THE UNIVERSITY *of* EDINBURGH

Jan Eichhorn

WELL-BEING BEYOND UTILITY

Contextualising the effect of unemployment on life-satisfaction using social capital

PhD Sociology
The University of Edinburgh
2012

Abstract

This thesis analyses how the effect of unemployment on life-satisfaction varies in different contexts using data from two large-scale surveys (the World Values Survey and the European Values Study). Over 40 Western-European and Anglo Saxon countries are included in the investigation. Through multilevel modelling, relevant national-level factors are identified that moderate the impact of unemployment upon life-satisfaction relationship. The study shows that in particular socio-demographic and cultural country-level variables affect how individuals experience unemployment and how it is insufficient to rely on economic indicators only.

In order to situate individuals in not only their national context, but also in their personal one, social capital constructs are integrated into the project reflecting the networks individuals are part of. More accurate estimates of the unemployment effect are calculated using structural equation modelling to control for endogeneity effects. The results show that the role of unemployment for life-satisfaction appears to be highly contextualised. After taking into account selection biases from socio-economic characteristics of an individual as well as their social capital resources, the negative effect of unemployment upon life satisfaction that is consistently found cannot be verified as robust and independent. Instead, different domains of social capital largely determine what effect unemployment has on life-satisfaction for different individuals. Furthermore, significant variation in the effect of unemployment between countries, found in the simpler multilevel models, largely disappears when personal context is taken into account. This implies that future investigations should reconsider how to contextualise individual-level processes regarding subjective well-being. The findings from this project suggest that instead of contextualising the direct effects of predictors on life-satisfaction with country-level factors, it may be more appropriate to contextualise the personal context people live in and investigate the effects at the individual level thereafter.

The results are discussed in a framework contrasting utility-based micro-economic approaches to understanding human behaviour with approaches that address subjective well-being emphasising the variety of human motivations, beyond profit maximisation.

For my parents

Acknowledgements

I am foremost indebted for the continuous, invaluable support I have received from my supervisor John MacInnes who has not only helped me with the work on this project, but also gave me the chance to use the PhD to explore many opportunities reaching beyond the research work itself.

I owe thanks to many people who have helped me develop ideas which influenced this thesis, but I would like to highlight some in particular who commented on drafts of my chapters and papers, giving me useful feedback and advice that strengthened my understanding of the concepts and methods: Neil Thin (who also supported me as my second supervisor), Paul Norris, Lindsay Paterson and Jan Delhey.

Even before commencing my PhD research several people at Jacobs University Bremen supported me in designing the research proposal, continued to give me advice and/or acted as referees supporting this and other applications. Without their support and encouragement this project could not have been developed this way: Adalbert Wilhelm, Franziska Deutsch, Antonia Gohr, Marco Verweij and Hilke Brockmann.

Furthermore I am grateful for the extensive sponsorship I have received from the Foundation of German Business (Stiftung der Deutschen Wirtschaft) to conduct my research. Additionally I was fortunate to receive a school scholarship from the School of Social and Political Science, University of Edinburgh, covering my tuition fees. Through funding from the European Science Foundation and the European Social Survey I was able to attend several extensive courses in advanced quantitative methods which enabled me to apply the techniques used in this thesis.

Conducting the focus groups as the qualitative pilot in this study would not have been possible without the helpful, non-bureaucratic cooperation with Jacobs University Bremen and the Arbeits- und Lernzentrum Bremen.

Finally, and probably most importantly, I had incredible support over the whole period also on a personal level. This includes several people mentioned above already, and extends to many friends who continue to inspire me with the manifold and amazing paths they pursue.

But nobody could I thank more than my wonderful family. Having two parents who always believed in the goals I set myself, doing everything they could to help me realise them while making sure that I would always feel home with them must be the best foundation to embark onto any larger project. I am fortunate to have had this support throughout my life, not just from my parents, but also my amazing brother who I owe a lot of my knowledge to. The encouragement and advice I received from him and my great sister in law to-be, helped me to make quite a few difficult decisions.

I could not possibly end this short text without saying thank you to my partner Dan, who continues to impress me on a daily basis with his intellect, ambition and kindness and who has been with me for many joyful, stressful and challenging moments throughout the PhD process. Having been able to share this experience with him made it so much more enriching and fulfilling.

Content

1. Introduction

1.1. Overview of this project

This thesis explores how economic, demographic and cultural country-level factors affect the relationship between personal unemployment and subjective well-being. The investigation focuses mainly on European countries and where appropriate is supplemented with Anglo-Saxon ones. Using data from the World Values Survey (2010) and the European Values Study (2011) multilevel models are applied to achieve this goal.

The research is grounded in the theoretical reflections that the project starts out with. After illustrating the relevance of the research, a discussion of the field of happiness studies is presented. Different conceptions of happiness representing mainly economic, psychological and sociological approaches to the concept are introduced and their standard operationalisation discussed. Identifying critiques and limitations of the approaches then allows us to identify the most relevant conceptualisation of happiness for the analyses in this project.

The identified conceptualisation will then be applied within an exploratory multilevel investigation including 40 European and Anglo-Saxon countries. In a cross-sectional analysis, individuals classified as unemployed are contrasted to those employed controlling for standard individual-level socio-economic characteristics. While the focus of the remaining investigation is on the unemployment-well-being relationship, the socio-economic control factors are also explored with regards to how country-level factors may be affecting their influence on life-satisfaction as the dependent variable. A set of economic, demographic and cultural variables at the country level is explored regarding viability as potentially moderating factors. Based on this the unemployment effect is scrutinised in more detail with regards to its robustness in varying societal settings.

After this exploratory analysis the unemployment effect is analysed systematically placing the individual respondents within a structural framework that allows us to distinguish between their personal connectedness in their society and the level of connectedness of the society in comparison to the others, using data from 44

countries in the European Values Study. After discussing social capital as a meaningful approach to understanding and operationalising connectedness, measures are introduced that allow to assess the individual and aggregate levels of different structural social capital dimensions for the individuals and countries included in the analysis. Using structural equation modelling techniques individual-level socio-economic covariates are not only controlled for, but also used to identify self-selection biases enabling endogeneity to be reduced and the unemployment-well-being effect to be estimated more precisely. Social capital indicators are integrated to characterise the individual respondents and moderate the unemployment effect both at that level and as aggregate characteristics of the respective countries establishing the connection between the individual-level process under investigation and both individual and societal structures.

After the discussion of the substantive results, methodological conclusions are presented to inform further research in the field in particular with regards to the introduction of relevant context domains to well-being analyses and accounting for structure and endogeneity in cross-sectional research designs. Finally, suggestions for further research building on both the substantive and methodological insights are made, highlighting the reach and the limitations of this project.

1.2. The pervasiveness of economic utility

The use of simplifying microeconomic approaches in public discourses relating to the labour market and in particular unemployment is as pervasive as it often is misleading. Shortly before assuming office, later Minister for Economic Affairs of the German government, Rainer Brüderle demonstrated this memorably in a televised discussion in August 2009 (Hart aber Fair 2009). Discussing the introduction of a minimum wage Brüderle adamantly objected to the proposal arguing that any interference with the price for labour in a market means a distortion of the most efficient equilibrium. An increase in cost for the employer would result in a loss in jobs and an increase in the amount of benefits paid, causing a decrease in the cost of unemployment, which would cause a reduction in the motivation of those unemployed to start working again thus perpetually increasing unemployment further. Brüderle's line of argument is in perfect congruence with the foundational

lessons of textbook economics in which decisions in a market interaction are determined by price and quantity following the laws of demand and supply only - a fact reflected in the statement of one of his co-discussants ironically thanking him for citing first-semester microeconomics lessons.

While generally plausible, the demand-supply type analysis used by the minister, relying on microeconomic principles and assumptions only, postulates a fundamental restriction: Decisions of individuals are based on the price-mechanism only. The motivation of an individual to do anything within a market framework therefore depends solely on whether their demand or supply position matches that of the opposite. Other motivational factors and subjective orientations such as taste are only factored in post-hoc the market interaction. They are derived *from* the interaction, but do not constitute its determining factors, and are conceptualised as utility (Frey & Stutzer 2002, p.19). Such an analytical framework does not place a substantial emphasis on situating individual-level processes in macro-economic and social contexts. Consequentially, unemployment that is not based on cyclical, short-term transitional or similar factors, can therefore be considered voluntary and explained by the material gain of employment not outweighing the material cost of unemployment. In such a microeconomic model where the factors determining behaviour are all objectively measurable and individuals make up conceptually equivalent units, any form of societal aggregation is simply operationalised as the sum of all its constituting units. The same concepts that apply to individuals apply to aggregations in the same manner.

This understanding of society championing utility-based approaches finds its foundation in the work of Jeremy Bentham (1789/1996). He rejects the use of subjective measures as unreliable in analyses and advocates analyses based on utility as an objective instrument that is not distorted by the subjective differences between individuals, assuming that individuals' motivations can be derived as they aim to increase their own utility. This then provides the foundation for Bentham in arguing that the well-being of society is determined by the aggregation of the well-being of the individuals within it. This well-being is the objectively conceptualised utility and the greater the number of people that have high levels individually, the

greater would be the utility and thus the well-being of the society made up of those people.

1.3. A preceding counter-perspective: Adam Smith on happiness

To find an opposing theoretical framework to Bentham's utility-based one, it is helpful to recall an author who has written about well-being and happiness even before Bentham: Adam Smith. At first sight this may appear to be a somewhat strange choice of counter, considering that Smith is commonly associated with the free-market ideas stipulating that all humans are motivated in their actions by pure self-interest aiming to increase their personal material benefit. Therefore free markets would be best suited to enhance societal well-being, as they allow all people to fully pursue the improvement of their own material well-being and thus the well-being of all others. Proponents of strong free market principles would argue, that the famed *invisible hand* described in Smith's *Wealth of Nations* (1776/1999) should be trusted often citing the passage most suited to illustrate the key message that "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love." (Smith 1776/1999, p. 119).

While widely reiterated, such an understanding of Adam Smith's work and arguments would be a gross over-simplification and clearly misleading (Rasmussen 2006, Smith 1998, Tribe 1999). In the *Wealth of Nations* Smith discusses several manifestations of human interactions that are not grounded in self-interest and maximisation aims. While self-interest is an important element of the structure of human motivations, it is not the sole enabler of every possible activity. Even in the famous passage cited above self-interest is only considered to be the factor that creates the rationale for exchange of certain goods, allowing for the specialisation of labour and thus increased productivity. Smith however does not argue that all decisions are based on self-interest only. Quite to the contrary, in the *Theory of Moral Sentiments* (1790/2009), of which the first edition precedes *The Wealth of Nations* by many years, he stipulates that there may be many situations in which an individual could choose a path of action that is not going to lead to the

maximisation of their own utility, because the concern for a particular norm or for the well-being of others might matter more than their personal self-interest (pp. 18, 31, 44, 47, 49). Smith develops an image of human nature in which individuals are interested in others beyond the question of how much one's engagement with that person may be beneficial for one's own utility (pp. 13, 15, 163):

"When the happiness or misery of others depends in any respect upon our conduct, we dare not, as self-love might suggest to us, prefer the interest of one to that of many." (p. 159)

Self-interest is important and beneficial in Smith's viewpoint, in particular when considering its relevance to developing a spirit of entrepreneurship which enhances the creation of material well-being (p. 192). But at the same time he emphasises that economic success and happiness are not equivalent (p. 251). He proposes a conceptual difference between happiness and wealth (pp. 73, 215) and conceives of both as positive, ideally if they come in combination. Material well-being stems from self- interest, while happiness – a goal in its own right – originates from certain character traits (particularly prudence, emphasising restraint) and the care for other people (pp. 308). Emphasising this distinction is of great importance as Smith conceives of happiness as a relative concept that always depends on the contexts in which people and situations are situated and thus form different reference groups that will affect the subjective evaluations regarding one's happiness (pp. 21, 134, 212).

Being able to recall their experiences people are able to evaluate their current situation and anticipate how their choices may affect their happiness at a later stage (pp. 20, 23, 56, 59). This understanding is very similar to that of contemporary happiness researchers' concept of cognitive life-satisfaction (Veenhoven 1984). Well-being then does not only depend on market interactions that can be predicted by objective factors irrespective of subjective differences between individuals. Deriving an understanding of human motivations and decision making based on factors in which individuals would only be driven by the self-interested maximisation paradigms would therefore be insufficient to understand the factors that people actually take into account when deciding on a particular path of action. The

subjective evaluations of individuals depend on their societal framework as well as personal characteristics and cannot be understood as a mere post-hoc concept. Smith explicitly inverts the order of the model of behaviour that utility-focused approaches set out: personal preference or taste, informed by experiences and resulting expectations about the related happiness partially determine the choices people make (1790/2009, pp. 26). For Smith, preferences are not derivatives of utility, they precede it.

However, the anticipations people have may not be accurate. An expectation about a positive effect of an action on happiness may not actually be matched by a change in happiness after that action was engaged in – an idea very close to the contemporary concept of *focusing illusions* (Kahnemann et al. 2006). Smith particularly cautions about the expectation that any gain in material well-being will be associated with a gain in happiness (1790/2009, pp. 52, 211). He cautions against an overemphasis on wealth disconnected from considering what domains actually may be responsible for increasing happiness:

> "This disposition to admire, and almost to worship, the rich and the powerful (…), is the great and most universal cause of the corruption of our moral sentiments." (p. 73)

He argues that material wealth is desirable and an important motivational goal channelled through the mechanism of self-interest. However, at the same time it is not sufficient to rely on material measures to establish a good society[1]. According to Smith, in order for a society to be functional it necessarily requires interaction and exchange between its members through channels of reciprocity and care for others. This can be achieved through individuals engaging in these concerns for reasons of self-interest. So self-interest and material well-being become fundamentals for the functional characteristics of a society. However, a society in which this were the only reason why people cared and interacted, Smith argues, would always be less happy than a society in which reciprocity and care were also grounded in norms and other structures beyond self-interest (p. 104). In a functional society members

[1] While there is substantial overlap, good and happy societies are not fully equivalent conceptually. This issue is elaborated on in more detail in chapter 2.

would cooperate, in a happy one however, they would do so not just because of egoistic reasons. The well-being of society then is more than just the summation of the individual utilities of its members. To conceive of material and other forms of well-being as conceptually distinct, it is not enough to rely on the objective indicators that utility-based approaches employ to understand why people pursue certain activities rather than others. The factors determining an individual's well-being then have to be understood as conceptually distinct from those that determine the well-being of society overall, because one is not simply an aggregation of the other (pp. 103, 106, 108). Subjective indicators of well-being are imperative if we want to understand what motivates people to make particular choices.

1.4. Contemporary relevance of happiness research

The relevance of subjective indicators for assessing well-being has been more widely acknowledged over the last decade. Several countries have undertaken government sponsored projects looking into how the assessment of subjective well-being may enhance the existing set of mainly economic measures that have been used to evaluate a country's well-being. These projects range from assessment-based ones, like the extensive Stiglitz commission work for the French government (Stiglitz et al. 2009) to Bhutan declaring the normative goal of the state's activities to be a rise in *gross-domestic happiness* (CBS 2011).

Evaluating well-being in a more comprehensive way that includes subjective elements is not trivial however. There are many methodological concerns that need to be taken into account. Research in the field of happiness studies has advanced greatly to show how subjective well-being can be measured in valid and meaningful ways, but it has also highlighted important issues that need to be taken into consideration. A crucial aspect is that analyses of well-being need to distinguish between the individual level and any form of aggregation conceptually. A factor that contributes to the well-being of individuals may not be having the same effect when used as an aggregated quality of, for example, a country with regards to the level of societal well-being. This has been established empirically, and will be discussed and

further substantiated in this study[2], but is also expressed in the theories of Adam Smith presented above, distinguishing between personal and societal processes. Both are connected and the connection can be investigated, but one is not merely the aggregation of the other – similar to micro- and macroeconomic processes being interrelated, but not conceptually equivalent.

This important aspect however is not reflected on extensively in the happiness research field. When individual-level processes are contextualised, this is often done in rather limited, incomprehensive ways. Even the topic through which happiness research arguably made its breakthrough as a meaningful concept, introducing subjective elements into economic analyses, is frequently researched in this way. Since the seminal paper by Clark & Oswald (1994) that provided an empirical foundation to argue against the notion of voluntary unemployment, many papers have been published investigating this process further. They show that unemployment is associated with a lasting loss in well-being (applying to subjective and objective measures). This challenged simplistic microeconomic understandings of human motivation which assumed that the price mechanism would regulate labour markets most efficiently. Depending on the cost of unemployment in comparison to employment people would make the optimal (utility-maximising) choices. In such a model those unemployed in the medium to long run should not see a reduction in their well-being, as the choice to be unemployed would be the optimal one. This idea had to be rejected empirically since the Clark & Oswald paper.[3] While a substantial amount of studies relied on individual-level analyses only, several have also taken into account factors reflecting the economic situation of countries or regions. But none have properly looked into which non-economic contextual factors may affect the relationship between unemployment and well-being.

[2] See Eichhorn (2011) for an example of how the effects of personal religiosity on life-satisfaction may not be intrinsic in nature, but due to conformity behaviour depending on the level of religiosity in a country, or Li & Bond (2010) for an example how certain personal value orientations only affect subjective well-being when in congruence with the dominant societal ones.

[3] The argument is discussed in more detail - also pointing to a wider array of studies investigating the topic – in chapter 3.

The effect of unemployment on well-being has been shown to be contextual (Clark 2003). The size of the impact for individuals varies depending on aggregate factors. Therefore, studies that essentially follow a simplistic microeconomic approach, explaining the role of unemployment as an individual-level mechanism only are not able to capture all relevant factors influencing the effect. But even the studies that have taken into account contextual factors (see for example Di Tella et al. 2001; Di Tella & MacCulloch 2006; Clark 2003) provide only a very limited scope. While macroeconomic variables, such as regional or national unemployment rates and inflation are included in those studies two other domains are essentially ignored. Both socio-demographic features and cultural differences characterise our image of societies, as well as economic factors. However, they have been essentially ignored in the study of how unemployment affects subjective well-being. Recalling Smith, this would appear to be a questionable omission. Economic, social and cultural structures are all interrelated in his accounts and jointly define societies and thus affect the behaviour of individuals within (Smith 1790/2009, pp. 73, 21, 134, 212). Understanding the experience of personal unemployment differing subjectively between individuals, it seems implausible to assume that none of this variation would be affected by cultural or socio-demographic contexts in which a person lives.

This project explores how economic and non-economic national-level factors affect how individuals experience unemployment. Such investigation is not just relevant in an academic context, but also informs public policy. Recently, for example, the government of the United Kingdom commissioned their *Office of National Statistics* (ONS) to undertake the study *Measuring well-being* to develop indicators that measure states of well-being beyond material provision. The recognition of the importance of subjective orientations gains momentum in professional and public discourse through this initiative, reflected not only by government references, but also substantial numbers of newspaper articles and other publications on the topic. However, looking in detail at the project documents published by the ONS (Waldron 2010, Evans 2011) it becomes clear that the important methodological considerations outlined above are not taken into consideration.

One of the key aims of the ONS project for example is to compare regions in the UK according to their levels on different well-being indicators. The methodology of

previous regional comparisons is not supposed to change, but new, subjective well-being indicators are added to the previous objective ones. The essential problem is that individual-level measures are meant to be aggregated in order to achieve this – without considering the conceptual differences between individual- and aggregate level well-being structures highlighted above.[4] The ONS (Waldron 2010, Evans 2011) project relies mainly on analyses at either the individual or aggregate level alone – without discussing the interrelations. The effects on well-being found in these studies are elaborated on as if they were interchangeable. An individual-level variable found to affect subjective well-being and a societal characteristic affecting mean well-being in a country have to be treated as conceptually distinct. This project will not only substantiate this claim, but furthermore show the complexity of contextualising the structures that affect a person's subjective well-being focusing on the effect of unemployment thereon.

[4] These differences are discussed theoretically in detail in chapter 2 and are examined empirically in chapters 3 and 5.

2. Conceptualising and measuring happiness

2.1. The rationale for using happiness studies

While most people would have little problem with talking about happiness in discussions about their personal lives, introducing the concept in debates about public policy will often lead to more doubtful reactions. It might not sound like a very scientific concept at first sight, but rather something that belongs in the private sphere. However, this intuitive conception reveals an essential problem: Why should an important constituent of personal life be neglected in the scientific analysis of people's social interactions and not be considered in policy discussions affecting the same people? Happiness can be more than a 'soft' idea, but an insightful concept that can re-inform understandings of society. This introduction will provide a rationale for the use of the concept. This will be followed by a discussion of the different approaches to understanding happiness and a distinction between its role for individuals and the societal contexts they are situated in. After introducing ideas based on alternative approaches a conceptualisation of happiness approaches that can be used for the analyses in this project will be presented and followed by a reflection on the operationalisations that have been developed to measure different domains of happiness.

2.1.1. Re-informing economics

As discussed in the introduction to this thesis, happiness is not actually a novel concept in the study of human interactions in economic settings (Bruni & Porta 2005). For scholars like Adam Smith economics was not to be understood as distinct from other social analyses and thus logically required the incorporation of well-being into a social context within the research framework (Bruni 2006). However, happiness was gradually dropped from economic analyses. In particular in the context of utilitarianism happiness was seen as not measurable and was replaced by the indirect concept of *utility*. In such an approach human interactions are conceived of only as characteristics within a demand-supply framework and therefore

> "As far as sociality is concerned, in the economic explanations, sociality is either (a) not considered as a relevant component of happiness, or (b) intended in terms of positionality." (Bruni & Porta 2005, p. 9)

Happiness in that sense is not an intrinsically relevant quality but merely a consequence of market interactions. At most, it can be seen to reflect a person's position within that framework, but it would not constitute a determining factor. Happiness consequentially would be equivalent to the utility that actors receive following the market interactions (Frey 2008). Instead of aiming to gain an understanding of what motivates people's actions and what contributes to their satisfaction, utility approaches assume that the outcome of micro-economic mechanisms *reveals the behaviour* of any actor through the emergent results (Frey & Stutzer 2002, p. 19) and thus is sufficient in understanding happiness.

However, the utility-based approach, which has functioned as the foundation for public policy in many realms, is based on a number of questionable assumptions (Frey & Stutzer 2002, pp. 19). Humans then come to be seen as rational actors with perfect knowledge, not only about market characteristics, but also about their personal desires and preferences as well as all possible choices and their cost-benefit structures (Frey 2008). Research from several disciplines has demonstrated that these assumptions do not hold. Often people do not act rationally (Bruni & Porta 2005) and commonly individuals do not choose the option that brings the highest utility maximisation – which should be the case according to these orthodox utility-based theories (Frey & Stutzer 2002). The relationship between material wealth and personal evaluations is more complex. Individual evaluations are shaped by more factors than those captured by economic approaches that only consider utility (as an outcome), rather than the many processes which shape human interactions within a society (Bruni 2006). Frey and Stutzer (2002) summarise:

> "(...) economists have shied away from dealing with happiness. They have long considered it to be an 'unscientific' concept. Instead they have based their microeconomic theory on utility that has no material content (...). Happiness is often seen as a purely personal issue. We argue that this is not

> the case. Individual happiness is strongly determined by the society one lives in." (p. i)

These observations, reflecting on theoretical discussions and empirical findings, support the theoretical prepositions Adam Smith formulated in his *Theory of Moral Sentiments* (1790/1996).[5] Taking into account both the theoretical model and the empirically based criticisms of assumptions in orthodox economic thought, human interactions cannot be predicted based on theories of the market only. Considering happiness can help to develop a better understanding of motivations and actions of individuals and their effects on society and vice-versa. The "return of happiness" (Bruni & Porta 2005, p. 2) may then be able to re-inform the image of society that we have gained through modern economic thought and improve our ability to interpret the interplay between the individual and the collective level.

2.1.2. Paradoxes of happiness

Simplistic microeconomic approaches assume that the right incentive structures, defined through prices in the market, will result in the best allocation of resources and the most utility-maximising actions. Following this idea, this would be all that there is to say about the motivation patterns of individuals. It fits certain common conceptions about what drives people to do certain things and what brings them happiness. The problem is that many of such common conceptions are not supported by empirical evidence.

Happiness studies illustrate this very well in what is often termed *paradoxes of happiness* where a generally accepted understanding is found to not be valid. The most famous of these paradoxes is the Easterlin paradox (Bruni 2006). Richard Easterlin (1974) found that while within countries individuals with higher incomes reported higher levels of happiness, contrary to common belief this was not the case for between-country comparisons. Doubts about the strength of the connection between wealth and well-being above certain sustenance levels have been explored

[5] Please refer to the introduction of this thesis for a detailed account.

since then.[6] Daniel Kahnemann et al. (2006) show that a *focusing illusion* leads to people anticipating a much larger gain in happiness than actually experienced after a particular rise in income. Consequentially, people may feel frustrated about the outcome of their actions and strive for even greater gains which may lead them to continue striving for greater levels of satisfaction believing they can achieve them through specific means (here, increases in material wealth), but actually they cannot (Marar 2003).

While probably the most discussed paradox, it is not the only one of importance. In many theories of modernisation freedom and choice are valued as inherently good, not only because of societal aspects and questions of morality, but also because they are commonly understood as contributors to a good life. However, increases in choice can be associated with decreases in reported well-being while certain relationships that limit freedom (relationships, but also hierarchical authority structures) are found to be associated with the opposite effect (Martin 2008).

The question of what constitutes life satisfaction and happiness is more difficult to answer than one might assume at first intuitively. Moreover, happiness and life satisfaction might not be aims in themselves, but distinct to a notion of a good life, or a contributing element to it (Brülde 2007). Traditional economic-centred approaches, in particular when based in strong notions of utility, cannot capture such questions. However they are of crucial importance, because they allude to a variety of different motivation structures that influence the actions of individuals within a society. As will be shown throughout this chapter, insights from several disciplines such as sociology, psychology and economics are required to be utilised jointly in order to account properly for the relationship between wants, desires, anticipations and resulting actions of individuals. When taking those into account it becomes apparent that the view of individual actors as rational and utility-maximising without taking happiness into account leads to mistaken assumptions in

[6] The operationalisation and derived findings from the analysis have been critically assessed and re-evaluated in several ways (see for example Inglehart et al. 2008). However, it remains an important starting point for a description of the emergence of and interest in happiness research and is still referred to commonly in support of the general idea of distinguishing between merely economic and a wider set of well-being indicators.

economic theories and thus invalid predictions about the actions of people in a society (Layard 2005).

2.2. What is happiness?

Debates about what constitutes happiness for a person date back long before Adam Smith and can even be traced back to ancient Greece (White 2006). While Democrites suggests an understanding of happiness based on notions such as good fortune, joy of bliss and a general satisfaction with life, which still sound quite intuitive even now, Aristotle suggests a more encompassing approach (Veenhoven 1984, pp. 15). Happiness has to be understood as the greatest goal, as all other goals humans might aspire to can be seen as paths to greater ones, while this is not the case for happiness (Martin 2005). To Aristotle happiness is a *eudaimonic* concept, representing the strive for humans' true needs that are innate and beyond the personal evaluations and feelings they might perceive. Only activities undertaken that are based on such fundamental principles will be able to lead to a *good life* and thus happiness. The eudaimonic understanding of happiness thus places a great emphasis on the process leading to an evaluation about the life of a person rather than understanding happiness as the outcome of other actions. Living well is associated with the pursuit of real, intrinsic goals and a notion of self-determination. (Ryan et al. 2008).

It is highly doubtable whether any person asked "What is happiness?" would have come up with the conceptualisation above. While having some intuitive idea about it and feeling comfortable in using the word in language every day, describing concisely what they mean by the word would be a difficult task for most people (Martin 2005, p. 11). Happiness might not even be a final value as the Aristotelian perspective suggests, but connected to a good life through different mechanisms (Brülde 2007).

'Feeling happy' is something that the Aristotelian view might not be able to capture sufficiently, but which many individuals might nevertheless consider important. Emphasising happiness as a feeling that an individual might experience is a perspective based on the utilitarian theories of Bentham (Veenhoven 1984). Happiness there is a *hedonic* concept that manifests itself as an *affective* category. A person feels happy to the extent that their experience of pleasure is greater than their experience of pain (Parducci 1995). As such, happiness is detached from a

larger narrative and sufficiently encapsulated within the immediate individual experiences of humans. While generally agreeing with the view that the experiences of humans themselves determine happiness, several authors suggest that happiness is more than mere levels of affect. They place an emphasis on *cognitive* processes and the evaluations of individuals about their experiences rather than simply considering the momentary affect (Veenhoven 1984). To distinguish this approach from hedonic notions of happiness, cognitive evaluations are commonly referred to as *life-satisfaction*. Understanding happiness as the satisfaction of "life-as-a-whole" (Veenhoven 1984) means that it is not just a feeling of one particular instance, but based in a cognitive process that takes into consideration evaluations of the status of one's life in the present, but also the life lead in the past (and potentially the anticipations for the future).

Happiness (as a more affective notion) and life-satisfaction (as a more cognitive notion) then seem to be more different elements that inform individuals' well-being. Both dimensions appear to be relevant. Some authors argue for placing the emphasis more strongly on one or the other, but mostly agree that both should be considered. The concept of *subjective well-being (SWB)* then allows for a more detailed discussion of how these dimensions contribute to how humans feel about and evaluate their lives (Bruni & Porta 2005). In the following section the different manifestations of this concept will be discussed and contrasted to eudaimonic approaches that place a higher emphasis on factors beyond subjective evaluations.

2.3. Well-being: more than happiness

2.3.1. Objective happiness as subjective well-being (SWB)

The objective approach to SWB is closest to the utilitarian idea of hedonic affect, considering happiness as the summation of pleasures over pain (Veenhoven 1984). Therefore, in this approach, to understand the SWB of a person, one needs to be able to evaluate their levels of instantaneous utility (Kahnemann 1999). This means that adding the experiences of affect over all instances of a person's experience will yield the level of that person's well-being, which Parducci (1995) summarizes as "(...) the theoretical summation over separate momentary pleasures and pains." (p. 11)

Kahnemann (1999) describes this process as a bottom-up approach, where happiness is considered from its most fundamental experience. This approach, according to him, is preferable to asking people for retrospective evaluations of events, because they could never remember or consider all the feelings and experiences in equal manner when reflecting on them later. This recall problem (Parducci 1995) suggests that feelings created by certain events should be evaluated when they take place to not distort the information. Consequentially, these feelings or moods are then understood to be the factors manifesting the objective level of SWB of a person and have to be the only all-encompassing factors in order to justify the reliance on them for the approach to be consistent (Varelius 2003).

Calling this an objective approach to subjective well-being might at first appear to be an oxymoron. Indeed, happiness is considered here to be a characteristic that is subjective to an individual since it is not determined through an external framework of evaluative characteristics. At the same time though, if external observers were able to gather all the information about the pleasures and pains over all events, they could derive the level of the subjective well-being of that individual objectively (Kahnemann 1999) without having to rely on an additional retrospective evaluation of that person. Objective approaches also do not deny that cognitive processes are part of the process of a happiness evaluation. However, those processes are seen to influence the affective evaluations. Their impact will alter the present feelings and

thus they do not need to be considered separately, but are captured by the summation of momentary evaluations, understanding pleasure and pain as comprehensive judgments (Parducci 1995).

It is important to note that this approach assumes a one-dimensional evaluation along a good-bad continuum. This dimension is marked by the extremes of total pleasure and total pain and must have a stable zero-point (Alexandrova 2005). Kahnemann (1999) argues that the necessary distinction between the positive and negative evaluation as two separate evaluative concepts with a neutral dividing point between them is established through psychological and neurological research alluding to separate processes within the brain. Furthermore, a second requirement applies, as the approach assumes that there is a continuous process going on by which new affective evaluations are made permanently.

These two assumptions have been criticised from several perspectives. Evaluations of pleasure and pain do not always have to be distinct (Martin 2005) with a stable zero-point but can be part of more complex processes, as Alexandrova (2005) shows. Furthermore, she argues, it can be questioned whether momentary measures are actually as accurate as claimed. A momentary joy, for example about the mischief of another person, may turn into shame only after retrospective consideration. Kahnemann (1999) would argue that accordingly affective evaluations would change with positive and negative affect cancelling each other out eventually, thus incorporating the retrospective change in mood. However, this might not be the case, as the retrospective affect might not be of the same intensity or significance as the prior one. Creating an average would not enable accounting for this, unless all forms of evaluations could be totally reduced to their affective representation. However this itself can be questioned. It requires that moods and emotions essentially are objective themselves and accurately depict a person's current state. However, the evaluation of the current mood is still a judgement, a subjective evaluation (Parducci 1995). Calling it objective does not make it objective – it is still based on processes that cannot be understood externally, but require an individual's personal reflection on them (Varelius 2003). The idea of theoretically summing all evaluations thus becomes less plausible when considering the practical implications.

The doubts about the zero-point assumption as well as the caution regarding the applicability of the theoretical framework to reality do not render the idea of objective approaches void or unhelpful. Affect and mood are relevant to understanding happiness, in particular with regards to intuitive notions about it. However, considering cognitive processes more explicitly rather than just understanding them as inferable from affective judgements seems to be imperative and will be done in the following section.

