the social capital, welfare state, wellbeing relationship a vital and fruitful area for future investigation.

8.6 Conclusion

This thesis has highlighted the importance of a dimensional approach in addressing the influence of the welfare state on social capital outcomes. Significant for communitarian approaches that emphasise the role of the individual and civic associations in social capital development; we find strong evidence of the generous welfare state supporting social capital and not crowding-out, as some suggest. Where there is a potential crowding-out observed is with informal networks. Here the welfare state can be seen to replace traditional forms of informal support. Whether this actively crowds out or the welfare state steps in to fulfil a need is challenging to determine and requires future clarification. Perhaps the critical question is what this implied crowding-out means for an individual's wellbeing - an area that should be considered for future research.

Where there is a question raised for institutionalist accounts of the welfare state influence on social capital is the impact of generosity on social capital between SEGs. As generosity did not moderate social capital inequalities as expected. In some instances, we find that those with existing (economic and cultural) capital benefit more from generous entitlement. Here social policy needs to do more to address the existing class cleavages and improve opportunities and access for lower-status groups. This inevitably requires more significant investment - [Austerity

and reduced entitlement will only exacerbate existing inequalities]. There was an indication that spending on the labour market and training could improve social capital inequalities (for benefit recipients and the unemployed). As such, consideration should be given to social investment strategies to strengthen social capital outcomes.

Although limited, our findings are broadly supportive of the centrality of trust to social capital formation. Through universalism and generosity, the welfare state has a vital role in maintaining trust and supporting social capital. In a climate of reduced support and a trend towards means-testing, the concern of current policy is the detrimental impact this could have on trust, participation, and broader social cohesion. With this in mind, I proposed UBI as an alternative approach for social policy consideration, one that maintains the central importance of universal inclusion while providing economic security to enable social capital production. Directly investing in social capital offers the opportunity to respond to the increasingly uncertain and technologically driven times by empowering individuals and local communities towards a sustainable, socially productive future.

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Appendix A Definitions of social capital

Table A.1: Definitions of social capital (Adler and Kwon 2002)

External versus Internal	Authors	Definitions of Social Capital
External	Baker	'a resource that actors derive from specific social structures and then use to pursue their interests; it is created by changes in the relationship among actors'; (Baker 1990, p. 619).
	Belliveau, O'Reilly, Wade	'an individual's personal network and elite institutional affiliations' (Belliveau et al. 1996, p. 1572).
	Bourdieu	'the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition' (Bourdieu 1986, p. 248).'made up of social obligations ('connections'), which is convertible, in certain conditions, into economic capital and may be institutionalized in the form of a title of nobility' (Bourdieu 1986, p. 243).
	Bourdieu Wacquant	'the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalised relationships of mutual acquaintance and recognition' (Bourdieu and Wacquant 1992, p. 119).
	Boxman, De Graai. Flap	'the number of people who can be expected to provide support and the resources those people have at their disposal' (Boxman et al. 1991, p. 52).
	Burt	'friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital' (Burt 1992, p. 9).'the brokerage opportunities in a network' (Burt 1997, p. 355).

	Knoke	‘the process by which social actors create and mobilise their network connections within and between organisations to gain access to other social actors' resources' (Knoke 1999, p. 18).
	Portes	‘the ability of actors to secure benefits by virtue of membership in social networks or other social structures’ (Portes 1998, p. 6).
Internal	Brehm, Rahn	‘the web of cooperative relationships between citizens that facilitate resolution of collective action problems’ (Brehm and Rahn 1997, p. 999).
	Coleman	‘Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure’ (Coleman 1990, p. 302).
	Fukuyama	‘the ability of people to work together for common purposes in groups and organisations' (Fukuyama 1995, p. 10).'Social capital can be defined simply as the existence of a certain set of informal values or norms shared among members of a group that permits cooperation among them' (Fukuyama 1997).
	Inglehart	‘a culture of trust and tolerance, in which extensive networks of voluntary associations emerge’ (Inglehart 1997, p. 188).
	Portes Sensenbrenner	‘those expectations for action within a collectivity that affect the economic goals and goal’ seeking behaviour of its members, even if these expectations are not oriented toward the economic sphere’ (Portes and Sensenbrenner 1993, p. 1323).
	Putnam	‘features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Putnam 1995, p. 67).