2.3.2. Cognitive evaluations as subjective well-being

Similar to the objective approach presented above, the subjective understanding of SWB rejects the idea that the happiness of a person could be inferred from circumstances only, but conceptualises it as a property of an individual (Veenhoven 1984). Discrepancies between apparently objective circumstances in which events take place and the experiences and evaluations of these events by individuals have been documented in a variety of fields (Schwarz & Strack 1999). Therefore the evaluations of individuals are the dominant factor in determining their level of SWB. Contrary to the objective approach however, the subjective one does not support the idea that a summation of affects would be comprehensive. The apparent objectivity of moods themselves is questioned (Varelius 2003; Alexandrova 2005) and therefore attempted objective approaches to evaluations of a person's SWB critically evaluated.

Subjective approaches do not deny the significance of hedonic affect, but focus on the evaluation of it including other factors following a cognitive process (Veenhoven 1984). External factors are not understood as unimportant but indeed seen as influential in forming the evaluation about an individual's SWB (Frey & Stutzer 2002). While some of the external factors are sufficiently described by socio-economic indicators, a very important consideration to be taken into account are inter-personal comparisons (Schwarz & Strack 1999). Certain external factors (such as status) may affect happiness, often not in a direct way, but mitigated through comparisons with others. The effects cannot be considered in personal terms only, but depend on reference groups an individual may use for orientation. Furthermore,

comparisons also take place at an intra-individual level, placing current evaluations in the context of previous ones, reflecting on the information sources and considering future anticipations (Schwarz & Strack 1999, pp. 64).

Taking into account all these multiple factors and mechanisms may initially suggest that the subjective approach to SWB is not a very reliable one, considering that it would be close to impossible to operationalise all the concerns mentioned. Proponents of it suggest the exact opposite though. Precisely because well-being is such a complex characteristic the best way to understand it is through focusing at the evaluation that is based exactly on the processes described: The cognitive, subjective evaluation of the individual at question. The subjective approach does not require the ability to operationalise every factor influencing the evaluation, but simply uses the evaluation reached at the end of the cognitive process. This is relevant also as this outcome could be seen as most likely to influence further action and decisions (Frey & Stutzer 2002).

Following this idea, well-being is evaluated not as a momentary characteristic, but as the satisfaction with *life-as-a-whole* (Veenhoven 1984) with hedonic levels of momentary affect having influenced the cognitive process, but within the context of other factors and a reflection on the past, the present and the future. Kim-Prieto et al. (2005) suggest that the global evaluative judgement about one's life is the last of four major steps when evaluating SWB (pp. 266). After the first stage of life circumstances and events, the affective reactions to them are considered, later on recalled and finally placed within a global evaluation. Each step affects the next one and therefore all need to be considered to fully understand SWB.

However they argue that it would be inadequate to thus equate global life-satisfaction with SWB, as the different steps will be altered through additional external influences as well as contextual comparisons, meaning that the evaluation of life-satisfaction itself is influenced by situational factors. Consequentially, the process cannot be understood in a mono-causal fashion as it is highly dependent on those other factors as well as the personality type an individual has.[7] Finally, the

[7] A more elaborate discussion on the influences of personality types can be found later in this chapter.

global evaluation is likely to influence further life events and inform the affective evaluations of them. In particular when understanding SWB as the outcome of a cognitive process, the global evaluation of life-satisfaction alone may not suffice for a fully comprehensive understanding (Veenhoven 1984). Accounting for hedonic levels of affect is significant in an additional way: It has been shown that life-satisfaction evaluations vary significantly with the mood of individuals when asked to perform the evaluation (Schwarz & Strack 1999, pp. 74). Therefore, caution has to be applied when interpreting measures of subjective approaches to SWB.

2.3.3. Eudaimonic happiness as well-being

Approaches to SWB, based on hedonic or cognitive evaluations, are focused on outcomes of certain processes for the individuals involved in them. Eudaimonic approaches place the processes at the centre of attention. A certain hedonic outcome may be reached in a multitude of ways and which way is chosen determines the level of well-being predominantly. According to this view SWB concepts have to be treated with great caution, as just because somebody reports a high level of affect or satisfaction does not mean that they actually have high levels of well-being (Deci & Ryan 2008). Eudaimonic approaches emphasise essential, underlying characteristics of human nature that matter even prior to socialisation. Contrary to SWB approaches that treat certain actions and motivations only with regards to their effect on the individual, eudaimonic concepts consider the nature of goals and actions more closely and highlight the importance of actions being based on real sentiments or genuine motivations (Bruni & Porta 2005) that reflect 'true' human needs.

Well-being then is associated with certain ways of leading a life. Different aspects of a respective life have been alluded to, such as the emphasis of intrinsic motivations, narratives suggesting the search for personal growth (Waterman 1993) or the need for meaning and purpose (Martin 2005). In part these aspects may be related to SWB orientations, but they encompass more than the hedonic and cognitive evaluations of individuals as Ryff and Keyes (1995) argue for example. Basing their theory on research into psychological well-being they identify six contributing factors to an encompassing concept of well-being: self-acceptance, personal

growth, a purpose in life, positive relations with others, environmental mastery and autonomy.

Other researchers focus on one particular characteristic rather than creating a battery of contributing factors. Ryan et al. (2008) suggest that eudaimonic well-being is related to self-determination which is strongly associated with a notion of autonomy. The importance of autonomy for a virtuous, and therefore happy life goes back to Aristotle (Deci & Ryan 2008) and illustrates the relation to the original eudaimonia ideas. Autonomy in this sense is perceived broader than just as a notion of being able to make a choice. In an Aristotelian view they would be virtuous, in modern eudaimonic approaches they would be understood to reflect true inner needs, rather than superficial goals or as Deci and Ryan (2008) phrase it "(...) having the experience of choice, to endorsing one's actions at the highest level of reflection." (p. 6).

Ryan et al. (2008) explain self-determination in the eudaimonic context further and distinguish four concepts that represent the motivational processes of humans, the adherence to which can increase well-being: pursuing intrinsic goals and values, behaving in autonomous (rather than controlled, common) ways, being mindful and acting with awareness as well as satisfying psychological needs (such as relatedness). They stipulate that adhering to these motivational concepts in life would have positive effects for physical and psychological wellness. In summary they state:

> "(...) eudaimonia is viewed as living well, defined in terms of both pursuing goals that are intrinsically valued and of processes that are characterized by autonomy and awareness." (p. 163)

In contrast to SWB approaches, eudaimonic principles suggest certain general principles that are elementary in determining a person's well-being and that go beyond the hedonic and cognitive evaluations that an individual could make. The claims made are of grand reach. Even when based on psychological research, they often rest on a substantial degree of abstraction. Ryff and Keyes (1995) for example state that finding that their indicators are only related to SWB measures in limited

ways means that their measures capture more about well-being than the SWB ones do. However, it might also be the case that the approaches do not actually investigate the same concepts or even attempt to do so. A more careful analysis is required. This also includes the discussion of the role of autonomy and the role of happiness as a goal in life (Brülde 2007).[8]

[8] This issue will be elaborated on further below in the discussion of alternatives to happiness.

2.4. Influences on individual evaluations

So far the approaches to understanding happiness have been presented in a rather isolated fashion, as distinct, self-contained concepts. However, there are important characteristics of individuals that influence the evaluations of well-being significantly. In the following section two of the most relevant factors will be discussed: the impact of personality types and the process of adaptation.

2.4.1. Personality types setting the baseline

The approaches looked at so far all treated humans as homogeneous entities that only differ according to their own evaluations of their SWB. However, it is crucial to notice that we might have to distinguish between individuals and how they are reaching their evaluations about well-being, as these evaluations are strongly influenced by the personality types the respective persons have (Frey & Stutzer 2002). Both hedonic and cognitive evaluations of well-being are not independent of each other[9] but relatively reliable over time for an individual (Kim-Prieto et al. 2005). In particular life-satisfaction evaluations of SWB are found to be moderately stable across life situations. Diener and Lucas (1999) argue that this is due to personality types and cannot just be explained by external factors. Contrary to Kahnemann's (1999) bottom-up approach of objective happiness, they suggest a top-down approach, in which more encompassing evaluations affect smaller domains of satisfaction.

Partially determined biologically, partially through early socialisation[10], individuals are found to have rather consistent temperament types throughout their lives (Diener & Lucas 1999). The relative stability of life-satisfaction over years is partially attributed to this: people tend to have a *baseline* of life-satisfaction that remains rather constant. There are several models that suggest different conceptualisations of personality types and investigate their links to SWB. All allude to the importance of taking into account psychological processes in the formation of life-satisfaction

[9] As cognitive evaluations, for example, are also influenced by momentary moods (see above).

[10] Insights have been gained through a multitude of research approaches, in particular including twin studies.

evaluations, as also recognized by Frey and Stutzer (2002, pp. 20). The most significant temperament types affecting SWB appear to be extraversion (related to the dimension of pleasant affect) and neuroticism (related to the dimension of unpleasant affect) (Diener & Lucas 1999, pp. 218). Indeed, they prove to be significant in determining the level of SWB and relate to the consistency of the baseline.

Investigating relationships to indicators more closely associated with eudaimonic approaches such as self-determination and intrinsic goal formulation, the relationship with personality types is not as strong and decreases in particular when taking into account SWB controls (pp. 220). There are a number of explanations of how personality types might affect well-being. Some suggest that high SWB is associated with the fit of the personality to the environment of the person, others focus on framing contexts that focus the cognitive processes in certain ways depending on personality types, while others focus on the issue of the socialisation of certain emotional states as socially positive or negative (pp. 222). The exact causalities are not fully explored and probably several of these processes play a role.

In summary however, it can be noted that personality types are important in the understanding of SWB levels. There are certain context dependencies, such as that negative experiences are more consistently evaluated, while positive ones show higher variation depending on societal influences (Diener & Lucas 1999). Temperament types thus do not explain all of SWB, but certainly set a certain disposition which is the base from which SWB evaluations take place. In their four-stage model of SWB[11] Kim-Prieto et al. (2005) explicate that personality types are one of the reasons why we cannot just look at the final step of their model (global evaluations) but need to consider each step, if we aim for a comprehensive evaluation of SWB, as each of them is influenced by the relations originating from differences in personality types.

[11] A more detailed description of their approach can be found above in the section about the subjective approach to SWB.

2.4.2. Getting caught in treadmills: Adaptation

Understanding that certain baselines frame evaluations of SWB because of temperament types is in itself an important consideration, but relates to another significant distinction necessary for understanding happiness. So far evaluations of well-being have been treated as an evaluation at a particular time point. However, it is crucial to consider that certain evaluations – hedonic or cognitive – may well change over time. Indeed, adaptation is a very influential process when discussing happiness. Changes in levels of SWB tend to be only of short duration and tend to reset to the baseline (Kahnemann 1999) largely determined through differences in personality (Diener & Lucas 1999). SWB then is seen to be rather stable over time and most changes do not have a lasting effect. Indeed, the impact of most events in life that result in a change of SWB evaluation eventually decreases rather quickly so that the evaluation returns to the original *set-point* at the baseline (Diener & Biswas-Diener 2008). This process of adaptation is necessary for humans to be able to cope with the continuing changes that they have to deal with in their lives (Lucas 2007).

Considering adaptation is so important because not taking account of it affects most people's lives significantly on a daily basis and thus should be considered within the context of a theory that tries to understand human motivations and actions better. Martin (2008) identifies this as one of the paradoxes of happiness, namely the *paradox of getting*: People tend to anticipate that certain actions will bring them happiness or higher levels of satisfaction with a particular domain or in general and therefore perform this certain activity. However, satisfaction with the result of the action may quickly diminish, because they adapt and fall back to their initial set-point. Kahnemann et al. (2006) empirically show this process regarding gains in income and the anticipated gain in happiness, finding significant processes of misevaluation, because of the neglect of adaptation taking place, which they term *focusing illusion*.

Two important mechanisms should be distinguished in understanding this process. First, people adapt in the sense that their SWB evaluation, differing from the baseline at a particular point (here in a positive direction) will reset to this initial set-

point after some time has passed. Accordingly they might try again to reach the higher level of SWB and will adapt again to it. They are caught in a *hedonic treadmill* (Kahnemann 1999).[12] Additionally, people also adapt to actual changes in life situations by adjusting their evaluative criteria without an actual change in the situational experience at which an evaluation takes place. An event that might have caused a certain level of SWB before may cause a different level after the life situation has changed. A person might for example undertake a certain vacation similar in quality to the previous year's one, but may experience less satisfaction from it, because their income rose and their comparative status has as well. They are caught in a *satisfaction treadmill*.

Both processes explain why baselines of SWB are relatively stable over time beyond any stability that might be accounted for by differences in personality. However, adaptation is not as universal as it might appear to be at first sight. Different people undergo a variety of adaptation processes also distinguishable by different situational contexts (Diener and Biswas-Diener 2008). Kahnemann (1999) also notes that losses in SWB are more influential and slower in adaptation than gains. Based on personality and the type of the event the duration of an adaptation process in particular can vary significantly. However, changes in SWB caused by certain life-changing events may never reset to the baseline. While some adaptation takes place, changes such as divorce or unemployment may shift the set-points permanently to a new location (Lucas 2007). In summary, SWB can be considered to be relatively stable over time, but differences in adaptation processes have to be considered as well as certain life events that may shift previously long-lasting baselines.

[12] Kahnemann applies this to his measure of objective happiness, but it can easily be understood as influencing all notions of SWB.

2.5. Beyond the individual: Considering the environment

In the section above mechanisms were presented that re-informed the process of SWB evaluations in individuals. Several times this included references to life events and changes in circumstances. The following section is devoted to investigating such external factors that might affect evaluations of SWB, first looking at life circumstances and then at cultural differences.

2.5.1. The effect of life circumstances

As noted in the discussion of personality types and their significance for the evaluation of SWB, the socialisation process individuals are exposed to, is likely to have some influence on their perspective on certain affective and cognitive evaluations in different situations (Diener & Lucas 1999). In the context of happiness, people might strive for certain goals not because of 'true', intrinsic motivations as eudaimonic approaches would suggest to be desirable. Instead they may determine their aims based on what they have learned to be desirable in particular societal contexts (Bruni 2006). This would partially explain focusing illusions such as the one based on an expectation of a higher gain in happiness from a certain gain in income than the gain actually experienced. Societal processes thus become an important frame for SWB evaluations.

Thus SWB is not just determined by individual processes but has to be understood within the context a person is embedded in, which Veenhoven (1999) describes as the *livability of the environment*. Set within this context individuals form their SWB evaluations. In doing so they are affected by external factors of varying nature including socio-demographic characteristics, economic and institutional factors (Frey & Stutzer 2002). Even rather crude characteristics, like the economic situation of the country people live in, affect happiness evaluations within a population, however the mechanisms through which this happens are complex (Layard 2005). Additionally, the more immediate environment of individuals plays a significant role (Frey & Stutzer 2002). Gains in social status for example do not always yield gains in SWB if people compare themselves to individuals who have experienced similar or greater gains. Being able to understand and cope with such aspects is also reflected

in Ryff and Keyes' model of eudaimonic well-being with the criterion of environmental mastery (1995), alluding to the importance of the idea that one's own well-being depends on how much control over these environmental factors one has.

As mentioned previously, large life events can also significantly affect happiness (Lucas 2007). But even without these infrequent big events differences between people can be observed according to a number of characteristics in cross-sectional comparison. An important factor seems to be the relations a person has with other people (Ryff & Keyes 1995). Family life, but also friendship networks and their character allow for a distinction between different groups of people with regards to their happiness (Martin 2005). While adding important information to our understanding of SWB, some caution must be applied: when people sharing certain characteristics are found to be relatively similar regarding their SWB evaluations, it is necessary to identify self-selection biases by investigating whether the distinct level of SWB is due to the characteristics themselves or whether those people share a certain predisposition to happiness that led them to develop similar other characteristics (Lucas 2007).

2.5.2. Cultural differences

Earlier it was suggested that people would probably come up with very different statements about what they considered to be the meaning of the word happiness and we have seen that it is a rather complex concept including a number of different domains. So far we neglected however that happiness might not just have different meaning for individuals, but also vary in meaning across cultures. The word 'happiness' itself has very different connotations already when being translated into many other languages (Griffin 2007). For SWB this is reflected in particular in different perspectives of viewing the value of the concept and what role it plays in certain domains of life. Certain characteristics that are associated with happiness have to be differentiated and play different roles in different cultural contexts (not only linguistically):

> "(...) there is a list of several non-reducible values, different instances of which contribute differently to the overall quality of a person's life." (Griffin 2007, p. 144)

Even eudaimonic approaches cannot be understood as fully comprehensive as certain apparently universal notions, such as self-improvement and autonomy, are valued very differently in some cultures as compared to others. Where Western Europeans and North Americans for example have been found to associate happiness closely with ideas around individually oriented SWB and in particular personal accountability and explicit pursuit of personal gain, people of East Asian countries focused on role obligation and dialectical balance of their feelings in describing happiness (Lu & Gilmour 2004). Significant differences in the understanding between certain East Asian societies and post-industrial ones have been demonstrated along several domains (for example Brockmann et al. 2009).

Uchida et al. (2004) further discuss these differences and find them to exist for the meaning of happiness, the motivations driving people's actions and the best predictor of happiness. North Americans tend to understand happiness as being attainable through personal achievement. They are motivated by maximising their experience of positive affect and self-esteem functions as the best predictor. On the contrary East Asians associate interpersonal connectedness with happiness and seek a good balance between positive and negative affect. Happiness then would mainly be caused by an embeddedness of the self in the prevailing forms of social relationships.

Taking into account these factors, it becomes apparent that neglecting cultural differences in research that investigates happiness in culturally very different contexts will be insufficient. That does not mean that comparative analyses are impossible, but that additional factors have to be taken into account when conducting such analyses. To summarize:

> "The cultural perspective assumes that psychological processes – in this case the nature and experiences of SWB – are thoroughly culturally constituted. Thus, culture and SWB are most productively analyzed together as a

dynamic of mutual constitution. (...) Culture can be a major force constructing the conception of happiness and consequently shaping its subjective experiences." (Lu & Gilmour 2004, p. 271)

2.6. Alternatives to happiness?

Happiness is a meaningful concept, connected to many areas of life. Whether it should be considered as the highest goal, as Aristotle did (White 2006) and several eudaimonic approaches reflect, or whether there are alternative approaches to understanding a good life and well-being that are more encompassing, is a question worth considering.

There are technical issues that raise doubts as to how far we can understand SWB concepts as synonymous to well-being (Chekola 2007) as outlined above. Bengt Brülde (2007) illustrates the problems at a more fundamental level rather graphically: Using the hedonic approach to happiness, equating well-being with dominance of positive over negative affect, would imply theoretically that a pig could be understood to be happier than a human. The cognitive approach on the other hand is not sufficient either as a positive cognitive evaluation of SWB might mask significant levels of negative affect. SWB approaches could thus lead a slave to report high levels of happiness – a questionable method according to Brülde. He suggests that evaluations of well-being have to be within the scope of *objectively pre-determined areas*, meaning that they should not be based on objectively false beliefs or non-autonomous judgements. This notion is closer to a eudaimonic understanding of happiness, but moves beyond it, as autonomy is not understood as a constituent of happiness, but may contribute in conjunction with it to something more encompassing that could be considered a good life.

Such an approach allows for other concepts to be considered as final values besides happiness, such as autonomy or rationality (Chekola 2007). Happiness itself might not require much of them (which eudaimonic approaches might suggest), but a good life does. Chekola suggests that a *global desire* or *life plan view* should be adopted where a good life and well-being are understood to be reached when a person aims at global desires towards a goal in life that is determined by true motivations and needs, identified through processes of autonomous and rational reflection. Sometimes these processes might cause a decline in happiness, when set-backs are experienced, so the interplay between them and happiness are all contributing factors in a more complex understanding of well-being.

Developing the idea further, Ömer Şimşek (2009) suggests that well-being should be understood as based on a life-as-a-project approach, as *Ontological well-being* that uses a whole-time perspective. In this approach, personal narratives are decisive factors as every individual would determine their own eudaimonic standards against which life could be evaluated. Affective and cognitive evaluations play a role, but they are only an element within the holistic ontological well-being, as they are set against the individual's private eudaimonic standards. Each cognitive and affective evaluation would then have to be considered for past, present and future to properly understand the full, ontological well-being of a person.

Alternatives to happiness-centred concepts can also be found in more applied discussions. Heavily based on the work of Amartya Sen several authors suggest the use of a *Capabilities Approach* in contrast to a pure happiness approach. Both concepts are interested in well-being and have a practical orientation devising instruments to develop policies for the enhancement of welfare (Bruni et al. 2008). The Capabilities Approach thus should not be considered as an opposite to a happiness based one. Indeed, happiness of individuals is considered important as one basis for a capabilities oriented perspective because it allows for a shift of focus from utilitarian ideas to welfare based ones (Sen 2008).

However, important differences between the two approaches can be found. Whereas the (modern) happiness based one originated in the question of how to understand the Easterlin paradox, the Capabilities Approach explicitly focuses on issues of poverty and development. So while the former is based in research about abundance of resources the latter one looks at the opposite (Bruni et al. 2008). Happiness is an important, but on its own insufficient instrument for welfare enhancement (Sen 2008). The immense rises in material well-being and societal stability achieved by post-industrial countries did not lead to corresponding increases in their happiness. Resource-oriented approaches, like the happiness one, are insufficient, as resources will translate into different meanings for different individuals.

The Capabilities Approach on the other hand looks at how certain contexts can enable people to become autonomous in their actions and develop into capable agents within their community and society. In this the approach is explicitly more normative than the happiness one, privileging topics such as inequality and its role in the enabling process (Bruni et al. 2008). While the happiness approach relies on subjective evaluations the capabilities one employs stronger notions of public reasoning as information sources as well. Proponents argue that by doing so it is better able to discuss public good problems that a pure happiness approach cannot. This however is contested, as others point to the growing understanding of meaningful aggregations of individual SWB evaluations.

The alternatives suggested here do not invalidate the concept of happiness as meaningful. However, they question its role within discussions about well-being and more specifically policies about welfare enhancement. The applicability of the different approaches will therefore depend significantly on the aim of the research that is conducted. Understanding well-being in a very comprehensive fashion would certainly require an orientation beyond SWB and simple eudaimonic concepts. A focus on certain particular mechanisms, such as capabilities empowerment and development, should consider happiness, but in a more differentiated perspective as suggested above. Having said this, SWB approaches, looking at a narrower and more direct use of a happiness concept may remain meaningful as contributors to other discussions.

2.7. A system of approaches to understanding happiness

Understanding what it means to speak of the happiness of a person in a conceptually sound way requires the integration of a number of approaches (summarised in figure 2.1). It is important to note that people are different in regard to their specific personality as well as their life circumstances, with distinct effects on how they evaluate happiness. Two general approaches can then be distinguished: those that focus on judgements of the individual (Subjective well-being - SWB) and those favouring a procedural understanding (eudaimonic well-being). Subjective well-being is composed of an affective and a cognitive component which are connected but can be analysed distinctly. Eudaimonic well-being on the other hand has a specific process orientation in which autonomy plays an important role. Happiness in this understanding is associated with following intrinsic goals that could be identified autonomously by individuals. More encompassing approaches to understanding well-being holistically (or what a Good Life means), suggest that happiness itself is only one contributor that has to be understood in the context of other final values such as rationality and integrates SWB and eudaimonic approaches.

The happiness of individuals cannot fully be understood without taking into account their contextual environment. Societal settings and levels of certain socio-demographic but also economic indicators provide an important framework within which individuals evaluate their happiness. Cultural differences contribute to this framework in shaping the understanding of what happiness is and what actions are predicted to be most likely to lead to it.

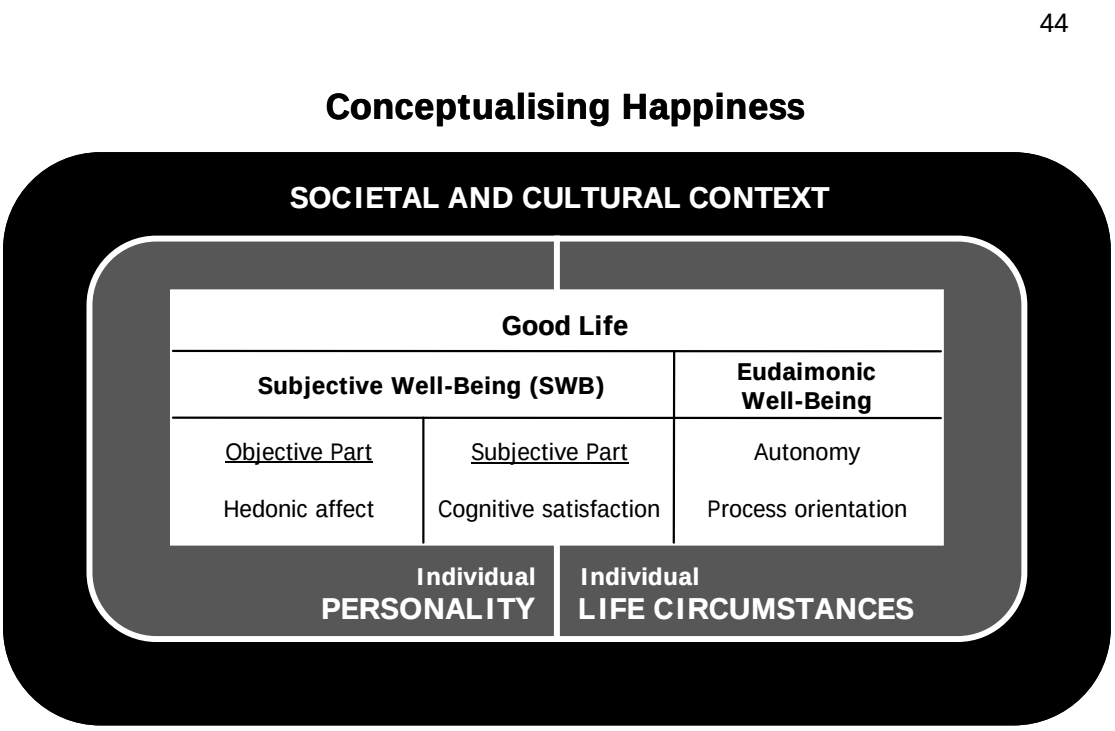


Figure 2.1: Conceptualising understandings of happiness

Taking all of these factors into account appropriately requires intense efforts in research work. It may not always be feasible or even possible to do so, which does not mean that certain elements of the happiness concept cannot be meaningful themselves. Certain analyses may well be aided greatly by including information based on SWB for example. However, it is crucial to keep in mind which part of the framework is used and what limitations might apply or could not be considered. Such an approach may not be able to capture all factors of what happiness means, but nonetheless could be an important instrument in research adding information about how people evaluate their lives, circumstances and actions.

2.8. The measurement of happiness

2.8.1. General considerations

Measuring happiness is an alternative to using the concept of economic utility in which an individual's objectives are derived as revealed preferences following their actions without measuring them directly (Frey & Stutzer 2002, Frey 2008). The utility approach requires strong assumptions, such as rationality of actors or perfect information and utility maximisation desires, that all are highly questionable.[13] It seems worthwhile pursuing a different approach and aiming to measure happiness directly, the question how to do this though is rather contested.

As a concept that is not attributable to one particular discipline but incorporates contributions from sociology, economics, anthropology, psychology and neuro-biology amongst other fields of study, it is no surprise that many different conceptualisations and measurement techniques exist. Techniques range from using elaborate instruments such as day reconstruction methods to applications of brain imaging/screening. Veenhoven (1999) identifies four categories of Quality of Life measures: medical, psychological, sociological and socio-economic measures. The following section will exclude a discussion of medical measurement approaches, due to their inapplicability in a policy-oriented, cross-country research design. The other three types will be reflected in the measures presented, however they cannot be treated as totally distinct at all times. While for example Experience Sampling Methods draw most strongly on psychological research, they are understood also in sociological and socio-economic contexts. Therefore, different approaches will be presented analogously to the different conceptions of happiness outlined above. Measures of eudaimonic well-being will be contrasted to measures of hedonic and cognitive subjective well-being to identify which ones are most applicable to the research design in this project.

Before commencing with this distinction a note of concern should be presented. The rejection of utility as inadequate does not in itself justify the use of happiness measures. Marinao Torras (2008) for example identifies an inherent subjectivity in any measure of well-being. Any subjective measure obviously acknowledges the

[13] See the introduction to the chapter for a more elaborate discussion.

fact, but even seemingly objective and comparable ones rely on a choice of criteria that has to be considered arbitrary and therefore inadequate to provide a fully comprehensive measure. While certainly important to consider this as an existing limitation, the alternative presented by Torras, namely 'enlightened discussion' of policy makers pursuing the common good, seems unsatisfactory. It is correct that all measures present a certain abstraction, but that does not disqualify their use as long as this is kept in mind, and surely it is not a limitation only concerning happiness research. An 'enlightened discussion' surely would make use of empirical analyses, while acknowledging that the measures used have certain limitations that prescribe the framework within which results can be interpreted. In practical terms we can see, for example, more alternatives to the measurement of happiness in the work done by the Stiglitz commission (Stiglitz et al. 2009). Apart from indicators of SWB they suggest also a range of objective indicators that clearly transcend simple utility-based concepts. These should be seen as complimentary, not rival approaches to the subjective ones this project focuses on.

2.8.2. Measuring eudaimonic well-being / a good life

Proponents of eudaimonic approaches advocate their use partially by pointing to an important limitation in SWB approaches. While cognitive life-satisfaction methods are generally recognized as preferable to hedonic measures for them, they still do not manage to capture actual well-being (Deci & Ryan 2008). A person may view their life satisfactorily, but not be leading a good life characterised by autonomy and a process orientation towards inner goals. With this in mind several authors reject an emphasis on quantitative measures, because they would be insufficient in capturing such a complex issue. Bauer et al. (2008) for example, basing their argument on self-determination theory, suggest that the study of people's narratives should be used as the basis for an appropriate evaluation of eudaimonic well-being.

Not all authors agree though and several frameworks for evaluating well-being in a eudaimonic context have been developed. In their foundational work, Ryff and Keyes (1995) devised 6 dimensions of well-being based on psychological research with the aim to provide a sound theoretical framework in which data could be

collected for analysis. The dimensions they distinguish are self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy. They find only limited correlations with SWB measures concluding that they can capture a more encompassing concept with their approach. While insightful, two problems arise: The data was obtained through structured questionnaire-based interviews, thus it still reflects subjective orientations. Additionally, while it reflects something different than SWB measures, this does not inevitably mean it better reflects well-being.

The development of several further well-being indices has improved the quantitative representation of theoretical constructs. Several indices reflecting autonomy based goal orientation (Purpose-in-Life, short PIL) measures have been devised. In a recent review Schulenburg and Melton (2010) find the construct by Morgan & Farsides (2009a) to be of the highest quality. To create their Meaning of Life Measure (MLM) they collected evaluations on 23 items reflecting different orientations of a variety of aspects of life from survey participants in their samples. Using factor analysis they devise five reliable subscales reflecting different parts of a meaningful/ good life: accomplished life, principled life, exciting life, purposeful life, valued life. Conducting further analyses (Morgan and Farsides 2009b), the authors explore the interconnections between the different scales to substantiate the approach as a coherent model. In relating it to a range of eudaimonic characteristics they allude to the meaningfulness of their measure as an indicator of well-being.

Using diary entries and hour-by-hour ratings Howell et al. (2009) further illustrate the role of indicators reflecting psychological need satisfaction – associated with good life characteristics, namely autonomy, relatedness and competence. While the first two domains are positively correlated with momentary happiness, competence has an inverse effect. Interestingly they find that SWB has a mitigating effect: those with higher levels of reported life-satisfaction experience greater happiness increases when undergoing the same respective changes in psychological need satisfaction.

Subjective well-being measures thus seem to be influencing how components in eudaimonic approaches affect momentary evaluations. Furthermore, it is important to note that the MLM measure as well as the ones compiled by Howell et al. (2009) or Ryff and Keyes (1995) are based on evaluations of individual respondents. The claim of eudaimonic approaches to find ways to evaluate the quality of life of individuals while avoiding equating those individuals' own judgements with actual life quality, is therefore not fully achieved by such measures. Criticisms against SWB measures as too subjective and incomparable must therefore also be posed towards quantitative measures of eudaimonic approaches as essentially subjective (Varelius 2003).[14] This does not disqualify them as measuring characteristics beyond SWB evaluations, but suggests that rather than rejecting SWB measures, both should be considered relevant in answering different questions.

2.8.3. Measuring hedonic affect: Experience sampling methods (ESM)

Proponents of objective happiness approaches suggest that the best way to conceptualise happiness is understanding it as judgements of pleasure over pain. The summation and averaging of these evaluations of hedonic affect reflects the state of well-being of a person (Parducci 1995) avoiding the pitfalls of cognitive evaluations, in particular their dependency on momentary context and mood as well as issues arising from recall problems (Schwarz & Strack 1999).

In practice however it is hardly imaginable that a researcher could measure all hedonic evaluations of an individual over a given period of time as it is understood as an ever on-going process. Instead the use of *Experience Sampling Methods* (ESM) has been developed as the primary means of measurement (Kahnemann 1999). Participating individuals are required to evaluate a sample of moments over a given period of time on a good-bad/ pain-pleasure scale with a stable zero-point separating the two halves of the scale. The average rating over the time period concerned can be understood as the measure of objective happiness for the respective person.

[14] Approaches exist that evaluate well-being without questioning individuals, but using measures of life circumstances. This poses a large problem, as it equates external circumstances with internal eudaimonic qualities and thus confuses causes and outcomes.

The methods of how to conduct experience samples have been developed in quite sophisticated ways since the 1980s (Scollon et al. 2003). While originally people were asked to fill in diaries with ratings after short time periods or after certain events, which of course included recall problems that were to be avoided, a more random sampling approach was devised over years of practice. First, participants would be equipped with alarm clocks that randomly would call them for their diary entries. This move from *interval-* (for example Nowlis & Cohen 1968) and *event-contingent* (for example Coté & Moskowitz 1998) to *signal-contingent sampling* has been further advanced by using devices that prompt participants for ratings randomly and allow for direct entry into the device (often worn like a watch) which synchronizes immediately with a central database.

Providing immediate evaluations without recollection biases, Kahnemann (1999) advocates this bottom-up approach as the best way to approach an objective measure of the well-being of individuals, as it is not influenced by arbitrary choices of categories by the researcher and allows for qualified comparisons between individuals. In their comprehensive review, Scollon et al. (2003) summarize five major strengths of the approach: a direct relation to contingencies of behaviour[15], the inclusion of the measurement in real-life situations, a reflection of within-person processes, the avoidance of self-report measure weaknesses and the possibility of integration into multi-method approaches.

Even with the high levels of sophistication a number of significant concerns regarding ESM techniques remain. Being a participant requires a substantial interference in one's life with being prompted for ratings at all possible times during the day including work and leisure time. Accordingly a selection and motivation bias has to be considered where certain groups of individuals are more likely to participate (Scollon et al. 2003) and cooperate reliably throughout the process. Furthermore, the doubts regarding the theoretical assumptions of stable zero-points and the comprehensiveness of the ratings (Alexandrova 2005) cannot be dismissed easily and thus the objectiveness claims require some caution.

[15] This is probably an important reason why in particular psychological research on happiness has been employing this method.

Therefore, certain situation biases also need to be considered in the measurement process. Higher attention may be paid to the evaluation of mood states than usually would be the case and respondents may therefore present different ratings than if they were theoretically be prompted without being situated in a defined measurement process (Scollon et al. 2003). Also, participants are found to be more responsive in certain types of situations, where the rating does not present as much of an intrusion. While proponents argue that cognitive evaluations are incorporated in the measure (Kahnemann 1999) as they are reflected in the over-time averaging of their influence on mood states, this is called into question by more critical voices (Varelius 2003) who emphasise the difference in evaluative processes in individuals. When inter-individual comparisons are therefore understood to be problematic, aggregation of scores becomes difficult.

Finally, a very practical problem has to be considered. Conducting ESM measurements is costly. Therefore samples are usually limited in size (Frey 2008). While being a highly utilised indicator to explore happiness and behaviour and its contexts, large-scale research questions in particular directed at cross-national comparisons seem to be hard to conduct with this method, in particular when trying to distinguish large-scale socio-economic differences within a population that require adequate sample sizes for each respective subgroup.

2.8.4. Measuring cognitive evaluations

Cognitive measurements of happiness are commonly undertaken using survey questions. The emphasis is placed on life-satisfaction where people are asked to evaluate life as a whole and their satisfaction with it. However, satisfaction with particular domains of life (such as state of health, or family life) may also be investigated. Two main approaches can be identified (Frey 2008). Either short 3- or 4- item response options are provided where people can indicate whether they are generally more or less happy[16] or a 10-point scale is offered on which people rate

[16] Common options for a 3-item response would be *rather happy* or *rather unhappy* and a neutral or *fairly happy* option, Common options for a 4-item response would be *very satisfied, fairly satisfied, fairly dissatisfied, very dissatisfied*

their level of satisfaction.[17] Analyses using the responses from these questions usually involve the investigation of relations to other concepts addressed by the respective survey typically involving rather large samples.[18]

Criticisms regarding the use of cognitive SWB measures have been formulated for theoretical and practical reasons. One of the most important frames of critique addresses the issue of the evaluation frames that are suggested to prevent inter-person comparability – simply formulated: 'Everyone understands something different under happiness when you ask them.' In particular Kahnemann (1999) while advocating ESM measures, highlights the importance of different personality types (Diener & Lucas 1999) and the influence of momentary mood on the actual evaluation. Framing is not limited to intra-personal characteristics however. Since questions are not asked in isolation but as part of a survey, substantial question-order effects emerge (Frey 2008, Kahnemann et al. 2006). A leading question requiring the respondent to consider a particular issue will change the perspective the respondent will have on the life-satisfaction question and outcomes are found to be different when the previous question is changed (Schwarz & Strack 1999).

Furthermore, as part of a survey instrument recall concerns are addressed, as any question on global evaluations represents a retrospective evaluation that is going to be selective in what is considered with what weight (Parducci 1995). The validity of cognitive evaluations is therefore doubted by critical voices, arguing that the values found for life-satisfaction could only have limited connections to objective life circumstances (Schwarz & Strack 1999).

The evidence on this claim is mixed however. A great range of projects have found substantial relations between cognitive measures and personal characteristics as well as life circumstances of people (Frey & Stutzer 2002; Martin 2005; Diener & Biswas-Diener 2008). But even when not related perfectly to all types of objective factors, this does not disqualify SWB measures *per se* (Lucas 2007), as such claims are based on cross-sectional approaches only. However, lasting effects that are not

[17] Where 1 typically denotes *fully dissatisfied* and 10 *fully satisfied*, though the exact number of answer categories may vary from 7 to 11.
[18] This is probably an important reason why the measure is employed quite frequently by economists and quantitative sociologists in their research.

compensated for fully by adaptation, require time-lagged investigations and therefore panel studies to actually dismiss any measure. While temporal frameworks have to be considered and in particular retrospective satisfaction evaluations pose certain challenges (Easterlin 2002), those can be accounted for through conventional quantitative methods used in survey research. Within the considered limitations life-satisfaction measures actually prove to be sufficiently reliable over time (Frey 2008).

Cognitive evaluations thus become meaningful in several practical ways, finding that different cognitive SWB measures correlate well with each other as well as with external conditions (Frey 2008), but also re-inform theoretical approaches significantly. Veenhoven (1999) finds that the four domains making up personal well-being according to him (livability, life-ability, utility and appreciation of life) can be most appropriately and comprehensively captured by the use of cognitive SWB concepts within the framework he presents. In practice some of the theoretical concerns outlined above can be remedied simply through the large sample size that survey approaches enable. While momentary mood may well influence evaluations for example, its distribution over a large sample can be assumed to be normal and therefore similar amounts of good and bad mood influences should cancel themselves out, thus rendering this problem not as significant in practice as assumed in theory (Schwarz & Strack 1999; Frey 2008).

Of course, certain problems cannot just be solved through numerical practice. Cultural differences in happiness conceptions (Lu & Gilmour 2004; Uchida et al. 2004) are influential and need to be considered in diverse samples. Furthermore a practical problem arises considering the response scales available. Results tend to cluster towards the upper end of the scale, so the boundedness poses a problem (González 2009). Models adjusting for this factor find that actual levels of life-satisfaction differ somewhat from what would be expected because of the upper boundary of the common 10-point scale. An important connected question addresses the issue of how overall life-satisfaction relates to satisfaction with specific domains of life. Simple additive scales have often been employed to investigate this. González (2009) building on the work of Rojas (2006) finds linear, additive scales are not sufficient however. The relationship between overall and

domain satisfaction is not linear, meaning that changes in one may have disproportional effects in the other and that the effect sizes of domains are not equal. Even weighting however does not fully account for differences adequately, as context differences affect the significance of the domains.

While these problems matter, they do not apply to each analysis in the same way. Most criticisms focus on the comparability of absolute measures of life-satisfaction. However, studies may not be interested in estimating absolute levels, but rather employ life-satisfaction at a relational concept in which configural and metric would be more important than scalar equivalence. Question order effects do not matter in that context, in particular when all responses stem from the same survey and the measure therefore becomes comparable between the survey respondents which may make up the entire sample for an analysis. Finally, while there should be some external validity regarding SWB measures, to argue that they should be fully congruent with objective measures of a person's well-being seems rather unreasonable as a requirement. If these measures are meant to capture a distinct dimension of well-being that is supposed to add information to an analysis, explicitly based in subjective evaluations, then a perfect association with existing measures would render them redundant.

2.8.5. Summary

The use of cognitive SWB measures should not be dismissed merely because certain limitations exist, as all measures of well-being have certain restrictions that apply to them. However, it is important to keep in mind the particular issues arising for each of them. In the case of life-satisfaction measures some of those can be accounted for through quantitative large-scale methods. Others require closer attention. What is important to keep in mind is the intended application of the research (Frey 2008). For absolute claims such as levels of happiness or well-being mere cognitive evaluations are popular, but not adequate to encompass a full picture. However, to incorporate a measure of happiness into large-scale analyses adding value to investigations it seems very useful and adequate when taking into consideration the particular concerns applicable in the respective investigation.

Beyond this, cognitive SWB measures and eudaimonic approaches may well be complimentary, in particular when goal orientation and need satisfaction concepts are employed as frameworks defining the internal evaluation contexts of individuals, allowing for objective life circumstances to be incorporated. Where the focus of the investigation rather lies on exploring and understanding individuals' behaviour and composition of and responses to different levels of affect, ESM methods might be more appropriate and conducive. No single one method can probably claim to measure all that is there to happiness – too many concerns exist in each case, theoretically and practically. Which one to use should strongly depend on the aim at hand and then take into account the respective issues as rigorously as possible.

The aim of this project is to explore the relationship between unemployment and subjective well-being in contrast to simplistic utility-based approaches that equate well-being with utility. Therefore the most suitable perspective on SWB is the cognitive domain of happiness and more specifically subjective well-being, as it allows for close engagement with existing analyses perpetuating simplistic models also using life-satisfaction as the variable of interest. The relationship is meant to be tested with regards to its robustness across different national contexts. In order to do so appropriately large sample sizes for each country used are necessary in order to model life circumstances of individuals as relevant control factors in the analysis. Furthermore, in order to provide a substantial amount of variation in country-level characteristics that reflect differences in the socio-economic and cultural context, a sufficient number of countries have to be included in the analysis in order to be able to apply adequate multi-level modelling techniques. Taking these factors into account, cognitive life-satisfaction seems to be the most appropriate measure, as it is operationalisable through surveys and comparable between countries that are relatively similar with regards to their cultural conception of happiness (Lu & Gilmour 2004; Uchida et al. 2004). Furthermore, experience sampling methods would not be prone to allowing such large, representative samples and investigating effects of unemployment as a life-changing event, as they would focus on momentary affective evaluations. The use of eudaimonic indicators would create a somewhat different focus allowing an investigation into how ways of leading one's life may affect the experience of unemployment. This would be an interesting question indeed, but much wider than the more concise focus cognitive

life-satisfaction offers. There is one further advantage of using this subjective measure: It is the one most commonly employed in analyses that contrast economic utility conceptions and aim to provide alternative approaches for evidence bases in policy making. Using life-satisfaction then allows us to build on a set of literature that has been exploring the relationship between this measure and unemployment, but falls short of addressing several very interesting questions that this project aims to engage with. A review of these studies in the following chapter will help to illustrate and clarify which domains have been researched and which require more detailed attention.

3. Exploring the relationship of unemployment and life-satisfaction in different national contexts

3.1. Existing research

3.1.1. The rationale for using happiness to research unemployment

In societies where paid work makes up a vast amount of life time spent, identifies social status and determines what resources individuals can access, it is not surprising that the processes associated with a person's job are related extensively to other domains of life and the evaluations of them. Bouazzaoui & Mullet (2002, 2005) show that already the anticipation of certain work structures affect life-satisfaction greatly. Focusing on couples, they find that commonly people have rather clear expectations of what sort of work-time arrangements between the partners would be the most conducive to a happy life and which ones may be detrimental, in particular when taking into account their idea of optimal family size.

Such anticipations can be understood as motivational forces that influence people's decisions and behaviour. In traditional utility based approaches, the differences in expectation and resulting choices would have been conceptualised as the revealed preferences of economic market interactions, thus not requiring further attention. Such an analysis would be based on a conception of the labour market with workers offering their labour at a certain price and employers having a demand for a certain quantity of workers, with the price of work (equivalent to the income of the workers) as the moderating mechanism that would create the equilibrium between the two. This however is not sufficient, mainly because the anticipations people hold tend to be misleading and contrary to the assumption of perfect information (Frey & Stutzer 2002, pp. 85). Most prominently personal income has been used to illustrate this. While generally there is a positive relationship between income and self-perceived life-satisfaction, it is not only the absolute level which is important, but also the relative income compared to one's reference group that determines satisfaction (Easterlin 1995). The positive effects of income increases on happiness are undercut, by the rise of aspiration levels at the same time (Easterlin 2001). However, individuals tend to underestimate the growth of aspirations and therefore over-evaluate the gain from income. Combined with a skewed evaluation of their

socio-economic situation compared to others (Graham & Pettinato 2000) the revealed preferences or the utility following their decisions and market interactions do not correspond to their anticipated or experienced life-satisfaction. This mismatch in turn has further effects on happiness, usually in a negative direction.

This has several important implications for policy making. The concentration on paid income as sole driving force of incentive structures is misleading (Bosco 2005), particularly when aimed at unemployment policies. While undoubtedly important, other aspects influence the aspirations, orientations and preferences of individuals regarding decisions about work engagement. For example, family considerations (Bouazzaoui & Mullet 2002, 2005) that do not always correspond to particular objective economic indicators, as well as the value of doing work itself (Bosco 2005) affect decisions of individuals. Approaches based on an understanding of choices as merely utility maximising and thus revealed by market outcomes do not reflect all decisive processes that should be considered when aiming at understanding how unemployment may affect people's perceptions and consequentially their decisions.

In addition to the above-mentioned studies, this can be further illustrated by examining another implicit assumption of traditional microeconomic, utility-based models. In those paid work is a necessity to gain a certain income that can be used for consumption – a clear trade-off between work and leisure time exists, where leisure time is what is desired more. This assumption has to be called into question when considering empirical evidence though (Frey & Stutzer 2002, pp. 105). Rises in leisure times in Western societies are not associated with increased levels of life-satisfaction (Di Tella & MacCulloch 2006). Understanding what people desire, what motivates them and what must be taken into account when trying to steer processes within the labour market, requires more than utility-based analyses and requires the analysis of structures and processes that relate to people's evaluations of preferences and their life-satisfaction. It is not sufficient to simply assume that people prefer one choice over another (for example leisure over work).

There is no simple, universal relationship between performing work per se and particular evaluations thereof as always positive or negative. Important differences apply regarding the type of work performed. Aspiration and value orientations vary

significantly for different levels of creativity (Delhey 2010) in the respective work tasks performed for example. Diener & Biswald-Diener (2008) differentiate three modes individuals can take in evaluating their work following either a *job, career or calling orientation*. Even when including socio-economic controls, individuals differ in their evaluations regarding the positive contributions work has for their lives depending on whether they see their labour mainly as a means of earning money, enhancing their career or something more intrinsic with value in itself. The structure within a firm and the framework in which employees work can be designed in ways that are more conducive to well-being and positive approaches to the importance of their work (Salanova et al. 2006).

Differences in context are important. While generally working in itself has positive effects on subjective evaluations of life-satisfaction, Europeans for example derive less gain from it *per se* when compared to workers in the USA (Okulicz-Kozaryn 2010). Different aspects of work appear to be significant with Europeans emphasising the role of work itself, also in relation to leisure time, whereas US-Americans concentrate more strongly on the outcomes of work.[19] Apart from cultural variation, the differences in personal work experiences can have marked effects for individuals as well. Experiences of *flow at work* (Salanova et al. 2006), reflecting peak experiences of high absorption, enjoyment and intrinsic motivation – associated with well-being (Diener & Biswas-Diener 2008) – are helpful for individuals to gain personal and organisational resources, which in turn can be conducive to enhanced orientations associated with *flow at work* experiences.

The studies cited make it apparent that doing paid work has many effects on people beyond the material income that is derived from it.[20] Understanding these effects therefore requires more than using labour market models relying on income as the sole determining factor and should take into account subjective orientations of the people employed or unemployed. Doing work provides an opportunity for several

[19] The results of this study by Okulicz-Kozaryn (2010) have to be treated with some caution, as the SWB measures originate from different questionnaires and thus have to be suspected to be affected by question-order effect differences – particularly important to cognitive SWB measures (Schwarz & Strack 1999).

[20] There is of course a wider range of literature that discusses in detail how different structures of work affect evaluations and well-being. To reflect on this in detail however is beyond the scope of this project.

positive experiences, beyond material gain, which in itself may be a motivating factor to seek employment, rather than simply a positive externality or by-product.

3.1.2. The scarring effects of individual unemployment

Considering the variety of processes experienced by employees at their work place and the important, potentially positive, effects on their perspectives and evaluations, it is not surprising to find that the experience of unemployment has far-reaching consequences for individuals. Contrary to notions of voluntary employment, a large number of studies illustrate that unemployment has significant negative effects for well-being (Frey 2008).

While some endogenous effects (life-satisfaction and other factors leading to some selection biases regarding unemployment) exist, the main causal mechanism has been established from unemployment to decreases in well-being, refuting notions of mere self-selection mechanisms (Winkelmann 2009). The causality has been demonstrated mainly through studies using panel survey techniques allowing for the longitudinal observation of individuals moving in or out of employment (see for example Clark et al. 2001; Green 2011; Kassenböhmer & Haisken-DeNew 2009). The reduction in well-being has been shown to exist for several conceptions of well-being, such as mental distress (Clark & Oswald 1994) or cognitive life-satisfaction (Ouweneel 2002). It is important to note that the reduction goes beyond the effect of the loss in income associated with becoming unemployed (Winkelmann 2009), further emphasising that the value of work for an individual is more than what is reflected by the wage paid. However, as with other satisfaction measures, the extent of the impact may be moderated through comparisons with reference groups (Clark 2003). Becoming unemployed in a region with high levels of unemployment results in less of a decrease in well-being, while the effects of losing the job are more pronounced for workers with higher levels of education (Clark & Oswald 1994; Clark 2003).

Changes in life-satisfaction tend to be of a temporary nature as adaptation processes strongly affect subjective evaluations of well-being (Kahnemann 1999) often with a full return to initial levels before the respective change. This is not the

case for unemployment. While some adaptation occurs over longer periods of unemployment, it is not complete. Even when they become re-employed, people with longer total unemployment histories have lower life-satisfaction than other workers (Clark et al. 2001). This finding holds when controlling for socio-economic factors and reveals that unemployment must be considered a life-event with a scarring effect, resulting in a downward shift of the life-satisfaction baseline (Lucas et al. 2004).

Considering that longer periods of unemployment relate to lower chances of re-employment (Clark et al. 2001) and that repeated experiences of unemployment can only be compensated for decreasingly with re-employment, while some, even when not complete, habituation effects occur (Lucas et al. 2004), it appears imperative to prevent particularly long-term unemployment and repeated short-term employment periods followed by new unemployment in order to maintain a base level of well-being for a person. Grün et al. (2010) show that for most people having any job is better with regards to life-satisfaction than having no job at all, even if the job is below the status of previous employment (within certain limits).

3.1.3. The rationale for aggregate perspectives

Unemployment does not only matter as a characteristic of individuals with regard to well-being. The negative effect of unemployment for an individual is partially moderated by contextual influences. In regions with higher unemployment the effect of personal unemployment on subjective well-being is not as pronounced as in regions where unemployment rates are lower (Clark 2003) highlighting the referential nature of subjective well-being measures again. However, unemployment rates do not only have contextualising effects, but also direct ones. Di Tella et al. (2001) find that when comparing countries, higher unemployment rates are associated with lower levels of life-satisfaction. They find the same relationship for inflation (higher inflation rates being associated with lower levels of life-satisfaction), however, what is important to notice is a consistently higher importance placed on unemployment. Unemployment rises are associated with greater losses in average satisfaction compared to inflation – a trade-off exists where a certain amount of inflation rises compared to a constant unemployment

rate will be preferable regarding a population's life-satisfaction to the contrary relationship where unemployment would be more acceptable than inflation.

Simplistic microeconomic approaches are sceptical about interventions of the state in the proceedings of the labour market (see for example Scheepers et al. 2002). An intervention would be conceived as a distortion of the ideal equilibrium price and therefore either create an over- or under-supply of work, with the former resulting in unemployment and the latter in inflation. Following on from this, the assumption has been postulated that welfare regimes offer benefits as an alternative and distinctive rational choice to employment thus reducing the cost of not working. Accordingly one might expect to find that in more extensive welfare regimes the incentive to seek employment would be lower. Cahuc & Fontaine (2002) illustrate that the intensity of job search efforts does not decrease when states have greater welfare provisions. On the contrary, when designed well, they can incentivise job seekers to use the most efficient channels (pp. 18) and reduce some of the congestion effects of overused social networks in recruitment processes (Fontaine 2003). The monetary value of benefits is not a sufficient replacement for all the positive effects that employment brings in most contexts (as described above).

If it were true that benefits mitigate the loss of life-satisfaction from unemployment and therefore reduce the drive for people to regain employment, then higher benefits should be associated with a reduction in the life-satisfaction gap between the employed and the unemployed. This however, is not the case. While, of course, no generalisation can be made for the behaviour of each individual person, the net effect can be analysed (Di Tella & MacCulloch 2006): Greater benefits provisions do not moderate the effect unemployment has on life-satisfaction (Di Tella et al. 2003 looking at European and American changes between 1975 and 1992). Changes in welfare provisions are not associated with variations in subjective well-being or health for the employed and unemployed (Ouweneel 2002 looking at a wide range of countries cross-sectionally in 1990).

In summary, the understanding that payments of benefits will make people less interested in finding a job, that people become more easily accustomed to unemployment and therefore society will have sub-optimal employment levels and

will be required to spend money unnecessarily on welfare payments, cannot be upheld as such (Frey 2008). People do not follow economic labour market models as rational actors (Di Tella & MacCulloch 2006) trying to reach optimal utility levels driven by adequate monetary incentives or disincentives. The incorporation of life-satisfaction measures allows us to understand more closely what important motivations play a role regarding labour and doing work and how social relations may be beneficial or detrimental in facilitating this, partially depending on the contextual circumstances.

The analyses in this chapter compare how unemployment affects the life-satisfaction of individuals in different national contexts. Considering the evidence presented above, it becomes obvious that the assumption of non-transitory unemployment being voluntary is very problematic. If unemployment were the 'ideal choice' for a person that considered the incentive placed by the offered wage as too low, then they should not have a lower level of life-satisfaction than an employed person with otherwise the same characteristics – at least not in a purely utility-based understanding of labour market processes, as the utility derived for such an unemployed person would be their best possible one. While the studies cited have demonstrated this convincingly, they are lacking in one particular regard. There have been some that showed that contextual factors, such as the unemployment rate or inflation may influence the relationship between unemployment and life-satisfaction. However, these studies have not gone beyond simple economic indicators in contextualising it in different settings. Recalling that the evaluation of work varies across cultural contexts, a proper investigation would incorporate a wider set of indicators. This chapter will therefore present analyses of the unemployment-life-satisfaction relationship in a framework where national-level economic, demographic and cultural factors act as moderators of this relationship. It extends the scope of previous investigations by suggesting which domains appear to have to be taken into consideration when modelling the effects of unemployment on subjective well-being.

3.2. Data and Methods[21]

3.2.1. Data sources and approach

The individual-level data for this analysis was taken from a pooled sample of countries included in the fourth (2000-2004) and fifth (2005-2007) wave of the World Values Survey (WVS 2010). Countries included were from Europe (East and West) as well as Anglo-Saxon societies.[22] A greater number of countries was available in the WVS, however the application of life-satisfaction across a wider array of culturally distinct conceptions of happiness and well-being has been repeatedly shown to be questionable. This has been demonstrated particularly for general comparisons between European/American and Asian perspectives (Lu & Gilmour 2004; Uchida et al. 2004). It is therefore more feasible to rely on societies where the conceptions of life-satisfaction are less heterogeneous. While this still does not warrant perfect equivalence of the concept of life-satisfaction, applicability is more justified than in a larger, more restrictive sample of countries. This particularly holds as it is important to have a reliable number of cases in the analysis in order to be able to investigate country-level effects and in particular cross-level interactions. The approach chosen here allows for the inclusion of 40 countries for which data were available for most of the analysis.[23]

Respondents in the survey were selected only when they could be considered to be part of the potential labour market, meaning that they could potentially be taking up employment if they were unemployed at the time of the survey. Thus, respondents who were retired or in full-time education and persons permanently keeping house were excluded. While sex was controlled for in the analysis, the approach taken here was generally gender-neutral. No conceptual distinctions were made between female and male labour. It is important to highlight this as the analysis distinguished between employed and unemployed individuals, regardless of gender. This is not to say that there are no possible differences between men and women in

[21] Parts of the analyses and discussions presented here are taken from a paper by the author which has been submitted for publication and has been recommended for publication after corrections.

[22] A full list of included countries can be obtained from figure 1 together with life-satisfaction scores for those countries.

[23] A survey question relating to orientations towards the role of work was only available for 38 of these countries (but not for Austria and Bosnia). Analyses incorporating this measure were therefore based on only 38 societies.

the experience of unemployment. But the investigation in this project does not focus on this particular topic.

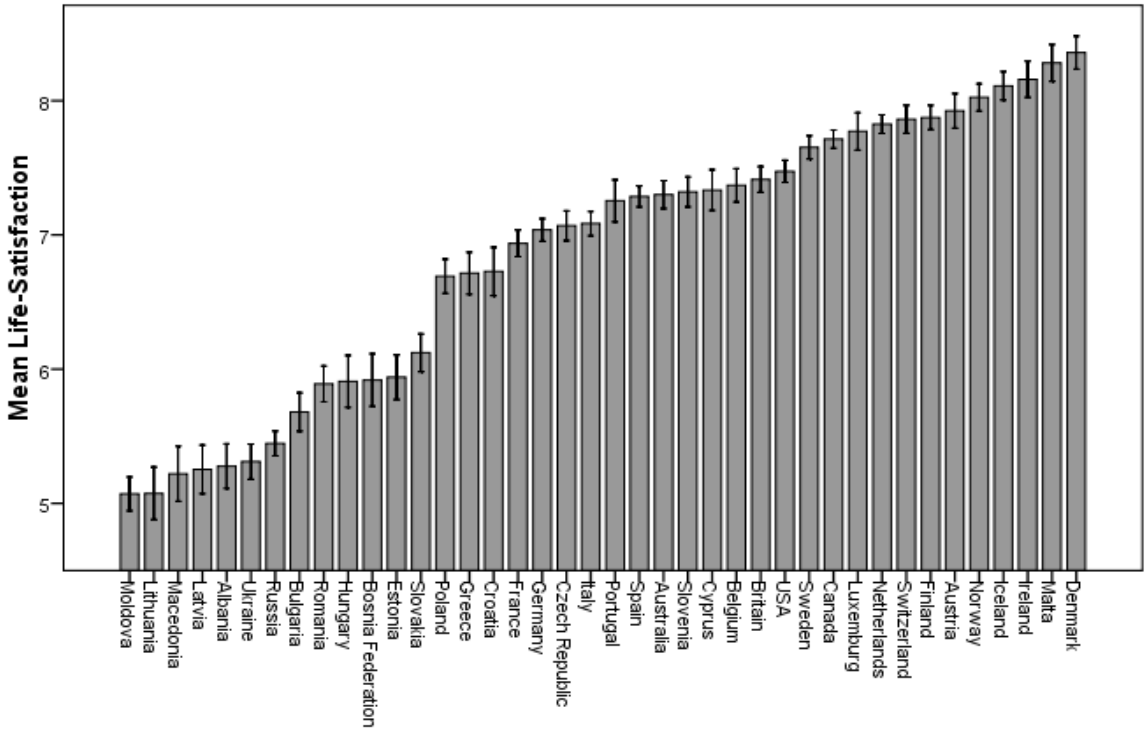


Figure 3.1: Mean life-satisfaction across sample countries (error bars show 2 standard errors)

All analyses have been weighted at the individual level using WVS design weights to enable theoretical inference. The number of missing cases in the data was small for most of the variables, with the exception of income (about 11%). While this amount of missing cases was generally acceptable, it means of course that there were cases excluded from the analysis mainly when respondents did not reply to the personal income question. That would be no problem, if there were no systematic pattern in the missing cases. However it is well known that in particular respondents with high incomes have lower response rates. The results may therefore be somewhat biased with regards to the reflection of the population concerning their income structures. Considering the exploratory nature of this investigation however, the findings can still be understood as meaningful especially since most comparable studies have employed the same approach.

For the analyses hierarchical linear models were applied[24], allowing the individual survey respondents to be nested within the context of their respective country. Aggregate data at the country level was taken either from aggregations based on the WVS data or on official statistics from the World Bank (2011) or the IMF (2011). Using a multi-level approach allows us to investigate whether there is variation in the slope of a particular predictor variable across countries. If there is, it suggests that the effect of this predictor on the dependent is not the same in all aggregate units we are looking at. By adding contextual factors at the country-level and interactions between those and the individual-level predictor, we may be able to explain this variation, thus enhancing our understanding of how the individual-level relationship may be partially dependent on contextual factors.

This approach has two main limitations. First, a cross-sectional analysis does not allow us to consider changes over time and is therefore not sufficient to develop conclusive claims regarding causality. Second, not all contexts that affect the relationship between unemployment and life-satisfaction may be placed at the national level. In particular the moderating effects of unemployment rates seem to occur mainly at a regional level (Pittau et al. 2010). Keeping these limitations in mind there is still great value for an analysis of contextual factors at the national level in a cross-sectional analysis for a number of reasons.

First, panel analyses have shown that the dominant causal link runs from unemployment to life-satisfaction (Clark et al. 2010; Green 2011). Second, the focus of this chapter is not to further deepen the understandings of the exact pathways and mechanisms that underpin this individual-level causal mechanism. Instead it aims to widen the focus of the contextually relevant factors used for investigations on this issue, in particular in contrast to those (mainly cross-sectional) studies cited above that only consider rather crude economic indicators as important societal factors that affect the unemployment and life-satisfaction relationship. To develop this contrast and to show the significance of other contextual measures, a cross-sectional design is appropriate and informative. Furthermore, just because contextual unemployment may be more important at lower levels of aggregation

[24] Where linearity assumptions were not met for a variable, appropriate adjustments (logarithmic transformations) were conducted and are reported in the following section.

does not mean that this holds true for other measures. As Veenhoven (1991) pointed out already in the early stages of investigations into this field, the evaluation of personal subjective well-being depends on a comparison relative to reference groups in a person's surrounding – but it is not all that matters. Apart from personal fixed characteristics, other contextual levels may be impacting as well, though not necessarily with regards to all indicators. A focus on the national level is therefore insightful and relevant in particular with regards to national-level policy making.

Two sets of analyses were conducted: As the emphasis lies on the moderating impact of national-level factors on the unemployment and life-satisfaction relationship, the control variables used were not investigated at extensive length in the final model discussions but aim to account for substantial influences of other individual-level factors that are known to be influencing life-satisfaction. However, to gain a first insight into how these well-established individual-level relationships may also be contingent on contextual factors the exploratory analysis conducted here was first applied to each of the control factors as well and then subsequently to the key variable of interest: unemployment. Doing this should help understand potential restrictions within which the final model estimations should be considered with regards to the contextualised nature of control variable effects. For each of the variables (first the control variables, then unemployment) a set of plausible economic, socio-demographic and cultural variables that may be relevant has been tested with regards to direct effects on life-satisfaction and particularly interaction effects with the unemployment and life-satisfaction relationship. Those variables appearing to show some form of substantial relevance can be found in the discussions below following the section presenting the whole set of indicators and their operationalisation.

3.2.2. Operationalisation of concepts

The dependent variable chosen was cognitive life-satisfaction operationalised in the WVS through the question *'All things considered, how satisfied are you with your life as a whole these days?* Responses were rated on a scale from 1 (completely dissatisfied) to 10 (completely satisfied). The indicator might appear crude at first

sight, but has been demonstrated to be very robust (Lucas 2007; Frey 2008; Martin 2005) if used in analysis comparing relatively homogeneous societies with regards to the understanding of life-satisfaction. Furthermore, it is the indicator most commonly applied in investigations exploring the relationship between unemployment and life-satisfaction, so it seems sensible to also choose it for this analysis that aims to contextualise previous findings. Strictly speaking the variable is at the ordinal level of measurement, however a linear hierarchical model was applied. It has been demonstrated extensively that regression-style analyses, in particular multi-level ones, are very robust for life-satisfaction measures. Results from ordinal and linear specifications tend not to differ substantially (Ferrer-i-Carbonell & Frijters 2004; Frey & Stutzer 2002), even when only a 4-point response scale is applied (Pittau et al. 2010).

At the individual level the key independent variable was a dummy that identified people to either be currently employed or unemployed.[25] This is based on the WVS coding, reflecting a self-classification. While the possibility of some error in this self-evaluation cannot be excluded, the great advantage is that this indicator is not biased by differences in state-specific classifications of unemployment. In order to properly identify the effect of personal unemployment, control variables from the survey were added, reflecting the most important indicators commonly related to life-satisfaction in quantitative analyses (Frey 2008). These include: sex, age, age^2, income, education, marital status and whether respondents had children.