	Thomas	'those voluntary means and processes developed within civil society which promotes development for the collective whole' (Thomas 1996, p. 11).
Both	Loury	'naturally occurring social relationships among persons which promote or assist the acquisition of skills and traits valued in the marketplace. . . an asset which may be as significant as financial bequests in accounting for the maintenance of inequality in our society' (Loury 1992, p. 100).
	Nahapiet and Ghoshal	'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilised through that network' (Nahapiet and Ghoshal 1998, p. 243).
	Pennar	'the web of social relationships that influences individual behaviour and thereby affects economic growth' (Pennar 1997, p. 154).
	Schiff	'the set of elements of the social structure that affects relations among people and are inputs or arguments of the production and/or utility function' (Schiff 1992, p. 160).
	Woolcock	'the information, trust, and norms of reciprocity inhering in one's social networks' (Woolcock 1998, p. 153).

Appendix B Response rates

Table B.1 EQLS country response rates

Country	Sample size	Response (%)
Austria	1,032	51.4
Belgium	1,013	49.9
Bulgaria	1,000	61.4
Czech Republic	1,012	45.2
Germany	3,055	41.4
Denmark	1,024	35.3
Estonia	1,002	54.9
Greece	1,004	45.1
Spain	1,512	37.1
Finland	1,020	39.6
France	2,270	31.7
Hungary	1,024	42.4
Ireland	1,051	49.9
Italy	2,250	40.2
Lithuania	1,134	45.2
Latvia	1,009	51.5
Netherlands	1,008	32.4
Poland	2,262	61.6
Portugal	1,013	38.2
Romania	1,542	59.7
Sweden	1,007	100
Slovenia	1,008	48.8
Slovakia	1,000	61.7
UK	2,252	26.5

Appendix C Dependent variable

Table C.1: Correlations between observed measures of social capital

	Community	Association	Charities	Trade Union	Other
Community	1				
Association	0.2382	1			
Charities	0.2865	0.2324	1		
Trade Union	0.1375	0.1623	0.1916	1	
Other	0.2190	0.1745	0.2274	0.1602	1

	Help	Advice	Job	Depressed	Money
Help	1				
Advice	0.2947	1			
Job	0.1684	0.214	1		
Depressed	0.2516	0.3504	0.2034	1	
Money	0.2353	0.2559	0.2739	0.2529	1

	Religious	Online	Sports	Social
Religious	1			
Online	-0.0972	1		
Sports	-0.0316	0.4778	1	
Social	0.0458	0.3047	0.418	1

	Meeting	Protest	Petition	Official
Meeting	1			
Protest	0.2703	1		
Petition	0.2344	0.2964	1	
Official	0.2763	0.1737	0.2596	1

	Parliament	Legal system	Press	Police	Government	LA	Interpersonal
Parliament	1						
Legal system	0.6809	1					
Press	0.4275	0.4530	1				
Police	0.4814	0.6024	0.4236	1			
Government	0.7746	0.6258	0.4076	0.5036	1		
Local Authority	0.5124	0.5131	0.4025	0.5016	0.5532	1	
Interpersonal	0.3034	0.3201	0.1898	0.2706	0.2831	0.2288	1

Table C.1.2: Social activities with voluntary organisations, CFA model results

Measure	Model
(χ2)	460.423
df	5
P-Value	0
RMSEA	0.049
(90% C.I)	(0.046 0.053)
CFI	0.981