All individual-level variables were always included in the analysis with one at a time being contextualised with the set of aggregate variables from the economic, socio-demographic and cultural groups. When cross-level interaction effects between aggregate predictors and unemployment were applied, the main effects for both variables were still estimated as well. Aggregate indicators with a substantial impact were tested separately and in a full model of all indicators found to be relevant on their own. The exception to this rule was GDP/capita, as differences in material well-being between countries have constantly been found to affect life-satisfaction regardless of context factors, though the relationship often is not linear (Inglehart

[25] Persons on maternity or paternity leave were considered employed.

et al. 2008). The (logarithmised) variable was therefore included in all analyses to avoid the detection of spurious effects from other variables caused by economic development. Additionally, the discussion of the analysis of unemployment is more detailed with regards to the retention and combination of indicators, as the relationship between this variable and life-satisfaction presents the key focus of this investigation. Please refer to table 3.1 below for detailed account of all variables and their operationalisation.

Aggregate indicators were mean values for the years 2000-2005 (where available) in order to accommodate the fact that data collection in the WVS took place over a wide period of time. As the investigation focuses on a comparison of country-specific characteristics (applying a cross-sectional design) that could be considered relatively stable over time, this approach is more appropriate than selecting main effects for each country relating to the year the survey was conducted there. This alternative would place attention on the impact of events and is more suited for a longitudinal study that explores causal patterns in more detail.

Table 3.1: Overview of indicators

	Source	Operationalisation	Mean (s.d.)	Min..Max
INDIVIDUAL				
Life-Satisfaction	WVS*		6.58 (2.23)	1..10
DV Unemployed	WVS*	Self-classified (0-No, 1-Yes)	0.12 (0.33)	n/a
Female	WVS*	Sex of respondent (0-Male, 1-Female)	0.48 (0.50)	n/a
Age	WVS*	In years	39.8 (11.9)	15..98
Age²	WVS*	In years squared	1721 (995)	225..9604
Income	WVS*	Subjective income scales (1..10)	5.43 (2.48)	1..10
DV Higher Degree	WVS*	Holder of a higher education degree (0-No, 1-Yes)	0.28 (0.45)	n/a
DV Married	WVS*	Respondent married (0-No, 1-Yes)	0.58 (0.46)	n/a
DV Children	WVS*	Respondent has children (0-No, 1-Yes)	0.70 (0.46)	n/a
AGGREGATE				
Economic				
LN GDP/capita	IMF*	Gross-domestic product per capita in US$ (PPP), logarithmised (Mean 2000-05)	9.81 (0.73)	7.55..11.05
LN Inflation	IMF*	Inflation rate, logarithmised (Mean 2000-05)	1.20 (0.75)	-0.49..3.26
LN Unemployment rate	IMF*	Unemployment rate, logarithmised (Mean 2000-05)	2.04 (0.58)	0.85..3.51
Inequality	IMF*	Gini Coefficient (Mean 2000-2005)	31.03 (5.02)	23..45
Education expenditure	WB	Education expenditure as percentage of GDP (mean 2000-05)	5.10 (1.18)	2.87..8.37
Public expenditure health	WB	Public health expenditure as percentage of total government expenditure (mean 2000-05)	69.80 (11.69)	39.07..90.03
Industry employment	WB	Workers in industrial sector as percentage of total labour force (mean 2000-05)	26.78 (5.98)	11.22..39.53

Socio-Demographic				
Age-dependency ratio	WB*	'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05)	21.25 (3.63)	12.55..28.35
Female labour force	WB*	Female workers as percentage of total labour force (mean 2000-05)	44.80 (3.74)	30.44..50.43
Tertiary enrolment	WB	Enrolment in tertiary education as percentage of the cohort (mean 2000-05)	53.57 (17.92)	10.91..86.80
LN Population density	IMF	People per km², logarithmised (mean 2000-05)	4.25 (1.29)	0.95..7.12
Rural population	WB	People living in rural (as opposed to urban) areas as percentage of total population (mean 2000-05)	30.84 (13.69)	2.80..56.75
Cultural				
Autonomy	WVS*	Self-evaluated amount of choice and control over one's life (1..10)[26]	6.96 (0.58)	5.94..7.85
Work emphasis	WVS*	Score on an additive scale summarising five statements about emphasising labour (0..20)[27]	12.49 (1.47)	8.98..15.49
Generalised trust	WVS	Proportion agreeing with "Most people can be trusted"	0.305 (0.16)	0.10..0.74
Self-responsibility	WVS	Mean emphasis on people taking responsibility instead of government (1..10)[28]	5.37 (0.96)	3.09..7.03
Traditional family values	WVS	Score on additive scale summarising three items stating support for traditional family values[29] (0..3)	2.10 (0.25)	1.73..2.78
Importance of family	WVS	Proportion saying that "family is very important" in their life	0.874 (0.07)	0.66..0.99
Importance of family	WVS	Proportion agreeing that "family is very important."	2.10 (0.24)	1.73..2.78
Jobs for men	WVS	Proportion agreeing that "when jobs are scarce men should more right to a job than women."	0.233 (0.11)	0.02..0.47
Both parents needed	WVS	Proportion agreeing "a child needs a home with both a father and a mother to grow up happily"	0.839 (0.13)	0.54..0.99
Importance of God	WVS	Mean score "How important is God in your life?" (1- not at all .. 10- very important)	6.329 (1.46)	3.63..9.15
Secular rational values	WVS	Based on Inglehart & Welzel (2005), standardised 0..1	0.375 (0.08)	0.19..0.60

* Variable is used in analysis of unemployment and life-satisfaction relationship

[26] Question wording: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means 'no choice at all' and 10 means 'a great deal of choice' to indicate how much freedom of choice and control you feel you have over the way your life turns out."

[27] Item wordings: 1. "To fully develop your talents, you need to have a job." – 2 "It is humiliating to receive money without working for it." – 3. "People who don't work become lazy." – 4. "Work is a duty toward society." – 5. "Work should always come first, even if it means less free time." (all rated on a 5-point scale from 1, strongly agree to 5, strongly disagree). Ratings were reversed, the scores added and subtracted by 5 (Final scale 0..20). A one-factorial structure is supported by exploratory factor analysis.

[28] Score between 1- "The government should take more responsibility to ensure that everyone is provided for" and 10 – "People should take more responsibility to provide for themselves.

[29] Item wordings: 1. "a child needs a home with both a father and a mother to grow up happily" – 2. "Marriage is an outdated institution" – 3. "If a woman wants to have a child as a single parent but she doesn't want to have a stable relationship with a man, do you approve or disapprove? (1- agree, 2-disagree and 3-disapprove add a point to the score).

The number of aggregate-level indicators in the full models, in particular in the unemployment analysis, may seem somewhat large in comparison to the number of cases at that level. However, the results obtained were robust, with a substantial increase in explained variance for the full models regarding the impact of personal unemployment (see below for more detail) despite the relatively large number of indicators. Also, multi-collinearity between the indicators did not appear to be a great concern, with the highest correlation between any two aggregate variables being around 0.6 and most others substantially lower. Considering that the interactions were all related to the same individual-level variable (unemployment) and the limited amount of correlation between the predictors, 38-40 aggregate units seem to be sufficient to justify the models presented here (Hox 2010).

Finally two robustness checks were conducted. First, as we can see from figure 3.1, Central- and Eastern-European countries tend to have lower levels of life-satisfaction than Western-European and Anglo-Saxon ones – as demonstrated by previous studies (see for example Inglehart et al. 2008). Therefore a direct and interaction effect for a dummy variable coding for Central- and Eastern European countries was included to see whether results were altered. A second robustness check relates to the role of welfare regimes. The effects of unemployment on well-being could differ depending on the extent and type of welfare state provisions in a country. Ideally, this would have been one of the aggregate factors included in the analysis. However, indicators that were comparable across the set of countries selected did not provide an appropriate measure of this, but only of total expenditure volumes of which this expenditure would have been a part.[30] A measure specifically addressing the extent of unemployment compensation would have been required but was not available in a comparable manner for all of the countries presented here. In order to account for some differences in welfare regimes, a robustness check was conducted including dummy variables differentiating six welfare regimes. Extending the well-known Esping-Andersen framework ('Conservative-corporatist type', 'social-democratic type' and 'liberal

[30] Including total government expenditure, government revenue per capita, subsidies and transfer as well as tax revenue and social contributions (in total or as percentage of GDP) did not alter the results of the analyses presented here. The indicators themselves were not significant or substantial.

type'), Fenger (2007) identifies three additional regimes in Central- and Eastern Europe, distinguishing between 'former USSR type,' 'post-communist European type' and 'developing welfare state type'. Adding a dummy variable for each of these types compared to the reference group (set to conservative-corporatist), allows us to at least identify whether there may be some variance that is unexplained by the model indicators but due to differences between countries that could reflect differences in their welfare state arrangements. It also enables us to see whether the effects found for the predictors included remain robust. At the same time it should be noted that any findings from this robustness check can only be considered preliminary and should be followed up by investigations that employ country samples which can make use of comparable unemployment compensation indicators.

3.3. Results for contextualised control variables

3.3.1. Contextualising the effects of sex on life-satisfaction

The direct effect of sex on life-satisfaction in all models computed was statistically significant and positive, implying that women tend to show higher levels of life-satisfaction than men after controlling for the other factors. However, the effect was small in substance: Women, on average, scored 0.083 points higher on the 10-point life-satisfaction scale than men, after controls (the standardised coefficient was the second smallest of the individual-level variables with just 0.019). So while the difference was statistically significant, it was of very small magnitude and does not allow for any major conclusions to be drawn, considering that there are also other factors explaining life-satisfaction, not included in this analysis.

This limited variation between the sexes with regards to their life-satisfaction also appears to be rather consistent across the countries sampled seeing the small amount of variance in the random slope of the sex-dummy (statistically significant at the 0.05-level). Few country-level variables have been found to influence the relationship at the individual level. While a direct, positive effect of LN GDP/capita could be observed, there was no substantial cross-level interaction effect. So the effect was not more or less pronounced for countries with higher or lower economic development within the sample. The opposite holds true for a variable reflecting cultural differences in the opinion about the relevance of a traditional family composition. While there was no substantial main effect, for countries in which there was a higher emphasis on a traditional model (both parents are needed for a child to grow up happily), men tended to show higher levels of life-satisfaction – partially offsetting the small positive direct effect of being female. The effect was robustly substantial across the models estimated here (-0.546 - -0.704).

Adding the unemployment rate of a country (logarithmised) to the model (2) showed an opposite moderation effect. In countries with higher unemployment, the positive effect of being female on life-satisfaction was somewhat enhanced (0.090 – 0.105). In addition we find a direct effect, showing that in countries with higher unemployment rates respondents showed substantially lower levels of life-satisfaction (-0.553 - -0.560). While not showing a direct effect, higher levels of

Table 3.2: Contextualising the effects of sex on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4	
Intercept	6.398 (0.08)***		6.407 (0.07)***		6.397 (0.07)***		6.406 (0.07)***	
Societal Level								
LN GDP/cap	1.193 (0.19)***	0.391	1.004 (0.13)***	0.617	1.213 (0.14)***	0.397	0.989 (0.14)***	0.608
Both parents needed	-0.815 (0.75)	-0.047	-0.164 (0.73)	-0.009	-0.753 (0.74)	-0.043	-0.118 (0.74)	-0.007
LN Unemployment rate			-0.553 (0.15)***	-0.156			-0.560 (0.16)***	-0.158
Public expenditure health					-0.003 (0.01)	-0.016	0.001 (0.01)	0.005
Fixed Individual								
Age	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411
Age²	0.167 (0.00)***	0.446	0.166 (0.00)***	0.446	0.167 (0.00)***	0.446	0.167 (0.00)***	0.446
Income	0.208 (0.02)***	0.186	0.208 (0.02)***	0.186	0.208 (0.02)***	0.186	0.207 (0.02)***	0.186
DV Higher Degree	0.001 (0.04)***	0.042	0.001 (0.04)***	0.042	0.001 (0.04)***	0.042	0.001 (0.04)***	0.042
DV Married	0.464 (0.04)***	0.102	0.463 (0.04)***	0.102	0.464 (0.04)***	0.102	0.464 (0.04)***	0.102
DV Children	-0.011 (0.04)	-0.002	-0.011 (0.04)	-0.002	-0.012 (0.04)	-0.002	-0.012 (0.04)	-0.002
Random Individual								
Female	0.083 (0.02)***	0.019	0.078 (0.02)***	0.017	0.084 (0.02)***	0.019	0.079 (0.02)***	0.018
X LN GDP/cap	-0.017 (0.03)		0.010 (0.03)		-0.052 (0.03)		-0.025 (0.03)	
X Both Parents needed	-0.546 (0.17)**		-0.679 (0.17)***		-0.596 (0.18)**		-0.704 (0.19)***	
X LN Unemployment rate			0.105 (0.04)*				0.090 (0.04)*	
X Public expenditure health					0.005 (0.00)**		0.004 (0.00)**	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.054	3.985	0.054	3.985	0.054	3.985	0.054	3.984
Between Societies	0.800	0.237	0.849	0.179	0.791	0.247	0.841	0.188
Female	0.475	0.004	0.600	0.003	0.684	0.003	0.748	0.002

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.
N: 43614 individuals in 40 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.
Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Both parents needed: Proportion agreeing "a child needs a home with both a father and a mother to grow up happily"; LN Unemployment rate: Unemployment Rate (mean 2000-2005), logarithmised (IMF); Public Health Expenditure: Public health expenditure as percentage of total government expenditure (mean 2000-05)

public expenditure on health (model 3) also showed a positive moderation effect (0.004 – 0.005), reflecting somewhat increased levels of life-satisfaction for women. In both cases the effects remained robust in the full model (4).

Considering the high amount of explained variance in the random slope of the sex-dummy in the final model (4) with nearly 75% and the low amount of variance in the slope as well as the rather small substantial size of the direct effect of being female, the key findings from this analysis were not the particular cross-level interactions. Rather, this analysis shows that the small difference between men and women with regards to life-satisfaction in this sample was affected further by contextual effects. The effect may have been somewhat enhanced by economic factors, such us unemployment rates and public health expenditure, where higher levels in both cases slightly furthered the positive effect for women. At the same time cultural differences could shift the balance in the opposite direction, with countries emphasising traditional family set ups with two parents as the ideal showing a shift in the life-satisfaction levels to men. However, all these effects were moderate, and it is interesting to see the range of factors that did not have any effect on this relationship. In conclusion we can summarise that sex does not seem to be a very substantial factor in affecting life-satisfaction when controlling for other variables. While generally there was a small positive effect for women, this may have been cancelled in some countries or enhanced slightly in others depending on country-level factors. However, the variation remained small, so no systematic pronounced difference between the sexes could be claimed for individuals in this sample of countries.

3.3.2. Contextualising the effects of age on life-satisfaction

For age we find the commonly observed quadratic relationship to be significant showing a decrease of life-satisfaction over the first half of the life course followed by an increase later on again (Frey 2008). This was supplemented by the small negative effect of age in addition, both being robust across the models (see table 3.2). In the first model the effect of age was contextualised by the age-dependency ratio in addition to LN GDP/cap in order to contextualise the personal age in the age

Table 3.3: Contextualising the effects of age on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4	
Intercept	6.405 (0.09)***		6.404 (0.09)***		6.405 (0.09)***		6.404 (0.09)***	
Societal Level								
LN GDP/cap	1.429 (0.15)***	0.479	1.441 (0.17)***	0.864	1.443 (0.19)***	0.484	1.189 (0.18)***	0.713
Age-dependency ratio	-0.043 (0.02)*	-0.070	-0.039 (0.02)*	-0.063	-0.041 (0.02)*	-0.066	-0.046 (0.02)*	-0.075
Secular-rational values			-0.474 (1.13)	-0.018				
Traditional family values					0.113 (0.50)	0.012		
Self-responsibility							0.292 (0.10)**	0.125
Fixed Individual								
Female	0.089 (0.02)***	0.020	0.089 (0.02)***	0.020	0.090 (0.02)***	0.020	0.089 (0.02)***	0.020
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.165 (0.02)***	0.183	0.165 (0.02)***	0.183	0.165 (0.02)***	0.183	0.165 (0.02)***	0.183
DV Higher Degree	0.210 (0.04)***	0.042	0.210 (0.04)***	0.042	0.210 (0.04)***	0.042	0.210 (0.04)***	0.042
DV Married	0.435 (0.04)***	0.096	0.435 (0.04)***	0.096	0.435 (0.04)***	0.096	0.436 (0.04)***	0.096
DV Children	-0.011 (0.04)	-0.002	-0.011 (0.04)	-0.002	-0.012 (0.04)	-0.002	-0.011 (0.04)	-0.002
Random Individual								
Age	-0.072 (0.00)***	-0.379	-0.072 (0.00)***	-0.379	-0.071 (0.00)***	-0.379	-0.072 (0.00)***	-0.379
X LN GDP/cap	0.013 (0.00)***		0.012 (0.00)***		0.014 (0.00)***		0.010 (0.00)***	
X Age-dependency ratio	-0.001 (0.00)**		-0.001 (0.00)**		-0.001 (0.00)*		-0.001 (0.00)**	
X Secular-rational values			0.017 (0.02)					
X Traditional family values					0.015 (0.00)**			
X Self-responsibility							0.004 (0.00)*	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.063	3.952	0.063	3.952	0.063	3.952	0.062	3.952
Between Societies	0.781	0.259	0.776	0.265	0.775	0.266	0.807	0.228
Age	0.994	0.000	0.994	0.000	0.995	0.000	0.995	0.000

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.
N: 43614 individuals in 40 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.
Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Age-dependency ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05); Secular-rational values: Based on Inglehart & Welzel (2005), standardised 0..1; Traditional family values: Score on additive scale summarising three items stating support for traditional family values (0..3); Self-responsibility: Mean emphasis on people taking responsibility instead of government (1..10); Mean score "How important is God in your life?" (1- not at all .. 10- very important)

Table 3.4: Contextualising the effects of income on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4		5	
Intercept	6.401 (0.08)***		6.398 (0.08)***		6.400 (0.08)***		6.400 (0.08)***		6.401 (0.079)***	
Societal Level										
LN GDP/cap	1.240 (0.14)***	0.416	1.119 (0.19)***	0.671	1.055 (0.16)***	0.354	1.021 (0.16)***	0.612	1.028 (0.16)***	0.345
Education expenditure	0.183 (0.06)**	0.097			0.162 (0.05)**	0.086	0.133 (0.07)$^{+}$	0.071	0.117 (0.06)	0.062
Self-responsibility			0.278 (0.11)*	0.119	0.235 (0.10)*	0.101	0.100 (0.10)*	0.043	0.195 (0.09)*	0.084
Generalised Trust							0.477 (0.51)	0.034	0.344 (0.05)	0.024
Inequality									-0.028 (0.01)*	-0.061
Fixed Individual										
Female	0.077 (0.02)***	0.017	0.077 (0.02)***	0.017	0.077 (0.02)***	0.017	0.077 (0.02)***	0.017	0.077 (0.02)***	0.017
Age	-0.071 (0.01)***	-0.379	-0.072 (0.01)***	-0.385	-0.071 (0.01)***	-0.379	-0.071 (0.01)***	-0.379	-0.071 (0.01)***	-0.379
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
DV Higher Degree	0.210 (0.04)***	0.042	0.211 (0.04)***	0.043	0.210 (0.04)***	0.042	0.210 (0.04)***	0.042	0.210 (0.04)***	0.042
DV Married	0.481 (0.03)***	0.106	0.482 (0.03)***	0.106	0.482 (0.03)***	0.106	0.482 (0.03)***	0.106	0.482 (0.03)***	0.106
DV Children	-0.010 (0.03)	-0.002	-0.008 (0.03)	-0.002	-0.009 (0.03)	-0.002	-0.009 (0.03)	-0.002	-0.010 (0.03)	-0.002
Random Individual										
Income	0.188 (0.01)***	0.209	0.188 (0.01)***	0.209	0.188 (0.01)***	0.186	0.188 (0.01)***	0.186	0.188 (14.2)***	0.186
X LN GDP/cap	-0.176 (0.02)***		-0.123 (0.02)***		-0.135 (0.02)***		-0.124 (0.02)***		-0.125 (-5.39)***	
X Education expenditure	0.024 (0.01)*				0.029 (0.01)**		0.038 (0.01)***		0.039 (2.93)***	
X Self-responsibility			-0.045 (0.02)*		-0.053 (0.02)**		-0.051 (0.02)**		-0.048 (-2.46)**	
X Generalised Trust							-0.143 (0.07)*		-0.132 (-2.92)$^{+}$	
X Inequality									-0.002 (-0.31)	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.074	3.902	0.074	3.902	0.065	3.902	0.065	3.902	0.065	3.902
Between Societies	0.805	0.231	0.797	0.240	0.828	0.214	0.829	0.217	0.835	0.204
Income	0.690	0.006	0.694	0.006	0.674	0.005	0.703	0.005	0.692	0.005

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 43614 individuals in 40 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.
Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Education expenditure: Education expenditure as percentage of GDP (mean 2000-05); Self-responsibility: Mean emphasis on people taking responsibility instead of government (1..10); Generalised trust: Proportion agreeing with "Most people can be trusted"; Inequality: Gini Coefficient (Mean 2000-2005)

structure of the respective countries. The most striking result here is that the variance in the random slope of age was very limited (though statistically significant at the 0.001-level) and therefore it is not surprising that nearly all of this variance was explained (99%). A full model combining all the predictors would therefore make very little sense. This means that there actually was not very much variation between societies with regards to how age affected life-satisfaction specifically. In models 2-4 where one additional indicator was added at a time we do find some cross-level interaction effects that are interesting to see – however, they were small in magnitude and did not add additional information to the explained variance. While generally there were no issues of multi-collinearity between the aggregate indicators included, with such small variation in the random slope of age, it is not surprising that very few indicators were sufficient to explain a lot of variation. The key finding is the relative stability of the effect across the countries in the sample. The significant variation could be explained well through a few different combinations of indicators. In countries with higher levels of LN GDP/cap there was a small positive interaction effect with age (offsetting the negative direct effect of being older partially). On the contrary, in societies with a greater proportion of old people (higher age-dependency ratio) the negative effect of personal age on life-satisfaction was reinforced. Secular-rational values (model 2), traditional family values (3) and self-responsibility (4) all had the same effect when added to the model: In societies where these were higher, there was a positive interaction effect with personal age, meaning that the negative direct effect was partially mitigated.
However, these interaction effects are not additive, with the very limited amount of variance, but should only be treated as illustrations of how the existing variation in how age affects life-satisfaction can be explained easily by contextual factors. Keeping in mind the U-shaped effect of age, this contextualising analysis essentially explores how the 'U' would be shifted up or down in different contexts – the limited variation therefore does seem plausible.

3.3.3. Contextualising the effects of income on life-satisfaction

The positive, robust effect of personal income on life-satisfaction (0.188 unstandardised, 0.186 – 0.209 standardised) is in accordance with the literature finding this relationship consistently. There was some variation in the random slope

of income however and while it was not large, the models here (see table 3.4) explained around 70% of the variation – so it seems warranted to take a look at the cross-level interactions (considering that correlations between the aggregate predictors were rather low). Not surprisingly, the effect of personal income was contextualised substantially by national level wealth: For higher levels of LN GDP/cap, higher personal income was associated with a reduction in life-satisfaction. The effect was reduced somewhat when controls were introduced, however it remained robustly greater in magnitude than -0.12. In contrast this means that the positive effect of personal income was partially reduced in more wealthy countries, but more pronounced in poorer countries – reflective of literature suggesting that, while a positive income effect always occurs, the importance of personal income for life-satisfaction is less pronounced in richer societies. An interaction in the opposite direction could be observed for education expenditure. Where relative education expenditure was greater, the positive effect of income was enhanced, the magnitude of the effect however was limited. Societies in which self-responsibility was emphasised in contrast to reliance on government, showed a slight reduction of the positive income effect.

Both effects were robust when controlling for generalised trust and inequality. While the effect of generalised trust was similar to that of self-responsibility (in countries with higher generalised trust, the positive effect of income was partially mitigated), there was no interaction effect with income inequality. The distribution of income therefore did not seem to affect how important personal income was for life-satisfaction. Cultural differences, such as generalised trust and the emphasis of self-reliance however both did. Having said this, it is important to recall the limited variation in the random slope of income. While there was about 30% of variance left to explain, the indicators added after the first model did not add much additional explanation. So while it is interesting to reflect on them, the most decisive factor seemed to be LN GDP/cap. Cultural factors may be relevant for the role of personal income on life-satisfaction, but it seems that the main reference framework was established by the economic situation in a country for this indicator and the countries included in this sample.

Table 3.5: Contextualising the effects of education on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4		5	
Intercept	6.407 (0.09)***		6.404 (0.08)***		6.407 (0.09)***		6.404 (0.08)***		6.409 (0.08)***	
Societal Level										
LN GDP/cap	1.194 (0.21)***	0.391	0.992 (0.17)***	0.609	1.436 (0.15)***	0.470	0.944 (0.18)***	0.580	0.845 (0.18)***	0.277
Self-responsibility	0.292 (0.11)*	0.076					0.114 (0.08)	0.030	0.158 (0.07)*	0.041
Autonomy			0.738 (0.17)***	1.661			0.660 (0.18)***	1.486	0.662 (0.17)***	1.490
Industry employment					-0.023 (0.01)	-0.039	-0.005 (0.01)	-0.008	-0.001 (0.01)	-0.002
Female employment									-0.046 (0.02)**	-0.075
Fixed Individual										
Female	0.082 (0.02)***	0.018	0.082 (0.02)***	0.018	0.082 (0.02)***	0.018	0.082 (0.02)***	0.018	0.081 (0.02)***	0.018
Age	-0.076 (0.01)***	-0.406	-0.076 (0.01)***	-0.406	-0.077 (0.01)***	-0.411	-0.076 (0.01)***	-0.406	-0.077 (0.01)***	-0.411
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.167 (0.02)***	0.186	0.167 (0.02)***	0.186	0.167 (0.02)***	0.186	0.167 (0.02)***	0.186	0.167 (0.02)***	0.186
DV Married	0.464 (0.04)***	0.102	0.464 (0.04)***	0.102	0.464 (0.04)***	0.102	0.464 (0.04)***	0.102	0.463 (0.04)***	0.102
DV Children	-0.012 (0.04)	-0.002	-0.012 (0.04)	-0.002	-0.012 (0.04)	-0.002	-0.012 (0.04)	-0.002	-0.012 (0.04)	-0.002
Random Individual										
DV Higher Degree	0.218 (0.04)***	0.044	0.218 (0.04)***	0.044	0.226 (0.04)***	0.046	0.224 (0.04)***	0.045	0.215 (0.04)***	0.043
X LN GDP/cap	-0.291 (0.08)***		-0.260 (0.08)**		-0.372 (0.05)***		-0.268 (0.07)***		-0.191 (0.07)*	
X Self-responsibility	-0.102 (0.04)*						-0.040 (0.04)		-0.070 (0.04)$^{+}$	
X Autonomy			-0.191 (0.08)*				-0.120 (0.08)$^{+}$		-0.134 (0.06)*	
X Industry employment					0.015 (0.00)**		0.012 (0.00)*		0.013 (0.00)**	
X Female employment									0.031 (0.01)**	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.058	3.971	0.058	3.971	0.058	3.971	0.058	3.971	0.058	3.971
Between Societies	0.777	0.264	0.845	0.220	0.763	0.280	0.842	0.186	0.862	0.163
DV Higher Degree	0.752	0.024	0.782	0.018	0.800	0.020	0.827	0.017	0.871	0.013

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 43614 individuals in 40 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.
Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Self-responsibility: Mean emphasis on people taking responsibility instead of government (1..10); Autonomy: Self-evaluated amount of choice and control over one's life (1..10); Industry employment: Workers in industrial sector as percentage of total labour force (mean 2000-05); Female employment: Female workers as percentage of total labour force (mean 2000-05)

3.3.4. Contextualising the effects of education on life-satisfaction

People with a higher education degree were substantially more satisfied with their lives than people without (about 0.22 points) according to the models computed here (see table 3.5). However, there was some variation in the random slope of the effect that could be explained by a set of country-level indicators. In addition to LN GDP/cap cultural differences seemed to matter in determining the role of education for life-satisfaction and the composition of the labour force proved to be influential as well. Full models were computed, as each additional variable included in the models increased the amount of variance explained, multicollinearity was moderate and variation in the random slope remained.

First, we find higher levels of material wealth in a country to be associated with a negative cross-level interaction effect for all countries. In richer countries the positive direct effect of higher education was substantially mitigated. After adding controls, the effect was reduced in magnitude but remained substantial and significant even in the final model (-0.191). This did not hold for self-responsibility. While it seems that a greater emphasis on self-reliance would similarly be associated with a reduction in the positive effect of education, the effect was rendered less substantial and statistically insignificant after introducing more contextual factors. A different cultural factor, autonomy, remained more robust.

While the effect size was reduced as well, it remained significant and substantial: When countries showed higher levels of autonomy perceptions, there was a negative interaction effect with education on life-satisfaction (-0.134 in model 5). The introduction of factors reflecting the composition of the labour force was very informative: A positive cross-level interaction effect could be observed in both cases. For countries in which a larger proportion of the work force worked in the secondary (industrial) sector, the positive effect of education was enhanced. Similarly countries in which the proportion of women in the labour force was greater showed a larger positive effect of education on life-satisfaction.

Table 3.6: Contextualising the effects of being married on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4		5	
Intercept	6.403 (0.08)***		6.401 (77.2)***		6.399 (0.08)***		6.397 (0.08)***		6.397 (0.08)***	
Societal Level										
LN GDP/cap	1.238 (0.15)***	0.405	1.295 (0.19)***	0.796	1.101 (0.19)***	0.360	1.181 (0.20)***	0.725	1.239 (0.19)***	0.761
Importance of family	2.300 (0.88)*	0.598			2.680 (0.91)**	0.697	2.779 (0.98)**	0.723	2.165 (1.08)*	0.563
Traditional family values			0.019 (0.48)	0.043	-0.329 (0.46)	-0.741	-0.319 (0.42)	-0.718	-0.320 (0.42)	-0.720
Secular-rational values							0.242 (0.88)	0.406	0.459 (0.90)	0.770
Age-dependency ratio									-0.030 (0.02)	-0.049
Fixed Individual										
Female	0.080 (0.02)***	0.018	0.080 (0.02)***	0.018	0.080 (0.02)***	0.018	0.080 (0.02)***	0.018	0.080 (0.02)***	0.018
Age	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411	-0.077 (0.01)***	-0.411
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.165 (0.02)***	0.183	0.166 (0.02)***	0.185	0.166 (0.02)***	0.185	0.166 (0.02)***	0.185	0.166 (0.02)***	0.185
DV Higher Degree	0.211 (0.04)***	0.043	0.212 (0.04)***	0.043	0.212 (0.04)***	0.043	0.212 (0.04)***	0.043	0.212 (0.04)***	0.043
DV Children	-0.012 (0.04)	-0.002	-0.015 (0.04)	-0.003	-0.014 (0.04)	-0.003	-0.014 (0.04)	-0.003	-0.014 (0.04)	-0.003
Random Individual										
DV Married	0.463 (0.04)***	0.102	0.473 (0.04)***	0.104	0.470 (0.04)***	0.103	0.471 (0.04)***	0.103	0.471 (0.04)***	0.103
X LN GDP/cap	0.081 (0.04)$^{+}$		0.160 (0.04)***		0.135 (0.05)*		0.159 (0.05)**		0.114 (0.05)*	
X Importance of family	1.002 (0.47)*				0.639 (0.50)		0.409 (0.50)		0.279 (0.44)*	
X Traditional family values			0.396 (0.01)**		0.315 (0.13)*		0.282 (0.13)*		0.885 (0.11)*	
X Secular-rational values							-0.626 (0.25)*		-0.809 (0.23)**	
X Age-dependency ratio									0.023 (0.01)**	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.055	3.982	0.055	3.982	0.055	3.982	0.055	3.982	0.055	3.982
Between Societies	0.812	0.222	0.791	0.248	0.812	0.223	0.808	0.227	0.810	0.225
DV Married	0.366	0.018	0.440	0.016	0.481	0.015	0.524	0.014	0.672	0.010

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 43614 individuals in 40 societies

Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.

Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Importance of family: Proportion saying that "family is very important" in their life; Traditional family values: Score on additive scale summarising three items stating support for traditional family values (0..3); Secular-rational values: Based on Inglehart & Welzel (2005), standardised 0..1; Age-dependency ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05)

The overall positive direct effect of education seems to be relatively dependent on a number of relevant context variables. This means that different samples of countries may produce rather different results for the effect of education on life-satisfaction. The effect seems to be more pronounced in less affluent societies where there was less of an understanding of persons being mainly in control of their lives themselves (autonomous). At the same time countries where a larger proportion of the work force was female and countries with a greater proportion employed in industry showed a greater extent of the positive effect of education on life-satisfaction. The effect of education on life-satisfaction therefore seems to be dependent on economic, demographic and cultural context factors.

3.3.5. Contextualising the effects of being married on life-satisfaction

It is highly plausible that the effect of being married on subjective life-satisfaction would depend on cultural factors, with regards to the role of families. It is interesting to find that economic development showed a cross-level interaction effect as well (see table 3.6). Referring to the full model (5) – which is meaningful considering the increase in explained variance of the random slope with each modelling step (67% in the final model) – there was a positive cross-level interaction effect between Ln GDP/cap and being married, after controlling for cultural differences. In wealthier countries of this sample, the positive effect of marriage was enhanced further. As expected though, cultural factors played a very important role as well. A greater emphasis of traditional family values was substantially associated with the positive effect of marriage being even more extensive. The importance of family[31] did not show as robust a relationship. While it was always positive and substantial, it did not appear to be statistically significant in models 3 and 4 and should therefore be treated with some caution. In line with these findings, we find that in societies where secular-rational values were more pronounced there was a reduction in the positive effect of being married, partially offsetting it. Generally we see that the positive effect of being married was robust, but dependent on cultural contexts: The positive effect was more pronounced in

[31] It is worth noting that the correlation between the two variables is only about 0.3, meaning that while there is some relation, the inclusion of both does not violate multi-collinearity assumptions.

Table 3.7: Contextualising the effects of having children on life-satisfaction

Dep.: Life-Satisfaction	1		2		3		4		5	
Intercept	6.427 (0.08)***		6.429 (0.07)***		6.426 (0.08)***		6.425 (0.07)***		6.424 (0.07)***	
Societal Level										
LN GDP/cap	1.123 (0.15)***	0.376	1.101 (0.12)***	0.660	1.050 (0.15)***	0.352	0.890 (0.15)***	0.534	0.930 (0.17)***	0.558
Traditional family values	-0.048 (0.46)	-0.005		0.000	-0.295 (0.45)	-0.033	-0.183 (0.41)	-0.020	-0.274 (0.35)	-0.030
Importance of family			1.500 (0.87)$^{+}$	0.048	1.864 (0.86)*	0.060	1.878 (0.78)*	0.061	1.841 (0.81)*	0.060
Self-responsibility							0.209 (0.09)*	0.090	0.216 (0.09)*	0.093
Jobs for men									0.525 (0.89)	0.026
Fixed Individual										
Female	0.082 (0.02)***	0.018	0.082 (0.02)***	0.018	0.082 (0.02)***	0.018	0.083 (0.02)***	0.019	0.083 (0.02)***	0.019
Age	-0.074 (0.01)***	-0.395	-0.074 (0.01)***	-0.395	-0.074 (0.01)***	-0.395	-0.074 (0.01)***	-0.395	-0.074 (0.01)***	-0.395
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.164 (0.02)***	0.182	0.164 (0.02)***	0.182	0.164 (0.02)***	0.182	0.164 (0.02)***	0.182	0.163 (0.02)***	0.181
DV Higher Degree	0.213 (0.04)***	0.043	0.213 (0.04)***	0.043	0.213 (0.04)***	0.043	0.212 (0.04)***	0.043	0.211 (0.04)***	0.043
DV Married	0.470 (0.04)***	0.103	0.471 (0.04)***	0.103	0.470 (0.04)***	0.103	0.471 (0.04)***	0.103	0.472 (0.04)***	0.104
Random Individual										
DV Children	-0.039 (0.05)	-0.008	-0.047 (0.05)	-0.010	-0.042 (0.05)	-0.009	-0.042 (0.05)	-0.009	-0.042 (0.05)	-0.009
X LN GDP/cap	0.363 (0.09)***		0.264 (0.07)***		0.306 (0.09)***		0.213 (0.08)*		0.091 (0.08)	
X Traditional family values	0.430 (0.14)**				0.242 (0.14)$^{+}$		0.306 (0.14)*		0.594 (0.17)***	
X Importance of family			1.792 (0.49)***		1.499 (0.55)**		1.478 (0.47)**		1.654 (0.41)***	
X Self-responsibility							0.124 (0.05)*		0.119 (0.05)*	
X Jobs for men									-1.535 (0.42)***	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within Societies	0.058	3.968	0.058	3.970	0.058	3.968	0.058	3.970	0.058	3.970
Between Societies	0.842	0.175	0.852	0.187	0.852	0.175	0.864	0.161	0.862	0.163
DV Children	0.545	0.036	0.615	0.044	0.621	0.036	0.674	0.031	0.779	0.021

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 43614 individuals in 40 societies

Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.

Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; Traditional family values: Score on additive scale summarising three items stating support for traditional family values (0..3); Importance of family: Proportion saying that "family is very important" in their life; Self-responsibility: Mean emphasis on people taking responsibility instead of government (1..10); Jobs for men: Proportion agreeing that "when jobs are scarce men should more right to a job than women."

more traditionally oriented countries – showing a strong conformity mechanism in explaining the relationship between marriage and life-satisfaction. This finding fits in with similar research on conformity effects for value orientations (Li & Bond 2010) and religiosity (Eichhorn 2011). Finally, we also find that the positive marriage effect was more prevalent in older-age societies – which of course makes sense considering the importance of traditional orientations.

3.3.6. Contextualising the effects of having children on life-satisfaction

The variable distinguishing respondents having children from those who did not have any was the only individual-level variable that did not show a direct effect in any of the models (see table 3.7). This does not mean that children have no effect on life-satisfaction at all (Frey 2008). Studies have shown that an initial heightened happiness after the birth of a child is followed by a substantial decrease for an extended period until the children reach their late teen years, when life-satisfaction reaches a level above the original one. This of course could not be reflected here in a simple indicator. It was kept in the analysis however without further differentiation, as its primary function is to act as a control variable later for the unemployment analyses, but the focus is not on the in-depth exploration of the individual-level effect of having children. Instead it is interesting to see here whether there might be country-level factors for which having children generally may be relevant with regards to life-satisfaction. This is indeed the case. There was some variation in the random slope of having children (statistically significant at the 0.01-level) that could be explained by aggregate factors.

For countries with higher levels of economic affluence than others in this sample for example, having children was associated with greater levels of life-satisfaction. The effect however was reduced and rendered insignificant in the final full model (5), suggesting that the contextualising effect of economic levels may be captured by the cultural factors included in the model. It makes sense to look at the final model, as the explained variance in the random slope increases with each further addition, up to about 78% in the final model. Four variables, measuring differences in cultural orientations in the countries, were more robustly contextualising the effect of having children. Not surprisingly, a greater emphasis on traditional family values as well as

a greater importance placed on families showed positive interaction effects (0.594 and 1.654 respectively), meaning that in countries where a strong traditional orientation towards the family and its composition could be observed, having children had a positive effect on life-satisfaction. In this regard it is somewhat counterintuitive to find the opposite effect for a gender-role question. Where there was more agreement that men should be given jobs in times of economic crisis, having children was substantially associated with lower levels of life-satisfaction (-1.535) – a finding that may warrant further examination.

In summary we can say that an analysis of the effect of having children is of limited use when not being able to take into account the age of the children with regards to the direct, individual-level effects. Having said this, the analyses presented here seem to suggest that the effect of having children was strongly dependent on cultural factors. A further analysis would take this into account, also when distinguishing between different child ages. The preliminary results presented here also suggest that traditional family orientations should not be considered synonymous to traditional gender roles with regards to non-domestic domains, such as labour participation.

3.4. Contextualising the effects of being unemployed on life-satisfaction

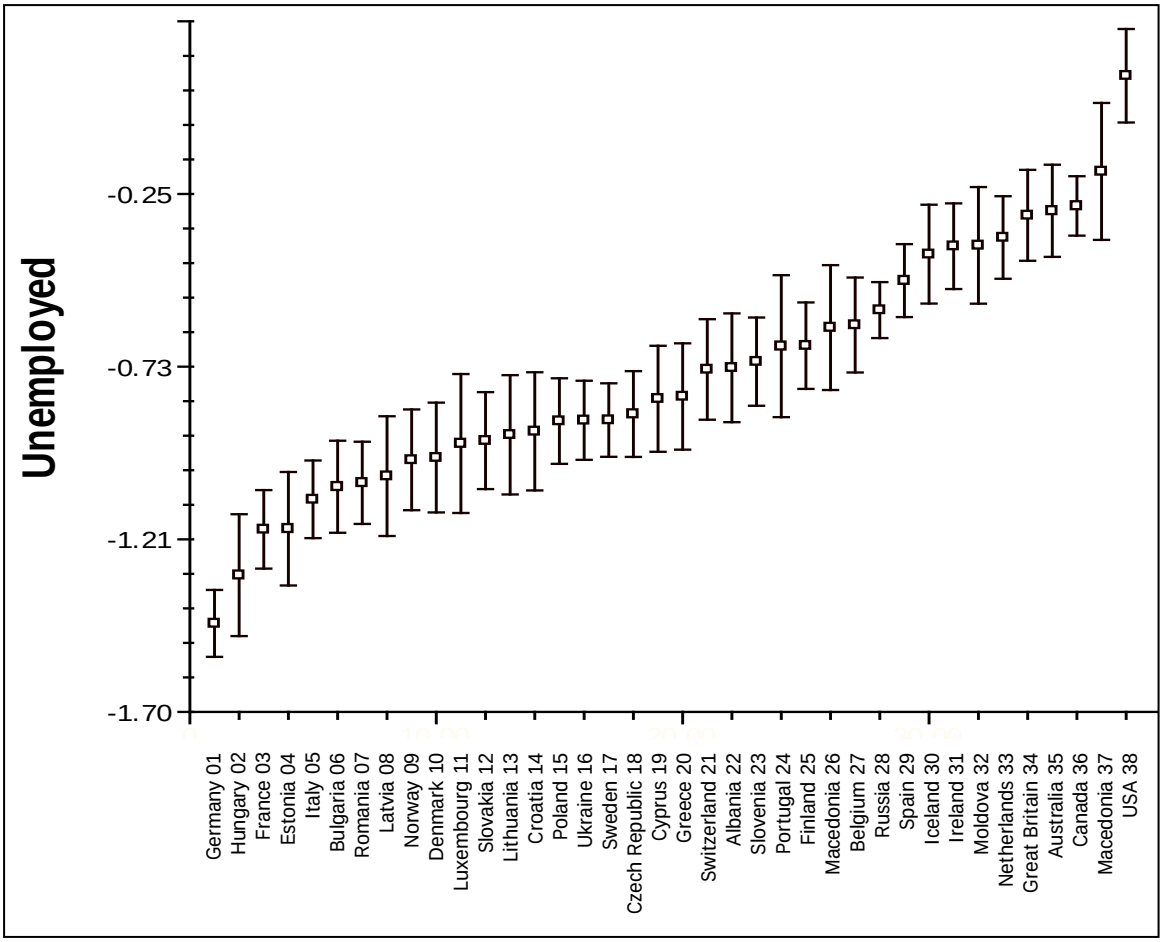


Figure 3.2: Unemployment effects on life-satisfaction, ranked by country, with 95%-confidence intervals based on full model (9)

Following the procedure outlined above, nine models are presented in which economic, socio-demographic and cultural context factors were used to contextualise the relationship of unemployment and life-satisfaction. The first set of indicators used at the aggregate level includes LN GDP/capita, unemployment rates, inequality and inflation to model the economic situation of a country (models 1-3). To reflect demographic characteristics the female labour force as a proportion of the total labour force and the age-dependency ratio of the societies were added (models 4-5). Finally, in order to model differences in attitudes, reflective of cultural manifestations, the mean level of self-perceived autonomy and the emphasis on the role of work were incorporated as well (models 6-7).

3.4.1. The effect of unemployment

A direct effect of unemployment rates as found by some (for example Di Tella et al. 2001) could not be confirmed. While some negative relationship to life-satisfaction could be observed in the simpler models (up to -0.322), the more comprehensive models rendered the effect insubstantial (below -0.1) and statistically insignificant. A measurable direct effect of unemployment rates at the national level could therefore be provisionally presumed to be spurious to other society-level control variables.

The direct effect of unemployment at the individual level was strong and robust across all model specifications (see tables 3.8 and 3.9). Being unemployed was associated with substantially lower levels of life-satisfaction (-0.761 to -0.785 points lower than those employed). This effect was the third strongest individual-level predictor (-0.12), after the age/ age squared variables (around -0.48/ 0.45) and income (0.18), thus showing a higher standardised score than marital status, education, sex and having children. There was substantial, statistically highly significant variation in the random slope of being unemployed. Consulting figure 3.2 we can see the spread of the coefficient as estimated in the final model (9) across the countries in the sample, suggesting that an analysis of the patterns behind this variation is of interest and relevance.

Clark & Oswald (1994) suggest that evaluations of unemployment would depend on reference groups. According to their work higher unemployment in a reference area reduces the extent of the negative effect of unemployment on life-satisfaction to some extent. It has been suggested that unemployment has a lower depressing effect, when the experience of it is more common in the surroundings, thus leading to less of a feeling of deviation from a norm when becoming unemployed. This finding has been replicated in several analyses (Clark 2003), however it was not found in all situations. It seems that its applicability might depend on the level of analysis. Pittau et al. (2010) for example are not able to detect such a moderating reference effect at larger levels of aggregation (such as the country level). This moderating effect of unemployment rates seems to be most prominent at a sub-national level of aggregation (Clark et al. 2010).

Table 3.8: Contextualising the effects of unemployment on life-satisfaction I (economic and demographic factors)

Dep.: Life-Satisfaction	1		2		3		4		5	
Intercept	6.626 (0.09)***		6.625 (0.09)***		6.622 (0.08)***		6.622 (0.08)***		6.623 (0.08)***	
Societal Level										
LN GDP/cap	1.010 (0.11)***	0.331	0.974 (0.17)***	0.598	0.989 (0.12)***	0.324	0.906 (0.14)***	0.557	1.092 (0.14)***	0.357
LN Unemployment rate	-0.295 (0.15)$^{+}$	-0.077	-0.318 (0.13)*	-0.083	-0.259 (0.15)$^{+}$	-0.067	-0.322 (0.17)$^{+}$	-0.084	-0.214 (0.15)	-0.056
Inequality					-0.038 (0.01)*	-0.086	-0.037 (0.01)*	-0.083	-0.037 (0.01)**	-0.083
Female employment							-0.037 (0.02)	-0.062		
Age-dependency ratio									-0.037 (0.02)*	-0.060
Autonomy										
Work emphasis										
LN Inflation			-0.048 (0.18)	-0.016						
Fixed Individual										
Female	0.081 (0.03)**	0.018	0.081 (0.03)**	0.018	0.082 (0.03)**	0.018	0.082 (0.03)**	0.018	0.082 (0.03)**	0.018
Age	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.164 (0.02)***	0.182	0.164 (0.02)***	0.182	0.163 (0.02)***	0.181	0.163 (0.02)***	0.181	0.163 (0.02)***	0.181
DV Higher degree	0.167 (0.03)***	0.034	0.167 (0.03)***	0.034	0.167 (0.03)***	0.034	0.167 (0.03)***	0.034	0.167 (0.03)***	0.034
DV Married	0.412 (0.04)***	0.091	0.412 (0.04)***	0.091	0.412 (0.04)***	0.091	0.412 (0.04)***	0.091	0.412 (0.04)***	0.091
DV Children	-0.072 (0.05)	-0.015	-0.072 (0.05)	-0.015	-0.072 (0.04)	-0.015	-0.072 (0.04)	-0.015	-0.073 (0.04)	-0.015
Random Individual										
DV: Unemployed	-0.784 (0.08)***	-0.116	-0.785 (0.08)***	-0.116	-0.783 (0.08)***	-0.116	-0.780 (0.08)***	-0.115	-0.772 (0.08)***	-0.114
X LN GDP/cap	-0.070 (0.09)		-0.052 (0.09)		-0.061 (0.08)		-0.125 (0.09)		0.069 (0.07)	
X LN Unemployment rate	-0.137 (0.10)		-0.123 (0.12)		-0.166 (0.09)$^{+}$		-0.216 (0.10)*		-0.134 (0.10)	
X Inequality					0.028 (0.)*		0.028 (0.01)*		0.027 (0.01)*	
X Female employment							-0.030 (0.01)*			
X Age-dependency ratio									-0.047 (0.02)**	
X Autonomy										
X Work emphasis										
X LN Inflation			0.023 (0.05)							
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl**	**Var**	**Var expl.**	**Var**
Within Societies	0.078	3.610	0.078	3.610	0.078	3.610	0.078	3.610	0.078	3.610
Between Societies	0.785	0.243	0.779	0.249	0.811	0.213	0.814	0.199	0.820	0.203
Unemployed	0.023	0.133	-0.019	0.139	0.103	0.122	0.127	0.118	0.273	0.099

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 43614 individuals in 40 societies

Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.

Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; LN Unemployment rate: Unemployment Rate (mean 2000-2005), logarithmised (IMF); Inequality: Gini Coefficient (2005, IMF); Female Employment: Percentage of women in the labour force (mean 2000-2005, World Bank); Age-dependency ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05); Autonomy: Self-evaluated amount of choice and control over one's life (1..10); Work emphasis: Score on an additive scale summarising five statements about emphasising labour (0..20); LN Inflation: Inflation Rate (mean 2000-2005), logarithmised (IMF)

In this analysis, a moderating effect of unemployment rates could only be observed in the simpler models (particularly specifications 3 and 4). Contrary to previous findings they did not suggest a moderation effect that softened the impact of unemployment, but rather depressed it further: Higher levels of country-level unemployment were associated with a further decrease in life-satisfaction (-0.216 for model 4, significant at the 5%-level) here. However, in all further specifications this interaction effect was smaller and statistically insignificant. Particularly in the full models the effect was reduced below -0.05. The often claimed reference effect of unemployment rates could therefore not be confirmed here when more comprehensive context models at the national level were applied. Figure 3.4 helps to illustrate this well: countries in the highest and lowest quartile of countries with regards to unemployment rates were distributed across the spectrum and could not be clearly distinguished from another – there does not seem to be a relationship between unemployment rates and the size of the effect of personal unemployment. If reference effects were present, then they must have been located at a different level of aggregation – not reflective of country-level unemployment.

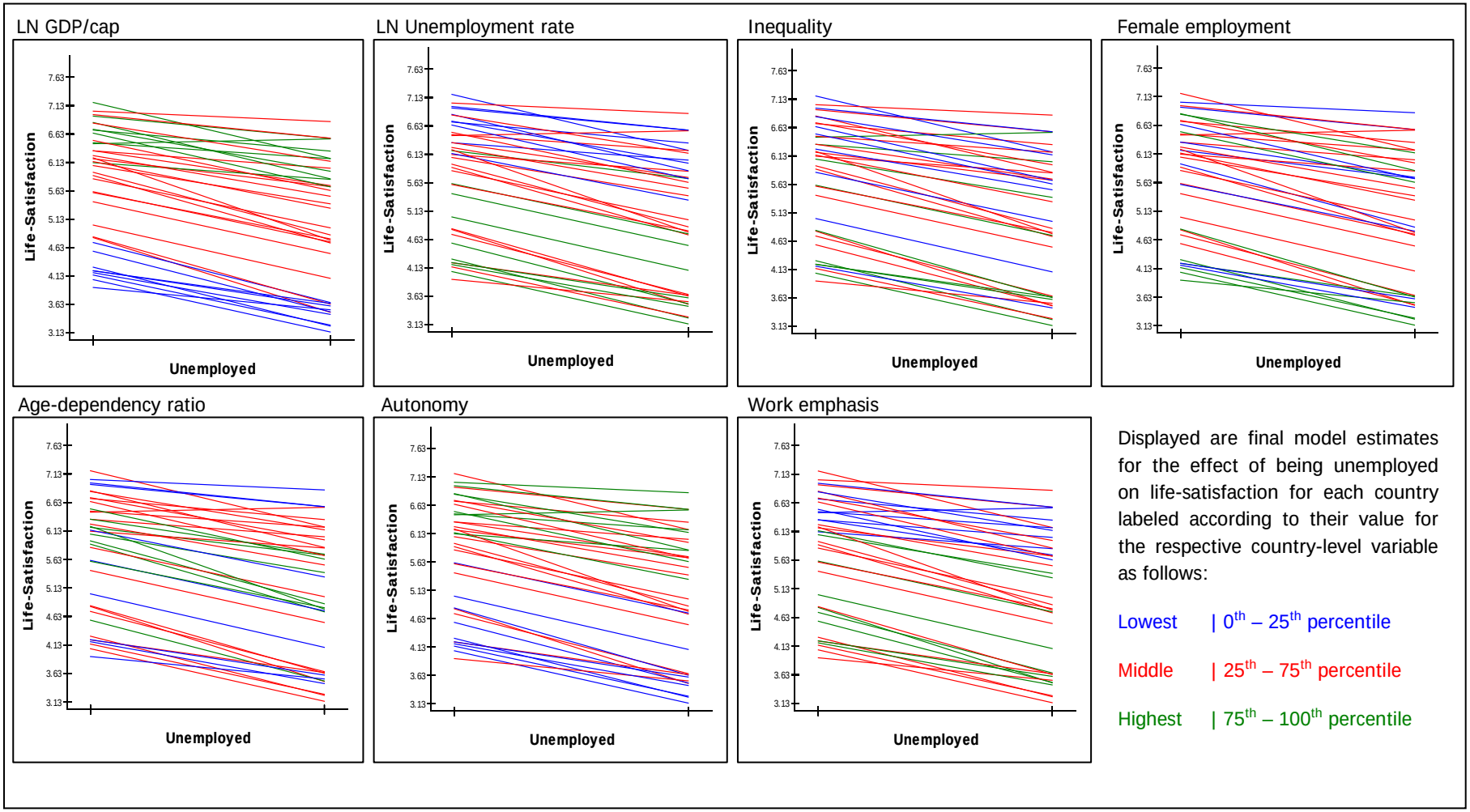


Figure 3.3: Unemployment effects on life-satisfaction contextualised by country-level factors – based on full model (9)

3.4.2. Economic context factors

The material condition of countries plays a role in predicting life-satisfaction (Easterlin 1995), though not in a linear fashion overall. Considering that we do not have very-low income countries in this analysis and considering the logarithmic transformation done, it is not surprising to find a substantial, positive direct effect of LN GDP/capita, statistically significant at the 1%-level for all models. It should be noted though that the size of the impact was reduced in the more comprehensive models in which non-economic factors were controlled for. The direct effect clearly was the strongest of all aggregate indicators with a standardised score of 0.22. A substantial moderation effect on the relationship between unemployment and life-satisfaction could not be found, apart from the most comprehensive model (9) where a depressing impact (-0.225), significant at the 5%-level was observable. Considering that this was not present in any of the previous models, it would be premature to base any conclusions on this.

Di Tella et al. (2001) present an analysis in which inflation is found to have a negative effect on life-satisfaction in an analysis of unemployment, although the effect is not as pronounced as the direct effect they find for unemployment rates. In the models presented here inflation did not have an impact directly on life-satisfaction or in an interaction with unemployment. The effect size was so small (-0.048 and 0.023) that inflation was not retained for further model specifications. It is conceivable that this was partially due to the measure of mean inflation rates for the period from 2000 to 2005. A rise in price levels in a particular year may have an effect directly at this point. While the other measures used here may be reflective of a country's generally stable state over time and therefore an informative differentiating variable, the impact of inflation may be more pronounced as an immediate effect rather than a state. It may therefore be more helpful to investigate this relationship in a longitudinal setting.

Apart from absolute measures of economic states, distributive measures, such as income inequality, have been found to affect the relationship between unemployment and life-satisfaction, too. Graham (2009, pp. 173) highlights the relevance of considering income inequality, not just as a direct effect on life-

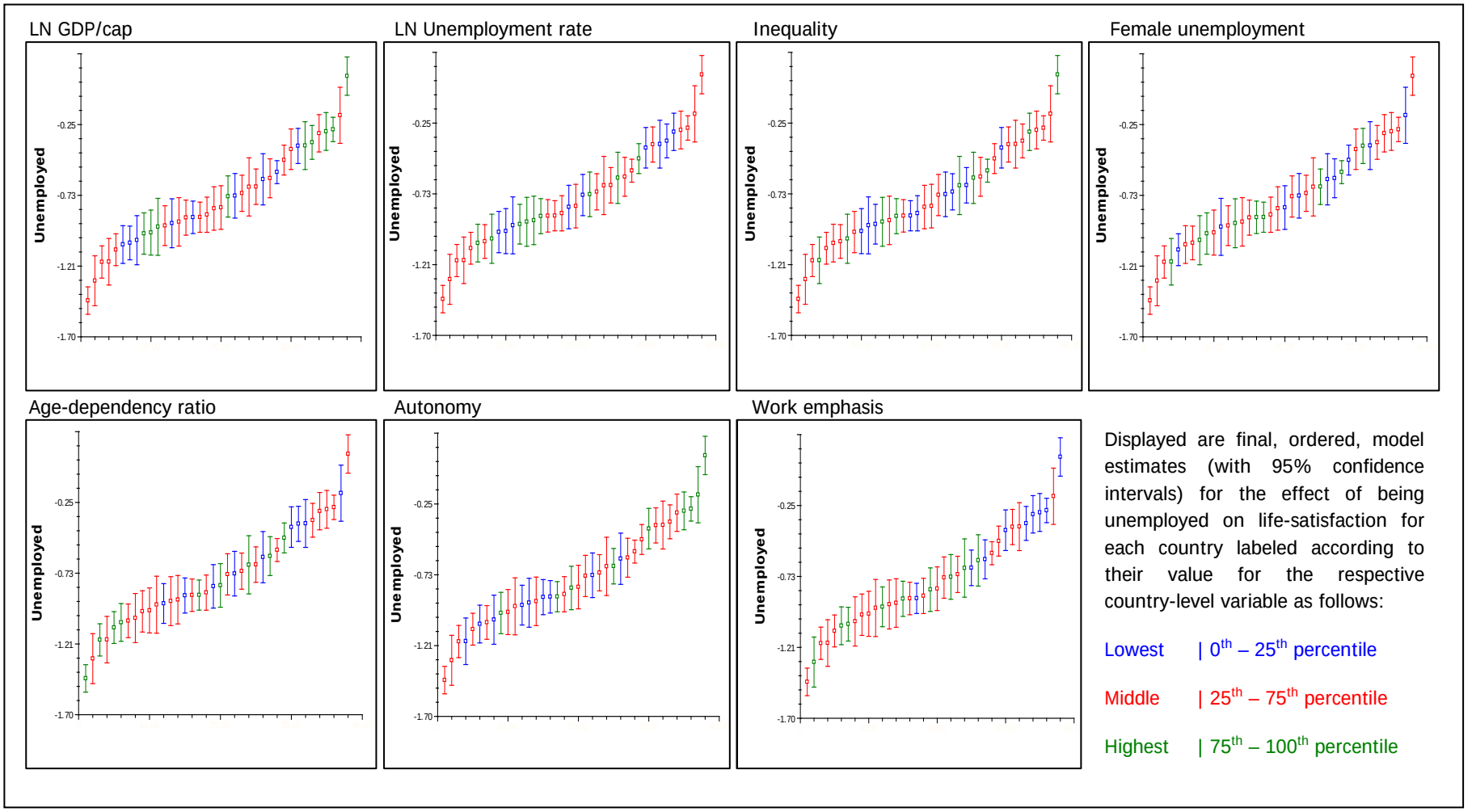


Figure 3.4: Unemployment effects on life-satisfaction contextualised by country-level factors, ordered – based on full model (9)

satisfaction (Wilkinson & Picket 2009; Hadler 2005), but as a moderator for the effect of unemployment on life-satisfaction, finding that greater inequality may reduce the stigma associated with unemployment, thus partially mitigating the negative impact. Here, inequality had a robust direct effect for the models specified (statistically significant around the 5% level), but in effect its size was much smaller than that of LN GDP/capita (standardised score between -0.08 and -0.05). It was consistently negative, meaning that greater inequality was associated with lower life-satisfaction (-.020 to -.038), which is reflected in figure 3.3 with nearly all high-inequality countries clustered at the lower end of the life-satisfaction spectrum. There also was a consistent interaction effect with personal unemployment (statistically significant at least at the 5% level): Higher levels of country-level inequality were found to be substantially mitigating some of the depressing effect of unemployment. In other words, in countries where income inequality was greater, the personal experience of unemployment did not lead to as strong a reduction in life-satisfaction.

3.4.3. Demographic context factors

A reliance on economic context factors alone is insufficient, as demographic or cultural differences between countries affect subjective well-being as well (Hadler 2005). Many studies have demonstrated the variety of influences that personal contexts have on the effect of unemployment on life-satisfaction. However, few of them have been considered in national-level context analyses. While it is well established that unemployment has different effects for men and women (Grün et al. 2010; Kassenböhmer & Haisken-DeNew 2009), the gender composition of the labour force is usually not taken into account. It is quite conceivable however that the differences we find between men and women regarding the role of unemployment may translate into contextual effects. In societies with comparatively more women being part of the active labour force, the societal meaning of work may be influenced through a change of perceived identities of labour market participants and consequential differences in preference formation (MacInnes 2004). In a context of higher participation rates, being unemployed may be seen as more deviant from the situation of the majority of people who act as reference points, thus intensifying the negative effect of unemployment.

Table 3.9: Contextualising the effects of unemployment on life-satisfaction II (cultural factors and full models)

Dep.: Life-Satisfaction	6		7		8		9	
Intercept	6.620 (0.08)***		6.612 (0.08)***		6.620 (0.07)***		6.610 (0.08)***	
Societal Level								
LN GDP/cap	0.804 (0.11)***	0.494	0.967 (0.12)***	0.317	0.770 (0.15)***	0.473	0.678 (0.13)***	0.222
LN Unemployment rate	-0.019 (0.14)	-0.005	-0.299 (0.16)$^{+}$	-0.078	-0.073 (0.15)	-0.019	-0.098 (0.16)	-0.025
Inequality	-0.023 (0.01)*	-0.052	-0.030 (0.01)*	-0.068	-0.027 (0.01)*	-0.061	-0.020 (0.01)$^{+}$	-0.045
Female employment					-0.032 (0.02)*	-0.054	-0.047 (0.02)**	-0.079
Age-dependency ratio					-0.001 (0.02)	-0.002	-0.006 (0.02)	-0.010
Autonomy	0.644 (0.18)***	0.167			0.612 (0.18)**	0.159	0.575 (0.14)***	0.150
Work emphasis			-0.052 (0.06)	-0.034			-0.101 (0.05)*	-0.067
Fixed Individual								
Female	0.082 (0.03)**	0.018	0.083 (0.03)**	0.019	0.082 (0.03)**	0.018	0.084 (0.03)**	0.019
Age	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481	-0.090 (0.01)***	-0.481
Age^2	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.163 (0.02)***	0.181	0.163 (0.02)***	0.181	0.163 (0.02)***	0.181	0.163 (0.02)***	0.181
DV Higher degree	0.166 (0.03)***	0.033	0.168 (0.04)***	0.034	0.166 (0.03)***	0.033	0.167 (0.04)***	0.034
DV Married	0.412 (0.04)***	0.091	0.418 (0.04)***	0.092	0.412 (0.04)***	0.091	0.418 (0.04)***	0.092
DV Children	-0.073 (0.05)	-0.015	-0.079 (0.05)	-0.016	-0.072 (0.05)	-0.015	-0.078 (0.05)	-0.016
Random Individual								
DV: Unemployed	-0.788 (0.07)***	-0.117	-0.772 (0.08)***	-0.114	-0.775 (0.07)***	-0.115	-0.761 (0.07)***	-0.113
X LN GDP/cap	-0.179 (0.10)$^{+}$		-0.111 (0.08)		-0.112 (0.09)		-0.225 (0.09)*	
X LN Unemployment rate	0.004 (0.10)		-0.150 (0.11)		-0.042 (0.10)		0.007 (0.12)	
X Inequality	0.034 (0.01)***		0.029 (0.01)*		0.033 (0.01)***		0.032 (0.01)**	
X Female employment					-0.019 (0.01)$^{+}$		-0.036 (0.01)**	
X Age-dependency ratio					-0.031 (0.01)*		-0.034 (0.02)*	
X Autonomy	0.423 (0.15)**				0.341 (0.13)*		0.309 (0.10)**	
X Work emphasis			-0.080 (0.05)$^{+}$				-0.137 (0.05)*	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl**	**Var**
Within Societies	0.078	3.610	0.078	3.591	0.078	3.610	0.079	3.591
Between Societies	0.865	0.152	0.873	0.212	0.873	0.143	0.885	0.131
Unemployed	0.289	0.098	0.354	0.117	0.354	0.088	0.490	0.067

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 43614 individuals in 40 societies / 42275 individuals in 38 societies (models 7 & 9)

Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.

Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; LN Unemployment rate: Unemployment Rate (mean 2000-2005), logarithmised (IMF); Inequality: Gini Coefficient (2005, IMF); Female Employment: Percentage of women in the labour force (mean 2000-2005, World Bank); Age-dependency ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05); Autonomy: Self-evaluated amount of choice and control over one's life (1..10); Work emphasis: Score on an additive scale summarising five statements about emphasising labour (0..20); LN Inflation: Inflation Rate (mean 2000-2005), logarithmised (IMF)

In this analysis, a direct effect that was statistically significant (at the 5%- and 1%-level respectively) for female labour force could be observed in the comprehensive model specifications (8-9). Higher levels of female labour force participation were associated with lower levels of life-satisfaction generally (-0.032 and -0.047 respectively). The standardised effect size was at about the same level as for income inequality. Additionally a greater proportion of women in the labour force was associated with a greater depressing effect of becoming unemployed (-0.036 for the most comprehensive model with statistical significance at the 1%-level), as stipulated above. A look at the visual representation of the effects in figure 3.4 cautions us about the robustness of the interaction effect. While more countries with low female labour force participation were found to have relatively small effects of unemployment on life-satisfaction, there also were a few cases at the other end of the spectrum (and *vice-versa*). The effect seems to be present for a large number of countries, but not fully applicable to all of them.