Appendix D Household composition

D1.1: Informal social capital, by household composition of averaged entitlement

	Model 1.0 (Single)		Model 1.1 (1 earner 2 child)		Model 1.2 (Single 2 child)		Model 1.3 (1 earner 0 child)	
level 2 controls	B	SE	B	SE	B	SE	B	SE
Total net replacement rate	-0.072+	(0.036)	-0.119**	(0.038)	-0.053	(0.045)	-0.106*	(0.045)
Non-means testing %GDP	-0.039	(0.036)	-0.068*	(0.032)	-0.057	(0.036)	-0.065+	(0.034)
GDP_PPS	-0.130*	(0.063)	-0.087	(0.058)	-0.153*	(0.060)	-0.096	(0.063)
Constant	0.847***	(0.021)	0.894***	(0.026)	0.857***	(0.027)	0.877***	(0.026)
Variance country level	0.002***	(0.000)	0.002***	(0.000)	0.003***	(0.000)	0.002***	(0.000)
Variance Individual level	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)
Log-likelihood	2960***		2963***		2960***		2962***	
R^2 level 1	0.088***		0.097***		0.087***		0.092***	
R^2 level 2	0.426***		0.534***		0.405***		0.477***	

N level 1=28,032, Level 1* controls(all models) gender, age, income, education, unemployed, cohabitation, benefits, domicile and citizenship

N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

D1.2: Voluntary social capital, by household composition of averaged entitlement

	Model 2.0 (Single)		Model 2.1 (1 earner 2 child)		Model 2.2 (Single 2 child)		Model 2.3 (1 earner 0 child)	
level 2 controls	B	SE	B	SE	B	SE	B	SE
Total net replacement rate	0.113**	(0.041)	0.108**	(0.038)	0.043	(0.044)	0.132**	(0.040)
Non-means testing %GDP	0.013	(0.032)	0.049	(0.031)	0.039	(0.035)	0.051+	(0.030)
GDP_PPS	0.109+	(0.057)	0.102+	(0.057)	0.165**	(0.058)	0.082	(0.057)
Constant	-0.035+	(0.020)	-0.069**	(0.026)	-0.033	(0.027)	-0.068**	(0.024)
Variance country level	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)	0.002***	(0.000)
Variance Individual level	0.070***	(0.000)	0.070***	(0.000)	0.070***	(0.000)	0.070***	(0.000)
Log-likelihood	-2553***		-2553***		-2556***		-2552***	
R^2 level 1	0.082***		0.083***		0.077***		0.084***	
R^2 level 2	0.607***		0.614***		0.520***		0.638***	

N level 1=28,032, Level 1* controls(all models) gender, age, income, education, unemployed, cohabitation, benefits, domicile and citizenship

N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

D1.3: Political social capital, by household composition of averaged entitlement

	Model 3.0 (Single)		Model 3.1 (1 earner 2 child)		Model 3.2 (Single 2 child)		Model 3.3 (1 earner 0 child)	
level 2 controls	B	SE	B	SE	B	SE	B	SE
Total net replacement rate	0.035	(0.036)	0.038	(0.033)	0.009	(0.035)	0.035	(0.037)
Non-means testing %GDP	0.035	(0.028)	0.047+	(0.027)	0.042	(0.028)	0.046+	(0.028)
GDP_PPS	0.134**	(0.050)	0.128**	(0.050)	0.153**	(0.047)	0.130*	(0.052)
Constant	-0.060***	(0.017)	-0.073**	(0.023)	-0.058**	(0.022)	-0.068**	(0.022)
Variance country level	0.001***	(0.000)	0.001***	(0.000)	0.002***	(0.000)	0.001***	(0.000)
Variance Individual level	0.045***	(0.000)	0.045***	(0.000)	0.045***	(0.000)	0.045***	(0.000)
Log-likelihood	3609***		3610***		3609***		3609***	
R^2 level 1	0.097***		0.097***		0.096***		0.097***	
R^2 level 2	0.609***		0.614***		0.597***		0.608***	