Like gender, age is a factor that has been explored at great length for the individual level usually finding a U-shaped quadratic relation (though a more comprehensive analysis suggests a cubic function; Brockmann 2010). However, the age structure of a country – and in particular the relation between workers and pensioners – is likely to be influential when considering what role unemployment plays in contrast to working, since certain generational tensions arise. In a society where the transfers from fewer people working to more retired people may be comparatively more important, as the age-dependency ratio shifts towards older people, being in paid employment may be perceived as particularly significant, as the social system relies on the revenue from the work done. Accordingly the effect of unemployment on life-satisfaction may be more detrimental in societies with greater proportions of older people.

In the models computed here, a negative direct effect found for the age-dependency ratio in the simpler specification (5) disappeared nearly completely in the full model (9). However, a substantial moderation effect could indeed be observed. The more old people (65+) there were in comparison to the potential working age population (15-64), the more did unemployment affect life-satisfaction negatively. The non-robust main effect could be seen in figure 3.3 as well,

displaying substantial overlaps and non-systematic groupings of countries having different age-dependency ratios, in particular with the youngest countries being represented in all parts of the life-satisfaction scale. At the same time, while not without any overlap in the middle part, there was a clear clustering of older-age societies with strong negative coefficients for unemployment on life-satisfaction in figure 3.4, while a greater concentration of societies with greater proportions of young people was found where the unemployment effect was weakest.

3.4.4. Cultural context factors

Finally, the models were enhanced by taking into account cultural differences between the countries relevant to the analysis. Inglehart et al. (2008) demonstrate that besides economic indicators countries are found to show greater mean levels of life-satisfaction when a greater perception of freedom of choice and autonomy is prevalent. With regards to labour markets, it is highly plausible that the impact of unemployment may not be as negative in societies in which there is a dominant perception of individuals having control over their own lives, being able to direct their future in a desired direction by their own initiative. In the analyses here, a greater perception of autonomy was associated with life-satisfaction substantially. With 0.644 in the simpler specification (model 6) and 0.575 in the most comprehensive model (both statistically significant at the 1% level), higher levels of mean perception of personal autonomy in a country were associated with greater levels of life-satisfaction. After economic development this was the second strongest aggregate main effect (with standardised coefficients of 0.15 – 0.17) – reflected in no overlap between the countries in the lowest and highest autonomy quartiles with regards to life-satisfaction (see figure 3.3). In addition, a substantial interaction effect was also found (0.423 and 0.309 respectively). In countries where personal autonomy was perceived to be higher on average, the negative impact of unemployment on life-satisfaction could be partially mitigated – reflected in only partial overlap between low- and high-autonomy countries with regards to their unemployment coefficients (see figure 3.4).

Pointing in a similar direction are investigations distinguishing between different forms of value orientations and their impact on life-satisfaction. Li & Bond (2010)

show that effects of personal attitudes can only be evaluated with regards to their effect on subjective well-being when taking into account prevailing value structures in the respective societies highlighting the importance of a certain amount of congruence between individuals and the respective societies they live in. Delhey (2010) demonstrates that in economically richer societies post-materialistic value orientations enhance life-satisfaction, while the importance of material characteristics decreases. This suggests that differences in the value that is attached to doing paid work – thus defining how much individuals are perceived and evaluated by the means of earning their income – may affect how influential the effect of unemployment on life-satisfaction may be. Following this logic we would expect that unemployment would be more detrimental in societies in which paid work has a higher social importance associated with it.

Societies in which this was the case in this sample did not generally appear to show substantially differing results for life-satisfaction in the simpler specification (model 7). However, in the full model (9), a negative direct effect could be observed (-0.101). This probably does not suffice to make any conclusive statements, considering that the standardised score was not particularly high at -0.07 (similar to female employment and inequality). It does however suggest that societies in which the emphasis on work was greater tended to have somewhat lower levels of life-satisfaction, controlling for all other aggregate predictors. This finding is substantiated when looking at the visual representation of the effect in figure 3.3: There was no overlap between the countries in the highest and lowest percentile for work emphasis, however the middle range countries were spread across the whole spectrum. So there was an effect, but it was most applicable in the comparison of the highest and lowest groups of countries regarding the context factor. An interaction effect with unemployment could be observed for both the simpler and the full model, with the latter showing a more pronounced effect (-0.137, statistically significant at the 5%-level). Where a society held a greater mean emphasis on the role of work, the personal experience of unemployment seemed to be of somewhat greater detriment to life-satisfaction, which again was strongly illustrated for a comparison of the highest and lowest percentile of countries (figure 4) hardly showing any overlap regarding the magnitude of the related unemployment coefficients.

3.4.5. Comments on variance

When computing an empty model about 77.5% of variation could be found at the individual level and about 22.5% at the aggregate level between societies. Considering that at the individual level only some important control variables were incorporated it is no cause for concern that only about 8% of variation was explained at this level (by the fixed individual level control predictors), as the focus was placed specifically on the contextualised relationship of unemployment and life-satisfaction.

Considering the comparatively lower variation at the aggregate level and the important role of GDP/capita in shaping life-satisfaction it is no surprise that the explained variance was much higher than for the individual level. It is important to note though that the addition of indicators increased the explained variance beyond the level of the simple economic based indicators (from about 78% to 90%). This is also reflected in the decreased direct effect size of the GDP predictor in the more comprehensive models.

The proportional reduction in error for the random slope of the individual-level unemployment predictor was very low in the models relying on economic indicators only. With the addition of demographic and, even more so, cultural aggregate factors, the explained variance increased substantially. The inclusion of female employment resulted in only a limited increase in explained variance of the unemployment slope, while age-dependency ratio, autonomy and work emphasis helped explaining a much more substantive amount of variation. The full model taking into account both cultural factors (work emphasis and autonomy) showed by far the highest proportional reduction in error (0.490). This substantiates the meaningfulness of including the aggregate indicators jointly rather than independently in the analysis and supports the confidence in the robustness of the final results and the provisional conclusions that can be drawn from them.

3.4.6. Robustness checks

At -0.364, the negative effect of being a Central-/ Eastern-European country was observable, significant at the 10%-level and thus not fully explained by the factors in the model (see table 3.10). However, the size of the effect was limited and with a standardised score of -0.08 smaller than the main aggregate predictors and at about the same level as inequality, female employment and work emphasis. The interaction effect with personal unemployment was very limited and statistically non-significant. Importantly, the other indicators did not change substantially after the inclusion of this dummy variable. It should be noted that the explained variance in the random slope of unemployment increased to 0.607 though. This implies that the impact of the predictors seen was rather robust to an Eastern-Europe control, however, there was explainable variation that was not captured by the model here with regards to differences between Central- and Eastern-European societies and the others included in this sample.

The inclusion of welfare regimes resulted in a few more alterations. After including the dummy variables, the direct effect of inequality disappeared completely - suggesting that the previous effect was spurious and welfare arrangements may compensate for the impact of inequality. Most other direct effects remained similar. Of the welfare regimes themselves, former USSR showed the greatest, substantial difference to conservative-corporatist regimes (-0.565) followed by developing ones (-0.435). The differences to other regimes were not statistically significant at the 10%-level. With regards to interaction effects we find the latter type to be the only significant and rather substantial one. In developing welfare state type societies, being unemployed had a stronger negative impact than in the reference group (-0.430). The results for the other cross-level interactions did not change extensively. Finding again a greater amount of explained variance in the random slope of unemployment, we can provisionally conclude that there was a systematic amount of variation in the relationship between unemployment and life-satisfaction that was not captured in this model. However, at the same time we find that the indicators chosen (with the exception of the direct effect of inequality) were robust and insightful for the analysis.

3.10: Robustness checks

Dep.: Life-Satisfaction	Central/Eastern Europe		Welfare Regimes	
Intercept	6.714 (0.12)***		6.655 (0.11)***	
Societal Level				
LN GDP/cap	0.598 (0.12)***	0.196	0.548 (0.12)***	0.179
LN Unemployment rate	-0.062 (0.14)	-0.016	-0.142 (0.16)	-0.037
Inequality	-0.028 (0.01)**	-0.063	0.003 (0.01)	0.007
Female employment	-0.035 (0.02)*	-0.059	-0.046 (0.02)*	-0.077
Age-dependency ratio	-0.009 (0.02)	-0.015	-0.008 (0.01)	-0.013
Autonomy	0.481 (0.12)***	0.125	0.445 (0.16)**	0.116
Work emphasis	-0.065 (0.05)	-0.043	-0.116 (0.04)**	-0.076
Central and Eastern Europe	-0.364 (0.20)$^{+}$	-0.082		0.000
Welfare Regimes - Ref: Conservative-Corporatist				
Liberal			0.313 (0.22)	0.047
Socio-Democratic			-0.182 (0.24)	-0.027
Former USSR			-0.565 (0.24)*	-0.085
Post-Communist European Type			0.004 (0.19)	0.001
Developing			-0.435 (0.23)$^{+}$	-0.059
Fixed Individual				
Female	0.085 (0.03)*	0.019	0.085 (0.03)*	0.019
Age	-0.093 (0.01)***	-0.497	-0.093 (0.01)***	-0.497
Age²	0.001 (0.00)***	0.446	0.001 (0.00)***	0.446
Income	0.152 (0.02)***	0.169	0.152 (0.02)***	0.169
DV Higher Degree	0.169 (0.03)***	0.034	0.170 (0.03)***	0.034
DV Married	0.437 (0.04)***	0.096	0.437 (0.04)***	0.096
DV Children	-0.053 (0.06)	-0.011	-0.054 (0.06)	-0.011
Random Individual				
DV Unemployed	-0.803 (0.13)***	-0.119	-0.749 (0.13)***	-0.111
X LN GDP/cap	-0.158 (0.08)$^{+}$		-0.406 (0.11)**	
X LN Unemployment rate	0.012 (0.12)		0.052 (0.14)	
X Inequality	0.031 (0.01)***		0.029 (0.01)*	
X Female employment	-0.041 (0.02)*		-0.042 (0.02)*	
X Age-dependency ratio	-0.038 (0.01)*		-0.029 (0.01)**	
X Autonomy	0.294 (0.13)*		0.356 (0.15)*	
X Work emphasis	-0.178 (0.07)*		-0.175 (0.05)***	
X Central and Eastern Europe	0.122 (0.25)			
X Welfare Regimes - Ref: Conservative-Corporatist				
X Liberal			-0.140 (0.23)	
X Socio-Democratic			0.222 (0.19)	
X Former USSR			-0.081 (0.22)	
X Post-Communist European Type			0.048 (0.18)	
X Developing			-0.430 (0.21)*	
	Var expl.	**Var**	**Var expl.**	**Var**
Within Societies	0.079	3.591	0.079	3.591
Between Societies	0.896	0.119	0.902	0.112
Unemployed	0.607	0.049	0.653	0.043

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 42275 individuals in 38 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with standard errors in parentheses, followed by standardised scores (based on Hox (2010, p.22): (unstandardised score – s.d. predictor)/ s.d. predictor). Individual-level variables are group mean centred (with the exception of sex and the dummy variables), societal-level variables are grand mean centred. Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the fourth and fifth wave of the World Values Survey, unless indicated otherwise. Where countries participated in both waves, mean values are used. Data is weighted using WVS design weights.
Life-Satisfaction: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?"; Age: in years; Income: Subjective scale of incomes (1..10); DV Higher Degree: Holder of a university degree; Married: Respondent currently married; Having Children: Respondent has at least one child; LN GDP/cap: GDP per capita (Purchasing Power Parity) in $ (mean 2000-2005), logarithmised; LN Unemployment rate: Unemployment Rate (mean 2000-2005), logarithmised (IMF); Inequality: Gini Coefficient (2005, IMF); Female Employment: Percentage of women in the labour force (mean 2000-2005, World Bank); Age-dependency ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (mean 2000-05); Autonomy: Self-evaluated amount of choice and control over one's life (1..10); Work emphasis: Score on an additive scale summarising five statements about emphasising labour (0..20); LN Inflation: Inflation Rate (mean 2000-2005), logarithmised (IMF)

Looking at the ranking of countries according to the strength of the negative impact of unemployment on life-satisfaction, based on the final model (see figure 2), complements this discussion. The group of countries showing the smallest effect of unemployment on life-satisfaction included all Anglo-Saxon or liberal ones with the USA showing nearly no effect at all. These results thus call into question arguments, based on welfare state principles, which suggest that welfare states act as a cushion against the negative effect of unemployment. At the other end of the spectrum we find Germany with the strongest negative impact of unemployment on life-satisfaction, followed by Hungary, France, Estonia and Italy. However, the pattern is not definitive. For example, we find only a limited impact of unemployment on life-satisfaction in liberal Great Britain, but also in the Netherlands, which has a welfare state more similar to Germany. The distribution is also not based on a clustering effect of Eastern-European countries versus the others, as they were spread throughout most of the spectrum. It therefore seems that, while there may be some influences of welfare state arrangements, they do not follow traditional classification models and that they are not affecting most of the factors in the analysis, with the exception of the inequality effect.

3.5. Summary

The exploratory analyses above provide many substantial insights. With regards to individual-level socio-demographic controls, they allow us to distinguish between variables that show substantial variation across countries with regards to their effect on life-satisfaction (mainly education, having children and being married – and to a lesser extent income) and variables for which the relationship seems to be rather similar across countries (such as age). With regards to sex the small direct effect found needs to be understood in different contexts that may enhance it slightly or can offset the effect fully, meaning that substantial differences between the sexes with regards to life-satisfaction should not be universally assumed. In summary, these explorations show that studies interested in investigating the effects of particular individual-level indicators on life-satisfaction should always consider whether there might be contextual influences affecting the respective effects as this is the case for a substantial number of indicators and a neglect of these context effects would result in potentially misleading findings based on claimed effects that cannot be understood without aggregate factors properly.

The main focus of this analysis however was the exploration of the relationship between unemployment and life-satisfaction. While a substantial negative effect of being unemployed could be confirmed robustly, it has become clear that economic, socio-demographic and cultural factors all affect this relationship and may enhance or mitigate the negative effect. Economic frameworks matter, but societal affluence itself did not appear to be a substantial moderator (though it shows a consistent positive main effect) and neither did national unemployment rates. This in turn does not mean that unemployment rates or economic affluence are never moderating factors – the analyses of the control factors have demonstrated that. However, for the relationship between unemployment and life-satisfaction they did not seem to be as relevant, at least at the national level. The only economic variable relevant as a moderator in the models computed seems to be inequality (in a mitigating function).

However, some caution should be applied, considering that the inequality effect did not hold robustly when controlling for the welfare state types as dummy variables.

The robustness checks otherwise allow for confidence in the results from this analysis, as they did not affect the other relationships substantially. It would be very insightful to conduct a similar analysis with a sample of countries for which there is comparable aggregate data on unemployment compensation specifically in order to avoid having to use welfare state type classifications that obviously contain less detail in information. As discussed above, the available government expenditure indicators (total government expenditure, government revenue per capita, subsidies and transfer as well as tax revenue and social contributions) did not show substantial direct or interaction effects when included in the analyses presented. This may be due to the non-specificity of the budget variables, but one should also consider whether traditional welfare state arguments apply directly to this relationship. As shown in figure 3.2 several countries were not situated in the places that one might expect to find them in, given an argument based on welfare-state type approaches. Furthermore, with the exception of the liberal type countries, there was considerable spread between the countries of each other type suggesting that the relationship between unemployment and life-satisfaction was not mainly driven through the welfare state arrangements.

Other factors however affect the relationship. Both the age structure and the proportion of women in the labour force seem to be relevant in determining the framework in which people experience unemployment. The effects in both cases appeared to be robust, but their magnitude was limited. They are relevant findings, but it may be the case that they are embedded in other socio-demographic structures – further, systematic analyses in this domain seem to be potentially very insightful. Cultural factors, usually ignored in econometric analyses of subjective well-being, clearly affect the relationship. The societal mean perception of autonomy was one of the most relevant main predictors and also moderated the unemployment life-satisfaction relationship substantially. While the effect for work emphasis was not as large, it was clearly observable distinguishing societies with particularly high and low levels of emphasising the role of paid labour.

The results presented here are obviously not fully conclusive – as an exploratory investigation they aim at pointing out what the potentially most fruitful directions for further research in this domain may be and which problems should be avoided in

the future that previous studies suffered from – in particular the disregard for a wider array of contextualising factors. A clear limitation is the cross-sectional approach to the study. It is informative for the results reported above, however, it does not allow us to trace the development of becoming unemployed and subsequent processes of adaption. Longitudinal analyses are required to more accurately explore the unemployment/reemployment process. Having said this, they should not replace the contextualisation of unemployment effects. 3-stage modelling allows for the incorporation of time effects as well as context effects and should be the foundation for good analyses aiming to understand the processes in unemployment histories precisely. The results from this study also apply only to European and Anglo-Saxon societies. Recalling the substantial difference in the perception of subjective well-being across societies, they should not be generalised to other country groups, but may form the foundation for comparative analyses as much as they are sensible when concepts can be compared meaningfully.

Finally, the analyses presented here contextualised the effects of unemployment on life-satisfaction with aggregate indicators, but they did not contextualise individuals with regards to their connections and embeddedness in society. The results were mainly expressions of certain procedural outcomes, but did not take into account the structural contexts of the respondents or their societies in a systematic fashion. Furthermore, the unemployment effect was controlled for other individual-level characteristics, but due to the cross-sectional nature, it did not allow us to account for selection biases and endogeneity.

In order to address both of these concerns this investigation now proceeds to a systematic analysis of the effects that account for differences between individual and societal structural frameworks in which the respective processes occur. To do so the concept of social capital will be introduced and research presented that establishes a strong rationale for the use of social capital as the structural concept within which the relationship between unemployment and life-satisfaction can be explored. To account for self-selection biases and endogeneity in a cross-sectional research design, structural equation modelling techniques will be employed, providing robust measures as well as accounting for higher likelihoods of particular groups of people to be unemployed.

4. Conceptualising social capital

4.1. Introduction

The concept of social capital has gained great attention in the social sciences and a significant amount of research has been based on it (Winter 2000). However, within this research the concept is applied in a multitude of ways using quite distinct assumptions. It is applied to ideas "… ranging from neighbourly help to the civil morality of a globalized world society" (Esser 2008, p. 22). It is not very surprising therefore that the understandings of social capital, and consequentially its definitions and operationalisations, differ significantly between scholars. Indeed, most acknowledge the different conceptualisations and explicate their approach before beginning their analyses. However, often they will still present a more general statement about what social capital is about regardless of the differences in definition. Some begin their discussions of the concept in this manner:

> "The premise behind the notion of social capital is rather simple and straightforward: *investment in social relations with expected returns in the marketplace.*" (Lin 2001, p. 19)

> "… everyday networks, including many of the social customs and bonds that define them and keep them together, are what we mean when we talk about social capital." (Halpern 2005, p. 2)

The two examples above illustrate that the apparently rather general nature of such statements is not as encompassing as might be claimed. This can be further demonstrated by the following introductory definitions of social capital:

> "… the norms and networks that enable people to act collectively." (Woolcock & Narayan 2000, p. 225)

> "Social capital consists of the resources that are embedded within people's social networks." (Flap & Völker 2004, p. i)

Some authors might claim that their approach could also incorporate the different perspectives presented above. However, it would be misleading to deny the variety in approaches, as their foci and methods differ and consequentially the questions they investigate differ as well. While the first definition for example describes social capital as deliberate action, the second approach considers social capital rather as an outcome or summary of other activities. The third conceptualisation emphasises a functional perspective of social capital to enable collective action whereas the last definition highlights the understanding of social capital as a resource.

In this chapter a systematic discussion of the different understandings and uses labelled social capital will be presented. After a brief review of the origin of the concept, the differences in more and less economic based approaches will be discussed, highlighting the distinctions between focusing on the individual and the societal level. A discussion of the interplay of these different forms will follow leading to an overview of the core problems of social capital as a scientific concept. Finally, a system of conceptualisations will be presented that can be used for operationalisation in order to investigate the nature and effects of different facets of social capital later in this project.

4.2. Is social capital a new idea?

When focusing on general descriptions of social capital, like “the core idea of social capital theory is that social networks have value.” (Putnam 2001, p. 19), it is not surprising that critics question whether the concept can add anything meaningful to existing knowledge. That relationships matter and individuals do not act in isolation of each other is not a new insight unavailable before the introduction of the idea of social capital (Portes 1998). Indeed, if that was all that social capital theories were about one could easily question the importance of the concept.

However, most social capital approaches move beyond the rather simplistic starting points and provide a framework through which societal interactions can be understood and analysed in new and often meaningful ways (Woolcock 2001). To illustrate the depth of the concept it is helpful to consider key steps in the evolution of the idea as a social scientific approach. While a number of authors trace the first use of the concept back to the early 20th century and the author L. Judson Hanifan (e.g. Putnam 2002; Halpern 2005), some even trace origins back to the 19th century (Farr 2004). For the purpose of this discussion the focus will be placed on the more recent discussions by Bourdieu, Coleman and Putnam, generally presented as the authors most influential in shaping the idea for the current debate in most reviews (e.g. Field 2003; Baron et al. 2000; Castiglione et al. 2008).[32]

4.2.1. Bourdieu’s view of social capital

Pierre Bourdieu distinguishes three forms of capital: economic, cultural and social capital. In his account economic studies are criticised for limiting themselves to a narrowly defined set of practices and therefore missing significant societal processes (Bourdieu 1986). The extension to cultural and social capital allows for a more accurate understanding in particularly alluding to the processes that lead to certain economic norms and the significance of power relations. While the results of possessing social and cultural capital can essentially be understood in economic terms, the processes involved cannot. The role of social capital in this is defined as

[32] This section presents a brief overview of the main ideas of the authors mentioned. For more comprehensively dedicated reviews see for example Farr 2004; Putnam 2002; Siisiäinen 2000 or Fine 2001.

“the actual or potential resources which are linked to possession of a durable network or institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group.” (p. 248)

Social capital then is owned by a group, but can be utilized by the members of that respective group. Its strength depends on the size of the network connections and the volume of capital (economic, cultural and social) that each connection possesses (Bourdieu 1986). Probably the most important insight from this perspective is then that social capital is not some passive characteristic of groups, but requires purposive actions in order to be enhanced. Analogous to the economic processes associated with other forms of capital, the accumulation of social capital for some may prevent others from gaining access and thus reduce possible competition. As membership in a group allows for access to resources determined by the group’s social capital, investments of its members into the group’s connections and the volume of their resources are decisive in enhancing the group’s social capital. Groups will try to protect their stock of capital and therefore build barriers to restrict access to their resources. Consequentially groups can maximise their power by gaining larger amounts of social capital, as with it they will be able to better utilise their economic and cultural capital resources (Bourdieu 1973).

Social capital then becomes an important - purposive - instrument in power struggles within a society and will be used by elites with greater capital stocks to secure their position as compared to the majority of society who do not have access to the connections the secluded elite groups hold. Alejandro Portes (1998) highlights the significance of Bourdieu’s contribution in understanding social capital as purposive:

> “His treatment of the concept is instrumental, focusing on the benefits accruing to individuals by virtue of participation in groups and on the deliberate construction of sociability for the purpose of creating this resource.” (p. 3)

4.2.2. Coleman's view of social capital

Using social capital James Coleman aims at creating a concept that integrates rational choice, actor-based economic approaches with institutional theories of societies. On their own, they are both deficient in his eyes, as they either neglect any societal context factors or do not consider the important role of individual actors (Coleman 1988, 1994b). Social capital can be interpreted analogously to other capital forms (such as human or physical capital) as a resource with the ability to enhance productivity. However, because it is less tangible than other forms of capital, as it is embodied in the relations between individuals, it can be best defined according to its function, which is to facilitate actions (Coleman 1988).

Social capital is of particular importance in the creation of human capital of the next generation, for which it is instrumental. While it might be useful for individuals, they cannot possess it. Social capital in Coleman's view is a public good (Coleman 1994a). It might be beneficial for some actors and harmful for others under certain circumstances, but they cannot take possession of it like the elite groups could in Bourdieu's perspective. Accordingly a free-rider problem occurs, as individuals might get benefits from increased social capital levels, but might not find it rational to make an effort themselves.

Coleman describes the production and maintenance of social capital in terms of *credit slips*: through certain positive actions individuals can create a reciprocal relationship with others in which they can rely on future actions by the other person to be positive as well. Social capital then depends on i) the trustworthiness that obligations will be fulfilled and ii) the amount of obligations (or credit slips) held (Coleman 1988). A community with a high level of social capital would be one in which many people held a large number of such obligations to each other and where it could be expected that actions will be consistent with them.

Trustworthiness depends certainly on norms shared within a community. According to Coleman these can be internalized or enforced, as long as they have a focus on the community and the enhancement of social connections (Coleman 1994b). For him "All social relations and social structures facilitate some forms of social capital"

(Coleman 1988, p. 105). This emphasizes the functional approach to the concept he employs. Where Bourdieu focused on the structural implications within society that were furthered through social capital, Coleman illustrates how social connections and relations themselves emerge and can be facilitated.

4.2.3. Putnam's view of social capital

Regardless of whether authors agree with Robert Putnam's approach to social capital they usually acknowledge that his contribution was the firm establishment of the concept in social scientific and public policy discourse (Castiglione et al. 2008, p.3; Halpern 2005, p. 7). Putnam uses an approach based on *civicness* as the base for his theory:

> "Social capital refers to connections among individuals (…) closely related to what some call 'civic virtue'. (…) civic virtue is strongest when embedded in dense networks of reciprocal social relations." (Putnam 2001, p. 19)

Social capital is understood as a characteristic of communities and higher levels of social capital will be related to better outcomes for communities on a social, economic and political sphere. The role of institutions is important in this context as he shows in his study of differences in the civicness of Italian regions and the relation to institutional settings and socio-economic performance (Putnam 1993). Putnam places a particular emphasis on the role of associational membership and its positive effect on social capital creation. The title of his most famous work "Bowling Alone" clearly demonstrates this. Putnam describes the decline of civicness in the USA and the alleged negative consequences it has for communities across the country and society at large (Putnam 2001). While Americans used to show high levels of associational participation in earlier decades, he argues, there has been a steady decline more recently, which he illustrates by the decline in bowling league membership and then presents a variety of empirical evidence to support his claim.

The major reasons he identifies are a generational change in values, the increasing dominance of television in determining leisure time and the emergence of less traditional family structures with more women being part of the labour force

(Putnam 2001). While some countertrends exist, they are not strong enough to outweigh the negative effects of civic erosion he contends. In Putnam's perspective public policy can and should work to counter this trend (Putnam 1995). The introduction of the difference between *bonding and bridging social capital* becomes instrumental in this respect. Whereas bonding social capital facilitates in-group relations, bridging social capital enables a reach beyond existing group boundaries (Putnam 2001). In this form social capital then can overcome group boundaries rather than reinforcing them, as emphasized by Bourdieu for example. Both forms play a significant role in Putnam's account however. In summary Putnam's view on social capital can be described as follows:

> "(Social capital) refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit." (Putnam 1995, p. 67)

4.3. Social capital: Beyond economics or economics permeating deeper?

Mark Granovetter succinctly criticizes traditional economic approaches to understanding society and creating public policy as providing an 'under-socialized conception of man' (Granovetter 1985). Relying on notions of physical and human capital to explain societal processes and deriving generalized predictions of individuals' behaviours is not sufficient to understand how humans interact (Coleman 1988). Social capital then is seen by several authors as being able to provide new conceptualisations that move beyond traditional economic thought and can take account of human interactions within a societal context (Flap 2004, Woolcock 2001, Field 2003).

Others are less optimistic about the potentials of social capital and regard it with high scepticism. Instead of seeing it as a new approach they perceive it as a somewhat disguised economic method (Fischer 2001). Contrary to the view that it could qualify economic approaches they argue that social capital essentially establishes the use of economic understandings in discourses where they have not been dominant so far, in particular with regards to societal interactions and human relationships (Fine 2001). An emphasis on social capital as a concept that is not robust in itself (Portes 2000) but relying on economic assumptions without properly discussing them may lead to negative practical outcomes (Portes & Landholt 2000).

To generalize about social capital ideas as a whole to fit either of the two above-mentioned perspectives would be too simplistic. Indeed there are approaches that employ concepts and terminologies very similar to those used in economic theories, while there are others that explicate the differences to them or integrate them in conceptually new frameworks. A major distinction in these evaluations is between social capital use at the individual and collective level (Esser 2008). The following section aims at highlighting the distinctions emerging in concepts depending on which level of analysis they locate social capital at. Understanding these distinctions will allow us to see where each of the criticisms that have been advanced are most relevant.

4.3.1. Social capital as a resource of individuals

While not denying the societal significance of social capital, Flap & Völker (2004) illustrate an individual-centred approach to social capital well. Social capital is understood to be based in purposive action and as beneficial to individuals engaging in it. The social capital of an individual then is characterised by four dimensions: "(1) the number of people prepared to help. (2) The degree to which they are prepared to help. (3) (...) the resources people can assess through ties to others, like the human capital of their friends. (4) (...) social capital implied in the structure of the network (...)." (p. i).

The emphasis on attributes an actor holds alludes to the individually-centred perspective. This is explicated further in the two central hypotheses they distinguish: the *social capital hypothesis* stating that "(...) those with better social capital are better able to realize their ends" (p. i) and the *investment hypothesis* formulating that "(...) people invest in ties to the degree that these are instrumental in achieving their ends." (p. i). The second hypothesis is of particular significance as it highlights social capital predominantly as a product of the personal effort undertaken by individuals expecting a certain return. Through this the analogous character to economic approaches becomes apparent.

Nan Lin (2001) systematically integrates this premise into a network approach of social capital formulating at its most general the proposition that "(...) social capital is best understood by examining the mechanisms and processes by which embedded resources in social networks are captured as investment." (p. 3) In this context social capital has to be understood as an economic resource very similar to other resources differing in the sense that it is not people (human capital) or objects (physical capital) that investment is directed at, but rather the relations between actors, so that the investor is able to gain access to the resources held by another actor (p. 24). Accordingly Lin frames social capital as "another neoclassical capital theory" (p. 18) in conjunction with cultural and human capital approaches.

Defining social capital operationally as "(...) resources embedded in social networks accessed and used by actors for actions." (p. 25) the types of actions individuals

can take can be distinguished as instrumental and expressive actions, where the former represent an actor's motivation to gain more social capital and the latter the following step, namely the aim to maintain the gained resources (pp. 55).

Several factors determine the likelihood of such actions being successful and thus positively related to social capital. They can be summarized broadly in three categories: structural positions of an actor in a network's hierarchy, network locations and the purposes of the action (expressive versus maintaining) (Lin 2008). Understanding social capital in these terms finally leads to distinguishing two types: *accessed and mobilized social capital* pointing to the difference between the pool of resources an actor has and the quality of the use of these resources (pp. 52) – a concept similar to other economic approaches evaluating resources by the amount and their marginal value.

Hartmut Esser (2008) provides a systematic framework to distinguish the abovementioned understanding of social capital (*relational capital*) from the more collectively focused one (*system capital*). Whereas system capital is a characteristic of the entire network (such as system trust organization) relational capital is

> "(...) the valued number of resources an actor can employ and use through direct or indirect personal relations with other actors who control those resources and in which the actor is intentionally investing and which should eventually pay off." (p. 25)

In this definition we find again the elements described by Flap & Völker and Lin – individuals, resources, intentionality, expected returns on investment – summarized comprehensively. According to Esser relational capital can further be split into three subtypes. The similarities, while appreciating certain differences in the exact frames, to the other approaches are quite apparent. This typology therefore provides a good review differentiating i) positional social capital (ability to gain relevant contact points), ii) trust capital (based on the trustworthiness of an actor and their reputation) and iii) obligation capital (credit slips) (pp. 30).

Neither Esser, Lin nor Flap & Völker deny that there is also a societal aspect to social capital. However, their discussion of it clarifies that their emphasis lies on an individual-based approach and economic terminologies. As mentioned above, Esser (2008) distinguishes system capital that cannot be a property of individuals. Two aspects are important to be noticed though: First, the two types he distinguishes are both introduced as different ways of understanding "the social capital of an actor" (p. 25). This might seem like a very detailed play with words, but is important to consider, as it signifies that the individual is understood to be at the centre of the inquiry. A further reflection of this illustrates the approach, as Esser, after discussing the different characteristics of relational and systems capital, explains that "*System capital*, (...), emerges as a by-product of relational capital." (p. 41). Essentially, aggregate forms are then conceived of as consequences of individual-level structures and not a distinct level of analysis. Similarly Lin (2001) argues that the assumptions investigated at the individual level hold at the collective one as well, while Flap & Völker (2004) describe the concern over collective aspects of social capital, but remain focused on the individual ones.

In summary, the approaches presented above provide a conceptualization of social capital that is dominantly based on micro-economic principles using terminologies equivalent to those in theories of other capital forms. They do not limit themselves to incorporating social capital into existing theories though, but rather manage to extend them and re-inform them in meaningful ways. In doing so, they particularly point to the role of the individual as an actor with certain motivations who takes purposive actions aiming to gain benefits from those through a network of social relations. Social capital is also understood to play a role at the societal level, which is mostly determined as an aggregation from the individual one, even when specific characteristics are identified, similarly to utility-based micro-economic approaches discussed earlier when distinguishing subjective well-being from notions of economic utility (see chapters 1 and 2).

4.3.2. Social capital as a characteristic of societies

What Esser (2008) terms *system capital* and understands as the "emergent characteristic of an entire network" (p. 25) and thus not creatable by individuals on

their own provides a heading for an approach taken by authors who primarily focus their analysis at the societal level. In doing so, they do not neglect the role of individuals, but primarily pay attention to characteristics shaping social capital at the aggregate level and, distinctly to Esser (and others focusing on social capital as an individual characteristic) understand these characteristics as more than a by-product of the individual level processes.

Michael Woolcock and Deepa Narayan (2000) employ such an approach which is illustrated by their definition of social capital as “norms and networks that enable people to act collectively” (p. 225). This approach can be clearly distinguished from the ones placing the individual at the centre of attention. Social capital is not embodied in terms of resources (useful relations) an actor can utilise, but in the sets of relations and frameworks they operate in. This deepens the discussion about the sources of social capital, which allows for the incorporation of aggregate level settings without neglecting the significance of individuals within the relations (Woolcock & Narayan 2000). Apart from the difference in sources it is equally important to notice the distinction in the functionality of social capital. Whereas it was seen as a resource to create benefits for individuals in the approaches considered above, it is seen here as affecting a collective first of all. Therefore it should be understood as a property of a community or society.

Robert Putnam assumes a position within this framework as well. He strongly emphasizes the role social capital plays within communities. The primary elements social capital is associated with are networks, norms and social trust (Putnam 1995, see definition above), which are very similar to the ones identified by Woolcock and Narayan. Accordingly Putnam also focuses on mutual gains from this for all members of a society rather than benefits that could be exploited by singular individuals. Social capital as conceptualized in this approach is instrumental and positive in this respect: “(...) life is easier in a community blessed with a substantial stock of social capital.” (Putnam 1995, p. 67). There are different contexts to which this notion can be applied. While Putnam focuses on Western societies discussing processes related to post-industrial change (1993, 2001), Woolcock places an emphasis on the role of social capital in development (Woolcock & Narayan 2000;

Woolcock & Radin 2008). An important implication from these approaches is that social capital can be understood as an element or instrument of public policy (PRI 2005a; Putnam 2001). If certain conditions support the establishment of settings with increased social capital that are associated with desired policy outcomes, policy makers should take them into account.

T.K. Ahn and Elinor Ostrom (2008) most clearly explicate a distinct conceptual framework on which to base a societal analysis and contrast it to what they call neoclassic economic approaches to social capital. The essential differences between the latter and their own approach (termed second-generation collective action) is the divergent understanding of trustworthiness. While in economics it is an individual characteristic emerging out of self-interest, Ahn and Ostrom describe it as a characteristic of preference: "(…) trustworthiness is embedded in a person's intrinsic norms by which one reciprocates others' trust even when material self-interest does not compel one to do so." (p. 72). Their approach aims at understanding how networks and institutions affect the level of trustworthiness in society and vice-versa, seeing those three as basic forms of social capital.

While neoclassic economic approaches are based on the assumption that the self-interested strive for gains in individual social capital can have positive outcomes in their accumulation at societal level, second-generation collective action approaches see the emergence of action for long-term societal benefits possible only if such short-term, selfish individual-oriented orientations are overcome (p. 78). Contrary to first-generation approaches, there is no necessity for altruistic-type orientations of individuals. While older concepts argued that generally self-interested individuals could only achieve sub-optimal societal outcomes, the second-generation approaches refute this. Trust is an essential element that allows for a rational belief about others' likelihood to reciprocate action and can thus be internalized as a norm by individuals. The general level of trustworthiness thus determines the amount of trust within a society. Through networks and more complex interactions than assumed by more traditional collective action (and neoclassic economic) concepts, trust then acts as the linking factor between social capital and its outcomes (pp. 79). The level of general trust then can be understood as the baseline expectation

of others' trustworthiness (p. 87). A higher level of trustworthiness in a society will be associated with higher levels of social capital.

The presented distinction between trust and trustworthiness is of great importance considering the role ascribed to trust in many societal social capital analyses. The role of trust as a mitigating factor for uncertainty and as a connector in social relations is described as elementary in most discussions of trust (e.g. Field 2003). Social trust is often used as an indicator of social capital itself and reported to show high levels of reliability (Halpern 2005, pp. 32). The distinction between trustworthiness as an element of social capital and trust as a connecting instrument between different actors is lost in such accounts. This simplification can become problematic when taking into account the different levels trust could operate on, in particular regarding the distinction between its cohesive and exclusive potentials (Baron et al. 2000). Furthermore, using trust as a societal concept as compared to individuals' singular levels of trust is meaningful as shown by Kenneth Newton (2001). While trust evaluations at the individual level do not seem to provide strong indicators for collective outcomes, aggregate levels do so to significantly larger extent. A reliance on trust alone to explain positive societal interaction thus needs to be considered with caution as demonstrated by Cook et al. (2005). Cooperation may not be based on trust levels alone, but rather causing trust to be facilitated through a more complex relationship framed by institutional settings – similarly to the suggestions by Ahn and Ostrom (2008).

In summary, approaches employing a notion of social capital as a collective characteristic tend to incorporate an interplay of norms, trust and institutional settings. Benefits derived from social capital emergence are primarily useful for the community or society analysed. Generally, such concepts distinguish themselves more decisively from traditional economic approaches. Particular attention is often paid to the notion of social or generalised trust within a society. While often portrayed as a useful indicator, the necessary complexity of its interplay with social capital is not always understood and discussed sufficiently.

4.4. The reach of social capital relations

While the approaches presented in the previous section all base their concepts on an individual or collective level, none of them would disagree with a statement that social capital has aspects that are relevant at both levels. They tend to explain one level based on the other and identify the foundation as the most significant in the social capital discussion. However, rather than looking at levels and actors themselves, social capital can also be explored in terms of the relations between different actors at the core of the conceptualisation. The following section will first provide a basic rationale for a multi-level approach and then discuss the differences in reach that relations within social networks might take and what positive and negative influences may follow.

4.4.1. Social capital as a multi-level approach

The ability to incorporate multiple levels of analysis is one of the reasons why social capital is supported by a number of scholars as a useful concept (Baron et al. 2000). Interactions of humans within a society cannot be understood properly focusing on only one domain they argue and therefore provide contextual frameworks to encompass the complexity of the approach. David Halpern (2005) for example devises a very comprehensive framework made up of three dimensions: the components of social capital (networks, norms and sanctions), the levels of analysis (individual or micro-, group or meso- and community or macro-level) and the character of its function (bonding, bridging and linking) (pp. 26). Following his approach social capital comes to address questions ranging from family relations to group conflict and international law.[33]

Even without discussing all 27 resulting elements in this social capital conceptualisation, an important insight for multi-level approaches can be drawn from it: Not only might there be different levels of actors involved in the process of establishing social capital, but also different types of relations between them – partially regardless of their level of aggregation – may exist. John Field (2003)

[33] Not surprisingly the vastness of the approach is one of the main criticisms held against such an encompassing use of the concept. This will be further discussed in section 4.5.

stipulates that different actors might be able to engage with or use varying types of social capital relations depending on their current situation.

A good systematic approach focusing on the relations between actors that has been influential on social capital research was devised by Mark Granovetter (1973). He emphasises the importance of the integration of micro- and macro-level analysis:

> "(…) personal experience of individuals is closely bound up with large-scale aspects of social structure, well beyond the purview or control of particular individuals." (p. 1377)

The main distinction in relations between actors Granovetter describes is that between those captured in strong and those captured in weak ties. Understanding the difference is of great importance, as an undifferentiated view would miss differences in effects of social relations. *Strong ties* refer to interactions that create local cohesion, fostering relations within distinct groups often associated with membership patterns. *Weak ties,* on the other hand, describe relations that reach beyond other members of the group(s) an actor belongs to, thus facilitating intergroup interaction (p. 1378). The differences in effects regarding social capital depending on the type of relationship are profound – for the actors involved, as well as for the community or society they are embedded in.

4.4.2. Bonding and bridging social capital

Drawing on Granovetter, Robert Putnam (2001) describes what sorts of relationships weak and strong ties are associated with (pp. 22)[34]. Strong ties are associated with *bonding social capital,* also termed exclusive social capital. Bonding social capital is inward looking and thus reinforces exclusive identities within rather homogeneous groups. It does so by establishing relationships built on specific reciprocities following patterns that are specific to the group. Through the emergence of strong in-group loyalty it facilitates strong notions of solidarity among members. Weak ties on the other hand are associated with *bridging social capital*. It

[34] Putnam credits Gittell and Vidal (1998) for the introduction of the bridging-bonding distinction.

has a strong inclusive perspective, consisting of connections across societal cleavages existing between groups. These connections function through an understanding of generalised reciprocity that is not based in specific loyalty formulations to group members, but more widely encompassing. They facilitate the dissemination of information and the opening of new access channels. While both forms have significant roles to play, bridging social capital is allegedly associated with higher levels of progress and future orientations (p. 23).

The distinction between bonding and bridging social capital is not always a rigid one. Certain overlaps may exist. David Halpern (2005) points to the interesting findings that relatively high correlations between the level of bonding and bridging social capital tend to be observed. He suggests that the distinction might not be as important therefore as sometimes propagated (p. 21), but admits that they do not follow the exact same processes. Bonding social capital for example appears to be much more robust than bridging social capital which tends to decay faster (p. 22). Also, a group operating within a bonding social capital framework may well be trying to be inclusive in certain domains and able to engage in more bridging activities, once a stable base has been established (Putnam 2001, pp. 23).

Notions such as solidarity and social integration convey a very positive image of social capital. However, the emergence of social capital is not always associated with positive effects. What several authors termed the *dark side* of social capital (Castiglione 2008) illustrates situations in which the establishment of strong relations might be of benefit for certain individuals or groups, but detrimental for larger communities. An often mentioned example is that of the Italian Mafia, an organisation with high levels of in-group solidarity, strong network ties and strong generalised reciprocity. While being able to exploit the benefits of this for themselves, they cause great negative externalities for society. The example reminds us of Bourdieu (1986) and his understanding of social capital as an instrument used by groups to manifest their power against others, although the power hierarchy and group struggle assumptions are not explicitly necessary here.

The above example illustrates though that not all forms of social capital might be equally prone to result in negative externalities (Warren 2008). The Mafia example

clearly represents a case of strong bonding social capital without significant bridging reach. Putnam (2001) acknowledges this in his account, seeing bonding social capital as potentially (though not always) more likely to generate such outcomes. Mark Warren (2008) confirms this view and qualifies it further:

> "Some kinds of social capital – those based on particularized trust and reciprocity – have greater potential to generate negative externalities for non-members than those based on generalized trust and reciprocity." (p. 147)

Following his approach potential negative effects of bonding social capital could be offset through bridging forms and a facilitation through democratic processes in the resource distribution (pp. 144).

The distinction between bonding and bridging social capital therefore has to be considered of elementary importance. Woolcock and Narayan (2000) demonstrate its applicability in a discussion of communities within development contexts. They characterise communities according to their endowment in intracommunity (bonding) and intercommunity (bridging) ties (p. 231). In doing so they are able to demonstrate the usefulness of different combinations of social capital depending on the context. While strong intracommunity ties supported the establishment of common identities and purpose, usually at later stages the development of intercommunity relations made it possible to face and overcome differences based on cleavages such as religion or class.

To summarize, social capital can be analysed according to the nature of the relationships it embodies. Understanding the type of ties creating it is crucial as different outcomes can be expected depending on the bonding or bridging nature of social capital. While both can be beneficial for individuals and society, bonding types are more likely to produce negative externalities. Weak ties are of great importance as they can overcome certain deficiencies otherwise existing. Barry Wellman (1979) devised a conceptualisation illustrating this well. While weak ties might originally be associated with a loss in solidarity and traditional group identities (*community lost*), certain forms of community, in particular non-governmental support structures, will

remain based on strong tie relationships (*community saved*) even in less traditional settings. Beyond the small-scale community weak ties then have the chance to enable people to gain access to a variety of new networks, previously not within their reach, establishing new forms of interactions within society and potentially positive outcomes (*community liberated*).

4.5. Questioning social capital

So far the work presented has mainly been supportive of the use of social capital as a valuable social scientific concept. Of course there are more sceptical perspectives questioning the approach. The most general criticism is that social capital is too wide a term and not yielding any convergence in discussion (Fischer 2001). At this general level it can easily be countered with arguments that convergence in discussion is not necessary for a concept to be accepted in the debate and that indeed an approach can have several different sub-divisions without necessarily being conceptually weak (Castiglione 2008). A more detailed discussion of criticisms is necessary in order to understand its limitations and potential solutions to them. This discussion will be split into two parts. First, the major arguments criticising the logic of social capital as being circular in its functional definition will be examined. Second, arguments criticising the validity of social capital as an independent concept and its alleged cultural ignorance will be evaluated.

4.5.1. Criticising the functional approach to social capital

In their review Baron et al. (2000) identify the issue of circularity as one of the most important problems in social capital definitions. Essentially the criticism is that functional effects of social capital are part of the definitions. Social capital then is present where a good outcome is observed, as this outcome is defined as being associated with social capital (Portes 1998). As such, this outcome is thus a defining factor as well as result of social capital: a tautology (Durlauf 1999). Indeed, a concept in which social capital would be indistinguishable from the effects it is supposed to cause would have to be rejected (Lin 2001). Arguments along the line of ‘there are high levels of solidarity in a community, therefore there must have been a high level of social capital existing, and therefore high levels of community solidarity will be maintained’, are insufficient.

This does not mean that the relationship has to be mono-causal. Of course the outcomes of social capital may in turn influence social capital formation (Lin 2001).

Indeed, many authors explicitly state that taking endogeneity[35] factors into account regarding social capital is necessary for its understanding. Taking this into consideration can help to solve the problems related to circularity-weakened approaches (Baron et al. 2000). However, it is not sufficient to notice the problem (Durlauf 2002): it is crucial to establish a clear distinction between the structural and the functional aspects of the concept, as otherwise no model could actually account for the acknowledged endogeneity effects (Lin 2001).

Especially at the collective level, social capital is often employed within causal notions (such as creating certain societal support structures, trust, etc.). Different from individual level analyses the exact relationship between cause and effect needs to be explored (Portes 2000). If used in terms that are too vague and wide the heuristic value of the concept gets diminished. Portes (1998) formulates four requirements for social capital at the collective level to be considerab a social scientific concept: i) distinguishing the definition from the effects, ii) establishing directionality controls, iii) controlling for other factors influencing social capital potentially and iv) identifying historical origins of social capital in a community (pp. 20).

The criticisms of circular definitions of social capital, as presented above, are valid and important. Approaches based on such essentially flawed foundations should not be used when establishing theories of social capital. However, none of the authors suggest that social capital generally should be rejected because of this. Distinguishing sufficiently between the different elements of the concept and understanding the endogenous nature of the relationship between causes and effects could qualify the concept sufficiently.

[35] Endogeneity refers to possibilities of incorrectly identified causal paths. Two elementary types exist: Reverse causality may apply when the affected outcome may in turn influence the cause again and prior variables may partially determine the predictor of that outcome and should be taken into account to identify the precise operating mechanism.

4.5.2. Doubting the validity of social capital

Even when accepting endogeneity concerns and including them in any social capital analysis, the concept might still be deficient. While the inclusion of relevant considerations may suffice to appropriately model the simple relationship between social capital and the investigated outcome, this does not provide clear evidence about social capital being an independent variable. It could be that in itself it is just the outcome of prior causal forces (Durlauf 2002). Fischer (2001) criticises social capital as a "dreadful metaphor" (p. 3) that blurs other, actually decisive factors (such as family, sociability, trust) into one mixture that does not add understanding but takes away from it. If the different elements of social capital really belong together conceptually, they should result in common behavioural types, which can be highly doubted considering the multitude of elements (trust, participation, etc.), Fischer argues. He stipulates that social capital provides sociologists with the ability to play in the "sandbox of economists" (p. 3) and therefore harms proper sociological approaches. What Putnam (1995, 2001) describes as a decline in social capital or civic erosion Fischer suggests does not require a new term but should simply be called 'individualism', defined as preferring individual over group interests (p. 6).

Not only might potentially neglected causes of social capital hamper its status as an independent concept, but additionally the impact of significant control factors could do so as well (Portes 2000). Portes summarises the social capital argument based on Putnam as certain structural factors (such as trust and associational membership) leading to greater civicness (synonymous with collective social capital) and thus further leading to better political outcomes. However, these outcomes as well as the structural conditions for social capital may actually be caused by other factors (such as educational levels of the population, average income or past levels of democratic struggles). Those exogenous factors could also affect the relationship between social capital and its outcomes as control variables thus potentially rendering the originally observed effects as spurious (p. 6). Portes presents an example looking at parent-children relationships where this is indeed the case (pp. 7). The careful consideration of prior and control variables when dealing with social capital thus becomes imperative.

Ben Fine's critique of social capital (2001) presents a very fierce analysis of the concept. He goes beyond questioning social capital in terms of its appropriateness within model settings, but alludes to its emergence within the discourse. Like Fischer, Fine sees social capital as a way for traditional economics to colonise other social scientific disciplines (2001, p. 15) after having expelled political economy from the discussion and thus relying uncritically on the imperfect methods neoclassic economics builds on. Social capital then presents itself with the ability to re-incorporate the social into economic theory, but will never be able to achieve this, as the rational-actor, individual-based profit maximisation assumptions used within economics cannot be reconciled with an actual social approach (pp. 17). So the ascribed function of social capital proponents to move beyond economics is just a mask raising the acceptance for economic principles in other social sciences. Social capital then, in connection to other capital forms and the theories describing them, could be understood as an instrument used by purveyors of neo-liberal economic theories to increase the impact of their approaches.

Not all critics reject social capital approaches in as drastic a fashion as Fine does. Durlauf presents a critical account (2002) but formulates requirements that would allow social capital to qualify as a concept. At the individual level the nature of social capital as independent variable needs to be established finding that other factors do not influence the outcomes directly while at the aggregate level social capital effects have to be demonstrated as robust taking into account all relevant control variables. It is unlikely that critics like Ben Fine would be satisfied with such an answer. Social capital in his perspective is not merely flawed in its variable construct (2001), but represents a discourse neglecting political economy while imposing economic axioms on other disciplines, creating an image of going beyond those axioms, but actually enforcing human capital theories, as it neglects the important issues of social construction of the discourse (pp. 97). This greatly affects public policy as he presents in his account of the development from the Washington to the post-Washington consensus with critical effects regarding development policy (p. 131). Indeed, several development strategies, especially under guidance of the World Bank (pp. 155), are based on social capital principles and have fallen short on a number of occasions of the effects aimed at (Portes & Landolt 2000).

An absolute critique of social capital such as presented by Ben Fine is difficult to approach. While surely pointing to certain significant developments within the academic world it remains somewhat questionable whether all his criticisms of the social sciences should be attributed to social capital and whether this in turn defeats all use of the concept. Michael Woolcock (2001) presents some interesting counter-considerations. The perspective of economics colonising the social sciences is one-sided. Social capital could be seen as a way of other approaches to re-inform economics. But most importantly the question is whether it makes sense to place all of economics (apart from political economy) against the rest of the social sciences or whether the notion of proper interdisciplinary research should not consider all perspectives equally and seek their integration where sensible and meaningful (pp. 74). Furthermore, while acknowledging negative effects of social capital in development strategies most criticisms neglect the important changes it has made to the discussion about development, creating new focus points that were not considered relevant before.

In general, a more distinguished view is required for an applicable critique. Strong criticisms often treat all social capital theories as if they were generally interchangeable. However, they clearly address a variety of questions as shown above. Fischer (2001) for example bases his general critique of social capital on the account of Putnam only, neglecting criticisms of other social capital theorists against Putnam's approach as being too much based on associational membership and traditional value structures (Field 2003). Fine (2001) discusses the different approaches partially, but does not take sufficient account of the variety of approaches, in particular those that take a distinct starting point to other capital theories (as for example Ahn & Ostrom 2008). Criticisms towards the Western cultural domination of social capital as a concept should be taken seriously in particular with regards to its application in development. At the same time, while certain problems in research across cultures may exist currently, this is not to say that none of these can be overcome (Woolcock 2001) when careful analyses are undertaken. Indeed some authors suggest a very culturally imperialistic notion in which low amounts of social capital are used as an indication of developmental inabilities (Fukuyama 1995, 2001). Such approaches provide only limited accounts

of social capital though and cannot be used to sufficiently discredit decidedly more sensitive concepts (Baron et al. 2000). Furthermore, a distinction between approaches understanding social capital as an instrument of analysis and those explicating it as an aim is required to arrive at proper evaluations of the respective claims that are stipulated.

It should also not be considered as a reason to discard the concept within a homogeneous cultural context, in particular the one it emerged in. Here the dominant question remains whether the concept is an independent one and not blurring actual effects and neglecting important control forces (Woolcock 2001). The criticism has to be taken seriously and any model should incorporate such relevant factors. Although highly doubtful of the outcome, this approach would be in accordance with the requirements formulated by critics (Durlauf 2002; Portes 2000). Social capital could then be employed as an analytical tool, as long as it does not preclude the results in the approach and could accept that other factors than social capital itself may be the shaping forces.

Taking these thoughts into consideration, the use of social capital as an analytical tool is not problematic *per se*. The restrictions outlined above have to be considered which will be done in the further analyses presented. Where limitations occur these need to be taken into account for any interpretation of results originating from the analysis. Most importantly, the distinctions between different approaches to social capital need to be reflected on to allow for a clear understanding of where deficiencies may be detected exactly potentially rendering some approaches more appropriate than others. In the following section a system for conceptualising social capital will be presented, based on the reviews presented above. This system will provide the foundation for operationalisation and analyses throughout this project when using social capital as a concept.

4.6. A system of social capital conceptualisations

The two major distinctions regarding social capital concepts appear to be the question of the location of social capital at the individual or collective level and the differentiation of bridging and bonding social capital. To begin with, any characterisation of the concept should set out the structures that social capital is considered to be embedded in, to avoid the circularity trap of functional definitions as explained above. Figure 1 summarises the structural differences between the four distinct types of social capital that emerge from the two dimensions. The individual notions of social capital are closest to economic theories and characterise actors as rational and investment-return oriented. When social capital is understood as a collective characteristic first, society is a more important unit of analysis to conceptualise the involved processes. Either approach could be applied to settings that are based on close connections between individuals and thus more localised relationships or on wider connections that are less restricted and could therefore span globally. Consequentially the four emergent structural types of social capital could be distinguished as *localised economic actors, localised society, globalised economic actors and globalised society.*

As they do not make judgements regarding outcomes of social capital as beneficial or negative or stipulate specific results at all, control and prior variables are not included in this system, though they should be part of any analyses that employ social capital. Here the rationale is to conceptualize the differences in foundational structures of social capital to include them in later analyses where they can be tested separately for their robustness and validity, taking other factors into account.

Social capital is then not treated as an aim in this project but a potential instrument of analysis. After the operationalisation of the concepts they can be investigated with regards to their applicability and relevance to the research foci distinctively. The concerns presented in the criticism section of this chapter will be applied there.

		Reach of Social Capital	
		Bonding	Bridging
Level of social capital	Individual	**Localised economic actors** i. Individual ownership and use ii. Purposeful investment iii. Specific reciprocity/ trust iv. Strong ties (in-group) v. Aggregation of individual capital	**Globalised economic actors** i. Individual ownership and use ii. Purposeful investment iii. Generalized reciprocity/ trust iv. Weak ties (out-group) v. Aggregation of individual capital
	Collective	**Localised society** i. Collective ownership and use ii. Institutions and norms iii. Specific reciprocity/ trust iv. Strong ties (in-group) v. Public good character	**Globalised society** i. Collective ownership and use ii. Institutions and norms iii. Generalized reciprocity/ trust iv. Weak ties (out-group) v. Public good character

i. Possession of social capital
ii. Origin of social capital relations
iii. Rationale for social capital relations
iv. Nature of ties
v. Understanding of social capital of a society

Figure 4.1: Conceptualisations of social capital

4.7. The measurement of social capital

4.7.1. General considerations

Considering the variety in conceptions and definitions of social capital it is not surprising that these are reflected in the debate about the measurement of it as well. This can pose problems in particular when using the concept interchangeably for comparisons that were undertaken with different conceptions of it where authors pick and choose certain elements without proper theoretical foundations (Sabatini 2006). At the same time though, when used in a methodologically sound way, it provides the opportunity to represent and contrast the different structural manifestations and levels social capital can be distinguished by (van Deth 2008).

Proceeding according to the latter perspective, van Deth (2003, 2008) argues that the differences in measures employed are not actually as varied as the multitude of conceptualisations would suggest. Identifying commonalities between different approaches and properly distinguishing their underlying dimensions allows for an understanding of how certain indicators are used to describe the existing approaches. While initial empirical studies of social capital employed functional definitions (Coleman 1988), most authors agree that in order to avoid circularity measurement clearly has to differentiate between structure and function (PRI 2005; Stone 2001; Lin 2001) – with structures measured as constituents of social capital and functions understood as outcomes – (Baron et al. 2000; Durlauf 1999; Portes 1998), as discussed above.

Comprehensive classifications of quantitative and qualitative measures of social capital employ a distinction between the collective and the individual level reflecting the important differences that exist depending on whether social capital is understood to be a resource that individuals or communities and societies hold. Further dimensions vary in label but generally tend to reflect differences between measures of network composition and measures of dynamics.

Table 4.1: Frameworks for the measurement of social capital structures

<table>
<tr><th></th><th></th><th>Network composition</th><th colspan="2">Dynamics</th></tr>
<tr><td>van Deth 2003, 2008</td><td rowspan="4">Distinguish collective and individual level</td><td>Structural: networks</td><td colspan="2">Cultural: norms, values, trust</td></tr>
<tr><td>Paxton 1999</td><td>Objective associations: actual connections</td><td colspan="2">Subjective nature of ties: reciprocity, trusting, emotions</td></tr>
<tr><td rowspan="2">PRI 2005b</td><td rowspan="2">Presence of social capital</td><td colspan="2">Functioning of social capital</td></tr>
<tr><td>Network dynamics</td><td>External contexts</td></tr>
</table>

Table 1 provides a summary of some well-developed frameworks for measures of social capital structures.[36] All share the level of social capital distinction[37] and group the indicators then according to the two dimensions outlined. Generally, the network composition refers to the set-up of the networks, reflecting such diverse characteristics such as densities, frequencies, duration orientations, tie structures, etc. The dynamics of the networks refer to internal factors as well as contextual ones and reflect prevailing norms, values and trust orientations in connection to prevailing social processes within societies (van Deth 2003; 2008; Paxton 1999; PRI 2005b).

The dominant method to obtain data is the use of surveys (van Deth 2008, Sabatini 2006). With improvements in survey instruments it is possible to draw on elaborate batteries of questions overcoming previous problems of inferring social capital notions from items designed to measure other things (van Deth 2003). Growing sophistication in such survey instruments and large samples allow for investigations of specific groups as well as more general trends in cross-country comparative perspective (Woolcock 2001). The following sections will therefore discuss more specifically the instruments employed in survey based research to identify important

[36] The list does not intend to present an exhaustive account of social capital measurement frameworks (see for example Stone 2001 or Esser 2008). The examples were chosen because of their applicability to a wider range of measurement approaches and because of their good reflection of the different dimensions social capital is found to be operating on.
[37] The PRI 2005b framework distinguishes the collective domain further by intra- and inter-organizational networks.

issues that should be considered when developing models using the multitude of indicators available.

However, social capital research is not limited to survey-based approaches and can gain much from a range of qualitative and mixed-method study designs. Recalling the orientation of social capital to explain dynamics within certain areas and communities, it is not surprising that originally research has been done through a variety of community studies, including the foundational work of James Coleman (1988). More recently Roche (2004) suggests the development of elaborate social capital tools at local level based on the detailed assessment of four British boroughs. Additionally, (quasi-) experimental studies, using for example simulation models (Knack & Keefer 1997) have been used to explore dynamics connected to social capital processes in different contexts.

While survey-based measures lose certain information through processes of aggregation (Sabatini 2006) the other methods presented show limitations that pose severe limitations regarding comprehensive measurements, in particular when focusing on large-scale policy development. Experimental studies rest on very strong assumptions that simplify complex processes quite drastically (van Deth 2008). Smaller-scale projects may be indeed the most appropriate instrument for research focused at local processes, but do not suffice for generalisation to aggregate levels required for cross-country comparisons on their own.

4.7.2. Measuring social capital at the individual level through surveys

While the concept of social capital is multifaceted and elaborate frameworks have been developed regarding meaning and measurement, in practice a wide range of scholars relies on one indicator to model social capital: trust, in particular social or generalised trust, meaning not trust in particular groups, but people in general. What seems like a gross simplification, appears to work well empirically at first sight (Halpern 2005), finding a strong correlation ($r > 0.8$), between social trust as measured by a single survey question and the value for Robert Putnam's 14-item Social Capital Index (2001).[38] While indices provide an apparent objectivity in

[38] A discussion of the index can be found in the aggregate measures section.

comparative studies, they may mask compositional differences in social capital formation, therefore simple, closely related measures, such as generalised trust, may be more useful as they can be more readily employed comparatively and investigated for systematic differences (Halpern 2005).

However, while trust surely is one of the most important concepts in social capital discussions, it is not sufficient to describe the different structural manifestations of the concept. A similar level of generalised trust may still go in hand with different networks of ties, thus leading to different outcomes. Basing complex models on assumptions that are too simple and presuppose too much will not be helpful in developing social capital as a useful concept, capturing a wider range of dimensions (Baron et al. 2000).

Within more elaborate measurement approaches, the role of trust has to be considered carefully. Stone (2001) argues strongly for a distinguishing approach to different types of trust and reciprocity orientations. Besides generalised and specific trust, trust in different sort of institutions should be considered as a separate domain (Paxton 1999) and where possible, measures of reciprocity expectations should be considered additionally and not only assumed to be identical with the respective trust dimension.

While trust and reciprocity, probably in the context of other attitudes, represent the dynamics within a respective network, the measurement of the composition requires separate indicators. A common starting point is to look at membership in voluntary associations, a perspective strongly advocated by Putnam (1993). A perspective based on membership only though has severe limitations (Sabatini 2006). Membership alone would not distinguish between bonding and bridging effects and could therefore also represent forms of social networks that only provide social capital advantages for small restricted groups to the detriment of others (Warren 2008). More important than absolute membership could be measures of connectedness, represented by how many associations of different type people are members of, meaning how heterogeneous their networks become. Certain types of associations could then be identified to show higher and lower levels in connectedness of their members (Paxton 2007), providing a useful qualification.

Exploring distinctions in the types of networks people are involved in may further help to overcome the problem of an emphasis on strong ties and better assess individuals' positions within networks (Lin 2008). Based on a factor analysis Sabatini (2006) suggests a four-fold typology of networks: informal networks of family ties, informal/weak ties bridging and connecting friends, formal connections through voluntary associations and formal networks of activists in political parties (pp. 22). While the exact composition allows for discussion, especially regarding the rather specialised emphasis of the last category, it becomes clear that simple associational membership summation approaches could not capture these differences alone.

Regarding individual social capital van der Gaag et al. (2004) suggest focussing on whether a person has access to a particular group of people, rather than looking at magnitudes within limited typologies of associations. Using a battery of questions asking "Do you know anyone who…?" about different people with different skills, they find four dimensions of relations that individuals distinguish: prestige, information, skills and support. The respective scales work differently in socio-economic comparisons illustrating the significance of distinct assessments of the structure of ties people have.

Relating the compositional characteristics back to indicators of trust and reciprocity clarifies why a reliance on trust or similar, often used, one-dimensional perspectives on social capital (van Deth 2008) are too limited. Newton (2001) shows that trust is not closely related to supposed outcomes at the individual level and clearly does not suffice to capture the compositional effects of networks. More distinguished approaches deepen the understanding of the processes associated with social capital and allows us to define the frames of structure versus function better, which is crucial when trying to investigate causal relationships and relevant contextualising factors (Stone 2001).

4.7.3. Measuring social capital at the aggregate level

Social capital at the collective level is of greater importance than just investigating the role it plays for individuals, especially in policy related studies. When comparing

regions, often inverse indicators are employed, comparing such characteristics as for example (absence of) crime (van Deth 2008). Such a use poses significant problems, as it blurs the structural-functional distinction and equates social capital with particular outcomes (such as crime rate trends) and thus presupposing unjustified assumptions (Sabatini 2006). This of course is not limited to inverse measures, but also applies to other functional community measures (Portes 2000, Durlauf 2002) such as educational levels or socio-demographic characteristics, which could be understood as control or intervening factors, or outcomes, but should remain distinct from structural compositions.