N level 1=28,032, Level 1* controls(all models) gender, age, income, education, unemployed, cohabitation, benefits, domicile and citizenship

N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

D1.4: Interpersonal social capital, by household composition of averaged entitlement

	Model 4.0 (Single)		Model 4.1 (1 earner 2 child)		Model 4.2 (Single 2 child)		Model 4.3 (1 earner 0 child)	
level 2 controls	B	SE	B	SE	B	SE	B	SE
Total net replacement rate	0.130+	(0.077)	0.127+	(0.071)	0.127+	(0.074)	0.126	(0.079)
Non-means testing %GDP	0.112+	(0.060)	0.154**	(0.059)	0.148*	(0.059)	0.153*	(0.059)
GDP_PPS	0.104	(0.106)	0.094	(0.106)	0.131	(0.099)	0.092	(0.111)
Constant	0.259***	(0.034)	0.217***	(0.047)	0.229***	(0.043)	0.231***	(0.044)
Variance country level	0.007***	(0.001)	0.007***	(0.001)	0.007***	(0.001)	0.007***	(0.001)
Variance Individual level	0.065***	(0.000)	0.065***	(0.000)	0.065***	(0.000)	0.065***	(0.000)
Log-likelihood	-1449***		-1449***		-1449***		-1450***	
R^2 level 1	0.099***		0.100***		0.099***		0.098***	
R^2 level 2	0.470***		0.476***		0.471***		0.465***	

N level 1=28,032, Level 1* controls(all models) gender, age, income, education, unemployed, cohabitation, benefits, domicile and citizenship

N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

D1.5: Institutional social capital, by household composition of averaged entitlement

	Model 5.0 (Single)		Model 5.1 (1 earner 2 child)		Model 5.2 (Single 2 child)		Model 5.3 (1 earner 0 child)	
level 2 controls	B	SE	B	SE	B	SE	B	SE
Total net replacement rate	0.142*	(0.068)	0.199***	(0.057)	0.118+	(0.067)	0.162*	(0.069)
Non-means testing %GDP	0.072	(0.054)	0.125**	(0.047)	0.109*	(0.053)	0.119*	(0.051)
GDP_PPS	0.284**	(0.094)	0.228**	(0.085)	0.324***	(0.089)	0.253**	(0.096)
Constant	0.279***	(0.030)	0.203***	(0.038)	0.254***	(0.039)	0.238***	(0.038)
Variance country level	0.006***	(0.001)	0.004***	(0.001)	0.006***	(0.001)	0.005***	(0.001)
Variance Individual level	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)	0.047***	(0.000)
Log-likelihood	2956***		2959***		2955***		2957***	
R^2 level 1	0.174***		0.191***		0.171***		0.178***	
R^2 level 2	0.639***		0.709***		0.626***		0.652***	

N level 1=28,032, Level 1* controls(all models) gender, age, income, education, unemployed, cohabitation, benefits, domicile and citizenship

N level 2=29 countries, $^{+}$ p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Appendix E Income data

E1.1: Individual level controls, comparison breakdown of listwise deletion sample

Missing data		Full sample		Diff%
Male	Female	Male	Female	
57.01	42.99	57.43	42.57	0.042
Employed	Unemployed	Employed	Unemployed	
92.68	7.32	92.83	7.17	0.015
Benefits	None	Benefits	None	
14.84	85.16	15.52	84.48	0.068
Degree	No	Degree	No	
24.33	75.67	23.82	76.18	0.051
Cohabiting	No	Cohabiting	No	
60.34	39.66	60.16	39.84	0.18
Rural	Urban	Rural	Urban	
47.34	52.66	48.02	51.98	0.068

E1.2 Age groups, comparison of listwise deletion sample

Age	18-24	25-39	40-54	55-64	65+
Missing data	8.28	22.02	26.1	17.82	25.77
Full sample	7.05	22.39	26.07	18.14	26.34
% Diff	1.23	-0.37	0.03	-0.32	-0.57