Looking at one of the most famous indices used to distinguish social capital levels between regions, namely Robert Putnam's Social Capital Index (2001), illustrates this problem as well as other issues associated with aggregate measures. The index consists of 14 items that all are highly (r ranges from 0.66 to 0.92) correlated. Several of these items represent functional orientations rather than structural ones. Putnam closely associates social capital with his concept of civicness that he developed since his study of regional differences in socio-economic success in Italy (1993). Therefore indicators such as voting turnout or attendance rates for public meeting on local matters are included in the index. These measures however reflect the assumption that social capital has a particular effect that it has to lead to such forms of engagement and participation. This matter of course can be highly contested (see for example Fischer 2001 and Boggs 2001) and the Social Capital Index must face criticisms of circular reasoning because of its lack of effect-outcome distinction.[39]

Furthermore, Putnam's use of associational membership does not distinguish bridging and bonding effects sufficiently. Thus, indicators such as mean numbers of club meetings attended or mean group memberships aggregate characteristics that are already problematic at the individual level (see discussion above). This shows the next problem regional or country measures face: the question of whether the aggregation of individual level data is appropriate and to what extent it can be used

[39] Based on this critique the far-reaching claims put forward by Putnam (1995, 2001) about a decline in social capital in the USA have to be carefully reassessed, because what he measures a decline in has to be understood as a very particular, functional concept of social capital.

in conjunction with original aggregate level data (Baron et al. 2000). Putnam uses both types, aggregations of generalised trust as well as the number of non-profit organisations per 1000 people for example, without any distinction. In particular regarding the aggregation of trust controversies have arisen (van Deth 2003). However, if it can be shown that there are additional effects by considering trust at the aggregate level, its use can be defended and should certainly be considered, as it is plausible that societal levels of trust set frames for individuals in their evaluations of it. Newton (2001) has shown that indeed aggregate trust levels might have effects where individual level trust does not and Paxton (2007) finds a significant variation in trust at the aggregate level that is not captured by individual-level measures. To be rigorous, any aggregated instrument should be investigated in that manner to check for its feasibility which Paxton (1999, 2007) also demonstrates well for her measures of connectedness at both levels.

In the discussion of communities or countries social capital measures should of course not be considered in isolation. Socio-economic control factors do not just play a role at the individual level, but also at the aggregate one. Many structural indicators are related to demographic characteristics, such as age structures, but also to the economic and political situation or cultural contexts (Sabatini 2006; Paxton 2007; Portes & Landholt 2000). A careful consideration of the potential correlates and prior factors (Portes 2000) depending on the respective question under investigation is imperative to be able to identify social capital relations appropriately.

4.7.4. Summary

Measuring social capital properly requires a structural approach to avoid circularity traps. In order to be able to assess the system of social capital characteristics sufficiently individual and aggregate measures are necessary. Indicators of composition and dynamics need to be distinguished and attention has to be paid to the detail required for each one (for example whether associational membership is sufficient or types of associations need to be distinguished). Furthermore, aggregating individual measures may be useful to include influential context factors, but needs to be assessed accordingly. Both at the individual and aggregate level it

is crucial to identify relevant control and prior variables to isolate social capital effects. While limitations will apply in the application of these standards based on the survey instruments available, in particular in cross-national research, it is important to consider these criteria as closely as possible in order to locate the relationship between social capital structures and the objects under investigation. Additionally, only when employing a rigorous approach can endogeneity relations be investigated and better statements about causality assumptions made.

The following chapter will first present a review of literature identifying important links between social capital, unemployment and life-satisfaction and establishing the conceptual model of how we can meaningfully reflect social structures through social capital concepts to contextualise the unemployment and life-satisfaction relationship. After this the operationalisation of social capital for this study will be presented, reflecting, differences between aggregate and individual levels, taking account of trust and reciprocity norms as well as distinguishing between different types of associational connectedness – all referring to the conceptual framework outlined in figure 4.1.

5. Locating unemployment and life-satisfaction in social structures using social capital

5.1. Empirical links between well-being, unemployment and social capital

As explored in chapter 3, there is a complex relationship between unemployment and life-satisfaction. While robustly negative, it is moderated by contextual variables meaning that it cannot be understood without exploring a person's environment. In this chapter the analysis will be extended to introduce variables that capture differences in the social structure of individuals are situated in within their countries systematically, using social capital to model structures affecting the unemployment and life-satisfaction relationship. In this section the key results from previous research are reviewed to highlight why social capital is a meaningful moderator of this relationship. First, studies investigating the role of social capital for well-being will be discussed, to then focus on the importance of social capital as a determining factor in unemployment probabilities.

5.1.1. Identifying connections between social capital and well-being

Social capital (in a localised, strong-tie based understanding as existing relationships between people in a community) is found to have positive effects for individuals' well-being. This applies to more tangible approaches to well-being, such as health (Helliwell 2001, pp. 49), even when controlling for endogeneity effects, but also for self-perception measures, such as cognitive evaluations of subjective well-being (Helliwell & Putnam 2004). These positive relationships do not only apply directly between social capital and well-being, but also through indirect mechanisms. Negative effects of inequality on individual health situations can for example be partially moderated through social capital resources (Kawachi et al. 1997; Helliwell 2001,).

While those findings are relevant for individuals, concepts of inequality emphasise the relation to the collective aspects of social capital relations. Integrating individual and community based indicators Helliwell & Putnam (2004) show robust positive relationships of several individual and aggregate level social capital measures with life-satisfaction and health, although numerous socio-economic controls are used.

However, as demonstrated in the chapter on conceptualising social capital, the concept can be approached from multiple perspectives. While this study incorporates both levels social capital can be located at, the measures employed reflect a strong bonding, localising orientation[40]. Conclusions drawn based on such particularised conceptions cannot capture the variety of significant social relations.

Flap & Völker (2001) convincingly demonstrate this point. Investigating self-perceived satisfaction evaluations within work situation contexts, they find that different types of networks are associated with different aspects of well-being. They find that social capital does not affect all domains of satisfaction. While *strategic, work-related ties* for example support satisfaction with instrumental aspects such as income and security, *closed networks of identity-based solidarity* are associated with increased satisfaction of subjective evaluations of the work environment and process. Also, exclusive *bow-tie networks* with strong distances between separate bonding groups can have negative satisfaction effects. Accordingly, frameworks conducive to certain social capital structures can have positive or negative effects on subjective well-being.

Such a distinction is not only important at the individual, but also the aggregate level. Using data from 32 countries, Bjørnskov (2003) finds a strong relationship between social capital and national levels of subjective well-being. Social capital remains a stable predictor of national well-being, even when using socio-economic and political controls (such as democratisation, unemployment rates or institutional quality). However, two problems have to be considered: First, the sample includes countries from Europe, the Americas and Asia, disregarding the significant different cultural conceptions of the concept of well-being in particular regarding Asian countries (Lu & Gilmour 2004; Uchida et al. 2004). Second, social capital is operationalized as an index,[41] thus offering no distinction between bonding and

[40] At the individual level social capital is referred to in terms of marriage, family structures, ties to friends and neighbours, workplace ties, civic engagement and trust – showing an under-representation of bonding social capital characteristics or a non-distinguishing approach. This applies similarly to the aggregate characteristics (average association membership, average trust, average importance of god/religion and governance quality), where in particular the non-distinction between different types of associations poses a known problem (Paxton 2007). Putnam's social capital analyses have been criticised extensively (Fischer 2001; Boggs 2001) for this.

[41] Incorporating generalised trust, civic participation and perceived corruption

bridging social capital orientations. Extending the sample size adding more countries (not addressing the cultural difference concerns), Ram (2010) finds the relationship to become insignificant. However, social capital in that analysis is further simplified, understood as synonymous to trust. While closely related to certain understandings of social capital[42] and therefore often employed, trust on its own cannot reflect the different types of social capital relations (as discussed in chapter 4). Ram's study remains interesting nevertheless, as it further alludes to the importance of contextualising social capital and happiness relationships appropriately: While measures of material provisions were strong explanatory factors in lower-income countries, the trust domain of social capital can be found to be significant for high-income countries regarding aggregate levels of subjective well-being.

In summary, there are several indications suggesting a relation between social capital and subjective well-being. Most of the analyses reflecting this however focus on particularised notions of social capital and do not capture the variety of relationships social capital and happiness can be connected to. Contextual factors and differences in networks under investigation are imperative however when aiming to not only understand how social capital and happiness relate to each other, but also how this relationship affects the framework of concern. Social capital concepts allow us to locate life-satisfaction evaluations distinctively at individual and aggregate levels, permitting a differentiating analysis.

5.1.2. Personal social capital and employment chances

When looking for a job people make use of institutionalised job search mechanisms (such as those provided through employment agencies) as well as contacts in their social networks. Having a wider stock of individual social capital could therefore be expected to increase chances of finding employment for a person, in particular when providing bridging effects and thus establishing new contacts, previously not available to them (Flap & Völker 2004). Indeed, job search through networks is found to be generally productive and its use has been increasing. Chances of being employed for example can be higher when having received the information about the job through current employees (Calvó-Armengol & Ioannides 2005).

[42] Such as Putnam's Social Capital Indicator (Halpern 2005)

However, distinctions have to be made regarding who is able to utilise social capital in what ways during job search. Status attainment as a determining mechanism in labour market processes is largely dependent on initial positions within the hierarchies of social networks (Lin 1999). Gaining access to networks associated with higher status is most important for those less well positioned in the first place. Having access or not then is the prior criterion to evaluating the quality and extent of networks (Flap 2004). Accordingly, initial structural conditions of apparently small importance may have asymmetrically large effects regarding the success in being able to individually utilise social capital resources. The extent and quality of the use of social networks in job search processes both vary significantly between different socio-demographic groups (Calvó-Armengol & Ioannides 2005). This is of particular importance when job attainment proceeds extensively through localised, bonding modes of social capital relations, potentially creating homogeneous, closed groups that are hard for non-members to enter because of the groups' homogeneity.

However, even when having access to a particular network, the use of social network resources may not always be conducive to gaining employment either. Taking into account endogenous effects Bentolina et al. (2003) show that attaining a job through networks may reduce advantages gained in more open market based processes. In Europe, for example, they find that workers tend to take up jobs faster when they are offered through social networks, and thus not explore all their opportunities based on their comparative advantages: People integrated in networks may be more likely to find employment, but it might not be the one with the highest personal wage. Fontaine (2004) suggests that the main advantage lies with the employers who save resources in their recruitment and obtain additional information not available through open market mechanisms, while job seekers may be disadvantaged through congestion effects when an overemphasis is placed on social networks in job search.

A study by Delattre & Sabatier (2004) further develops the points made above. Originally, people with more social capital, and higher levels of utilising it, tend to have higher wages. At the same time higher wages are (non-surprisingly) found for people who on average are more educated and have a more affluent family

background. Those factors could explain selection biases within social capital networks – people from certain backgrounds (that are in themselves associated with higher wages) simply having better access to social networks. Taking into account these factors the initial relationship is reversed: higher usage of networks actually is associated with lower wages.

Individual level social capital then can be used to understand a variety of processes regarding the success of job search approaches. While useful under some circumstances, it can be inhibitory in others and is sensitive to important socio-economic selection biases that can be identified when investigating job attainment paths. In the analyses presented in this chapter, the effects of unemployment will therefore be placed in the social capital context of a person, distinguishing between more bonding and bridging forms thereof. Additionally, both for the social capital variables and unemployment itself, self-selection biases will be accounted for by predicting these factors by differences in income and education of the respective persons.

5.1.3. Societal network structures and unemployment

Neo-classic economic approaches emphasise the role of market interactions and are critical about state intervention as it may distort optimal market processes. Scheepers et al. (2002) illustrate this point in an analysis suggesting that people in more welfare state based regimes (as opposed to liberal market regimes) have lower levels of social capital. By taking on a more extensive role, the state replaces processes that could otherwise be organised through individual social interactions. The study in itself has some methodological weaknesses, in particular a restricted sample size and a very limited, localised[43], definition of social capital. More importantly though, there are a number of empirical studies that present striking counter-evidence.

The Scandinavian countries pose a particular paradox according to this approach, as they have high levels of state intervention through a large variety of welfare and benefit mechanisms, but also high levels of generalised trust and other indicators of

[43] Equating social capital as contacts with friends and family.

several social capital domains. In an insightful analysis Kumlin & Rothstein (2005) deal with this apparent paradox by showing that welfare intervention does not have to be detrimental to economic productivity or civil society social relations. They emphasise the incorporation of the role of state institutions into social capital investigations as opposed to relying on strongly bottom-up based perspectives as advocated by Putnam (2001). In doing so, they show that welfare institutions are not homogeneous: Those that require strong needs-testing, or significant rule adjudication by bureaucrats, appear to lower trust, as they incentivise inaccurate disclosure and self-reporting, leading to generalisations about other people's behaviour (p. 349). On the other hand universal welfare institutions show no such effect – trust levels do not decrease for users and the acclaimed negative effects of welfare interventions on social structures are not observed. Considering that the dominant mode of welfare provision in Scandinavian countries is through universal institutions, the apparent paradox disappears.

Following on from this, the assumption that welfare regimes make life too easy for the unemployed and will thus reduce incentives to personally get engaged must be called into question. Cahuc & Fontaine (2002) show that the intensity of job search efforts does not decrease when states have greater welfare provisions. On the contrary, when designed well, they can incentivise job seekers to use the most efficient channels (pp. 18) and reduce some of the congestion effects of overused social networks in recruitment processes (Fontaine 2004). The monetary value of benefits is not a sufficient replacement for all the positive effects that employment brings in most contexts (as discussed in chapter 3). Social capital then is not only relevant as an individual-level characteristic with regards to evaluations of unemployment probabilities. Network structures at societal level may also influence the processes employment and unemployment are embedded in.

5.1.4. Summary

It is clear that both unemployment and well-being are related to individual- and societal-level manifestations of social capital. Personal endowments of social capital relations affect chances of employment in the first place, but are partially biased by socio-economic predispositions. Aggregate societal structures matter beyond what

traditional micro-economic approaches would suggest and should be considered when aiming to relate social network relations to the well-being of individuals. Taking these findings into account one might be tempted to think that personal social capital resources may help in reducing the negative effect of unemployment on life-satisfaction, by presenting a supportive network. However, this would be too simplistic. First, just because networks may facilitate job search processes does not mean that they help reduce the negative subjective experience associated with unemployment. Indeed, some empricial studies confirm that networks have no such effect on the experience of unemployment (see for example Winkelmann 2009[44]). The analyses in this chapter will therefore aim to not presume any effects of social capital but investigate the interactions between different manifestations thereof at the individual and country-level with the unemployment and life-satisfaction relationship, taking into account the concerns regarding selection biases and the differentiation between social capital network compositions. The effects of unemployment for an individual will therefore be modelled taking into account the personal configurations of social capital for that individual as well as the prevalence of social capital in the country the individual lives in.

[44] Some caution should be applied with regards to any generalisations based on this finding, as the social capital operationalisation used by Winkelmann (2009) is a very localised one using the following indicators: attending cultural events, attending entertainment events, engaging in active sports, visiting friends, relatives or neighbours, engaging in voluntary work in political or social organisations and attending church services

5.2. Data and methods

5.2.1. Data source and approach

The data for this analysis was taken from the latest wave of the European Values Study (EVS 2008). Data on the variables included was available for 44 of the 47 countries included in the survey, allowing for a substantial sample of countries in a multilevel analysis with countries representing all geographic regions of Europe. Similar to the analyses presented in chapter 3, restricting the analysis to European countries only allowed for a relatively robust understanding of life-satisfaction as a concept in comparative perspective without the investigation suffering from biases introduced by different cultural understandings of well-being (Lu & Gilmour 2004; Uchida et al. 2004). The EVS has been chosen, as it allowed the inclusion of more than double the countries for which there would have been data on associational membership in the World Values Survey (WVS) which was used for the exploratory analyses in chapter 3. As associational membership variables are essential in the construction of the social capital indicators used, a restriction to about 20 countries would have reduced the scope of the analysis substantially. As multilevel perspectives were of interest here again, a higher number of aggregate-level units with available data was imperative. They key limitation is that we lose the non-European Anglo-Saxon societies included in the exploratory part (USA, Canada, Australia). Country-level data (unless aggregated from the EVS) comes from the World Bank World Development Indicators (Worldbank 2011) and was taken for 2007 for all countries.[45]

Again, respondents were only included if they were potentially part of the labour market, meaning that students and pensioners for example were excluded. EVS design weights were applied to the analysis in order to allow for more adequate representativeness. A high proportion of respondents (about 17%) did not have data entries for the income variable. As the analyses presented here were systematically constructed and considering the substantial amount of missing data, missing value for income were imputed (see below for details). All other relevant variables showed very few missing cases.

[45] On very few instances data was not available for 2007. In those cases data on the year earlier or later was used instead.

The investigation proceeded in three steps: First, measures for social capital domains were constructed using *confirmatory factor analysis* (CFA). Following from this, a *structural equation model* (SEM) was set up in which the effect of unemployment on life-satisfaction was investigated. Two important differences to the exploratory analyses in chapter 3 should be noticed: By using SEM techniques it was possible not only to control for socio-economic variables, but additionally, the effect of some on unemployment itself could be modelled, thus substantially reducing self-selection biases for those classified as unemployed. The same applied to the measures of social capital which were included not merely as control variables, but also as predictors of unemployment – allowing us to position a person within their social network context. Finally, this analysis at the individual level was extended to a multi-level approach (MLSEM) in which the social capital indicators were also considered at the national level, allowing us to distinguish between the personal effects of social connectivity for individuals and the societal manifestation of social capital with regards to the unemployment-life satisfaction relationship.

5.2.2. Imputing income

Because of substantial skew as commonly observed for income (greater proportion of small incomes, few cases with comparatively very large incomes), the logarithm of income was applied throughout the analysis, offering a much more suitable distribution, approximating a normal distribution well (see figure 5.1). For the variables included in the analyses of this chapter (sex, age, age², unemployed, married, higher degree, having children, life satisfaction and social capital manifestations – summarised here as ConnectScore)[46] there was a total of 21.5% missing cases. For the income variable alone, we found 17.4% of missing cases – suggesting that the largest proportion of missing cases would have missing results for income – warranting the need for imputation of this variable. However, it could be possible that another variable also had a large amount of missing cases at the same time. In order to identify whether that was the case, it was crucial to investigate the patterns of missing data (see figures 5.2. and 5.3.).

[46] For the detailed operationalisation of these measures, please refer to the section below)

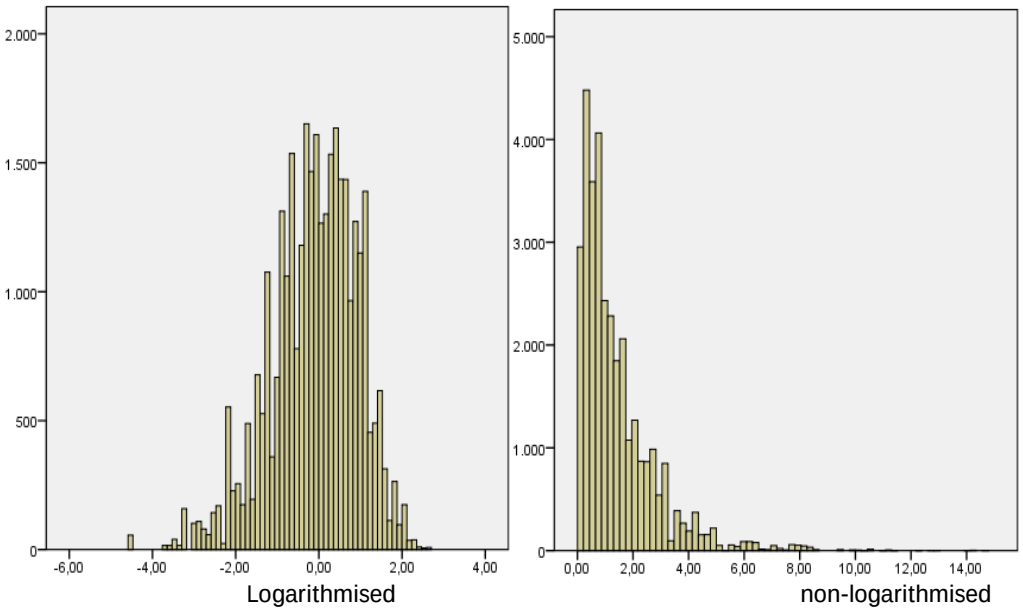


Figure 5.1: Frequency distribution of monthly household income (in 1000 Euros, PPP)

For about 79% of cases there were no missing values on any of these variables. The second most common data pattern (pattern 19) represents those cases that were missing for income only. With 16.1% this was the largest proportion of all the missing cases. The eight most common data patterns thereafter were all very small in magnitude. This means that indeed missingness could mainly be attributed to income while the availability of data for all other variables was rather good. Therefore imputation was conducted for the logarithmised version of income only.

The imputation procedure used a linear estimation approach and a great variety of indicators related to income (see table 5.1 for a full list). The results from the imputation appeared to be plausible (see table 5.2). The overall results were not shifted very much. The range of values has increased – but it has done so both at the higher and lower end, meaning that the distribution has remained similar and close to a normal one. The mean value has increased slightly (from -0.108 to -0.101) – which is not surprising however considering that people with higher incomes tend to be more reluctant to report it, which this might reflect. Because of the small size of the change no particular causes for concern were raised though.

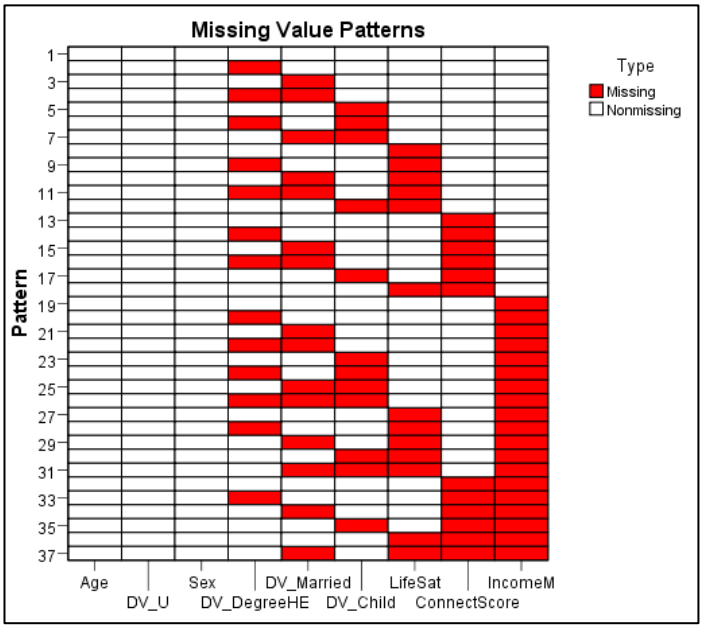


Figure 5.2: Patterns of missing data

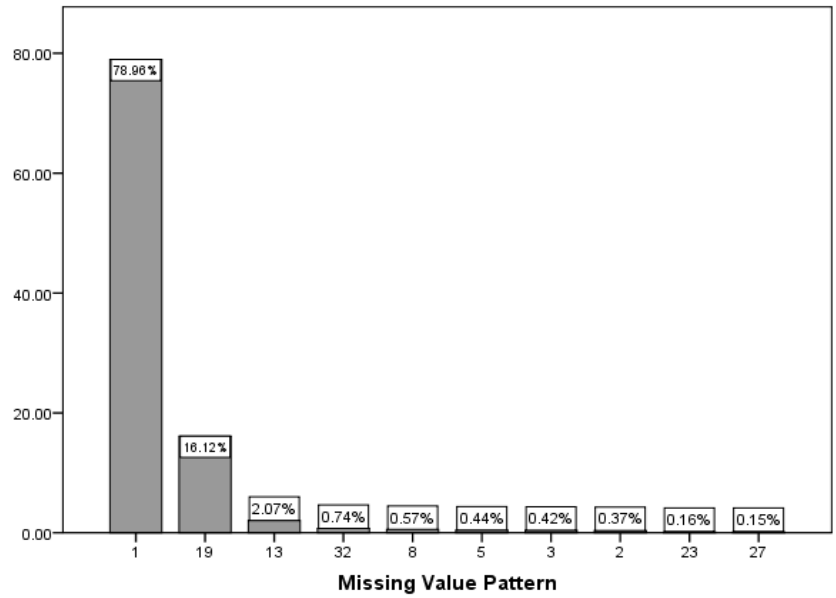


Figure 5.3: Prevalence of data patterns

Simple ordinary least squares regressions using the original and the imputed data (see table 5.3) estimating the effects of unemployed and all included control variables showed no substantial differences after imputation. Estimates, standard errors and overall model quality remained hardly unchanged further suggesting that the imputation did not distort the results of the analyses, but allowed us to include the 16% of cases that would have otherwise been deleted from the investigation –

not only increasing the sample size but also reducing the potential for bias in further analyses due to the exclusion of cases

Table 5.1: Variables used to impute LN Income

Subjective Health	Employed	Job preference	Leisure time use
Higher Education	Married	Having children	Political interest
Happiness feeling	Achievement	Autonomy	Attitude towards labour
Welfare reliance	orientation	Generalised trust	Parents' education
Sex	Competition attitude		
	Age		

Table 5.2: Values for LN income before and after imputation

	N	Mean	S.D.	Min	Max
Original data	32788	-0.108	1.047	-4.58	2.69
Imputed data	39359	-0.101	1.049	-5.41	3.69

Table 5.3: OLS Regressions before and after imputation

	1 (Imputed)	2 (Original data)
Life-Satisfaction ON		
Unemployed	-0.445 (0.03)***	-0.446 (0.03)***
Female	0.014 (0.02)	0.003 (0.02)
Age	-0.078 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***
Higher degree	0.079 (0.02)***	0.068 (0.03)**
LN Income	0.588 (0.01)***	0.600 (0.01)***
Married	0.379 (0.03)***	0.365 (0.03)***
Having Children	-0.005 (0.03)	0.024 (0.03)
N	38226	31916
Adj. R^2	0.108	0.109

5.2.3. Operationalisation of concepts

The operationalisation of variables employed followed closely the analyses from chapter 3 and is summarised in table 5.4. The main additions in this analysis were the variables used to measure social capital which require more detailed elaboration.

As discussed in chapter 4, it is crucial to distinguish between the dynamics of relations relevant for social capital formation (specific or general reciprocity/trust) and the structure of networks (weak or strong ties). Furthermore, it is crucial to conceptually distinguish between social capital variables as characteristics of individuals and as properties of aggregations (countries in this case). Both domains (the dynamics and network structures) were modelled using confirmatory factor

analysis (CFA) in this project. This has several advantages compared to simpler uses of summative indices. Most importantly it enables a simultaneous modelling of the relevant constructs and therefore allows us to take correlations between the concepts that are likely to exist into account. Through CFA we can further assess the quality of the operationalisation as a whole rather than of each construct itself. When satisfied with the constructs (modelled as latent variables) they can be included directly as regression items in the structural part of a structural equation model (SEM) thus reducing sources of error in the development of scales and enabling the modelling of errors thus increasing the validity of the results in the analysis (Byrne 2012, pp. 7).

To model the more attitudinal aspects of the dynamics of social capital relations three indicators could be identified that capture an emphasis on generalising (bridging) relations: Generalised trust, the perception of people being rather helpful or selfish and the perception of people as rather fair or opportunistic.[47] The measures capture the expectations about the behaviour of others with regards to reciprocity, but also reflect on how motivations for actions are understood (out of genuine helpfulness or mere self-interest maximising).

Regarding the structural variables, this project generally followed Paxton's (2007) approach of empirically assessing and then distinguishing between low and high connected associational membership types. This is a reflection of the theory (see chapter 4) that some associations may be fostering in-group, strong tie associations, while others are more likely to facilitate bridging, weak-tie networks. For each type of association available in the EVS the mean number of types of associations their members belong to was calculated. Associations whose members tended to be in a larger number of types of association were considered to be reflective of greater connectedness and thus reflective of the existence of a greater likelihood of the existence of weak ties. Table 5.5 shows the results for the associational membership types available in the EVS. Two main clusters could be identified with a substantial gap between professional organisations (with a mean of 3.90 membership types for their members) and conservation organisations (with a mean of 4.34 membership types for their members).

[47] The detailed wording and coding can be found in table 5.4.

Table 5.4: Wording and coding of manifest variables used

	Source	Operationalisation	Mean (s.d.)	Min..Max
INDIVIDUAL				
Life-Satisfaction	EVS	Life-Satisfaction (1- dissatisfied .. 10-satisfied)[48]	7.08 (2.21)	1..10
DV Unemployed	EVS	Self-classified (0-No, 1-Yes)	0.15 (0.36)	n/a
Female	EVS	Sex of respondent (0-Male, 1-Female)	0.45 (0.50)	n/a
Age	EVS	In years	40.2 (12.4)	16..103
Age²	EVS	In years squared	1768 (1061)	256..10609
LN Income	EVS	LN monthly household income (PPP, 1000 €)	-0.09 (1.04)	-5.41..3.69
DV Higher Degree	EVS	Holder of a higher education degree (0-No, 1-Yes)	0.30 (0.46)	n/a
DV Married	EVS	Respondent married (0-No, 1-Yes)	0.56 (0.50)	n/a
DV Children	EVS	Respondent has children (0-No, 1-Yes)	0.67 (0.47)	n/a
Generalised Trust	EVS	0- Can't be too careful, 1- Most people can be trusted	0.32 (0.47)	n/a
Helpfulness	EVS	Perception of helpfulness of others (1- People mostly look out for themselves .. 10- People mostly try to be helpful)[49]	4.53 (2.45)	1..10
Fairness	EVS	Perception of fairness in others (1- Most people would try to take advantage of me .. 10- Most people would try to be fair)[50]	5.41 (2.52)	1..10
Membership	EVS	Membership in the following association types respectively (0-No, 1-Yes): Social Welfare service for elderly, handicapped or deprived people; Religious or church organisation; Education, arts, music, or cultural activities; Trade unions; Political parties or groups; Local community actions; Third world development or human rights; Conservation, the environment, ecology, animal rights; Professional associations; Youth work; Sports or recreation; Women's groups; Peace movement; Health care		
AGGREGATE				
LN GDP/cap	WB	Gross-domestic product per capita in US$ (PPP), logarithmised (2007)	9.81 (0.73)	7.85..11.21
LN Inflation	WB	Inflation rate, logarithmised (2007)	1.26 (0.75)	-0.32..2.81
LN Unemployment rate	WB	Unemployment rate, logarithmised (2007)	1.97 (0.63)	0.83..3.56
Age-dependency ratio	WB	'Old' persons (65+) as percentage of 'working age' population (15-64), (2007)	21.38 (4.69)	8.66..30.17
Autonomy	EVS	Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal)[51]	6.84 (0.67)	4.07..8.03

[48] Question wording: "All things considered, how satisfied are you with your life as a whole these days?"

[49] Question wording: "Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?"

[50] "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?"

[51] Question wording: "Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use this scale to indicate how much freedom of choice and control you feel you have over the way our life turns out?"

Table 5.5: Connectedness of associational membership types

Type of Association	Mean number of membership types for members	
Labour Unions	2.76	
Sports and Leisure Organisations	2.84	
Religious Organisations	3.29	**Low Connection**
Education and Arts Organisations	3.66	**Membership**
Political Parties	3.78	
Professional Organisations	3.9	
Conservation Organisations	4.34	
Social Welfare Organisations	4.39	
Youth Work Organisations	4.41	
Womens' Organisations	4.71	**High Connection**
Health Care Organisations	4.75	**Membership**
Local Political Action Groups	5.04	
Human Rights Organisations	5.23	
Peace Movement	7.34	

The great advantage of this approach is that the grouping of associations was not based on some preconceived notions of what particular types of organisations 'should' be doing with regards to the formation of social networks and is in line with the structural approach to measuring social capital discussed in chapter 4. A possible limitation is that this operationalisation was applied to 44 European countries and not all types of organisations may play the same role in social capital relations in precisely the same way. The cut-off

point between lower and higher connected membership types could be shifting were this approach applied to each country individually (which would preclude further comparability of constructs however). Having said this, it is important to keep in mind that the analysis is based on the constructs overall and not on the exact relationships of the items making them up specifically. While certain shifts in the relative position of membership types on this scale may occur, an overall increase or decrease in each of the two constructs could still be considered a meaningful representation of higher and lower levels of the respective degree of connectedness when applied instrumentally. Comparisons between countries about their absolute levels of these constructs would be more critical and would require a much more

detailed, scrutinising investigation of the adequateness of such a means comparison.

The approach presented here follows Paxton (2007) conceptually, but differs in practice as no scale measures were computed – as latent variables were estimated and directly used (with the advantages outlined above). However, model complexity greatly increased with the use of latent variables. In order to compute the multi-level models later, manifest variables were needed. The results of the latent variable approach and the simpler scale-construction one are contrasted in the discussion of the extension of the individual-level models to the multi-level ones further below.

5.2.4. Constructing the individual-level models

All individual-level models used the three social capital constructs described. The measurement model shown in figure 5.4 applied throughout. In this the correlations between the three latent variables were freely estimated to more adequately assess the effects in the full SEM models where the latent variables were included. The sequential approach to constructing the models is displayed in figure 5.5.

First, a base model (5.5a) was estimated in which the latent social capital variables, socio-economic controls and unemployment predict life-satisfaction. To reduce the self-selection with regards to unemployment, the effects of income and education on unemployment were included, assuming that people with greater income and higher education were less likely to be those classified as unemployed (5.5b). Furthermore, social capital may affect the likelihood of a person being unemployed, as greater abundance of personal social capital may facilitate the search for employment.[52] Therefore the effects of the three latent social capital variables on unemployment were added to the model (5.5c). Social capital is unlikely to be distributed randomly across respondents however and potentially predicted by

[52] A more elaborate discussion of the relation of social capital and unemployment can be found in section 5.1.

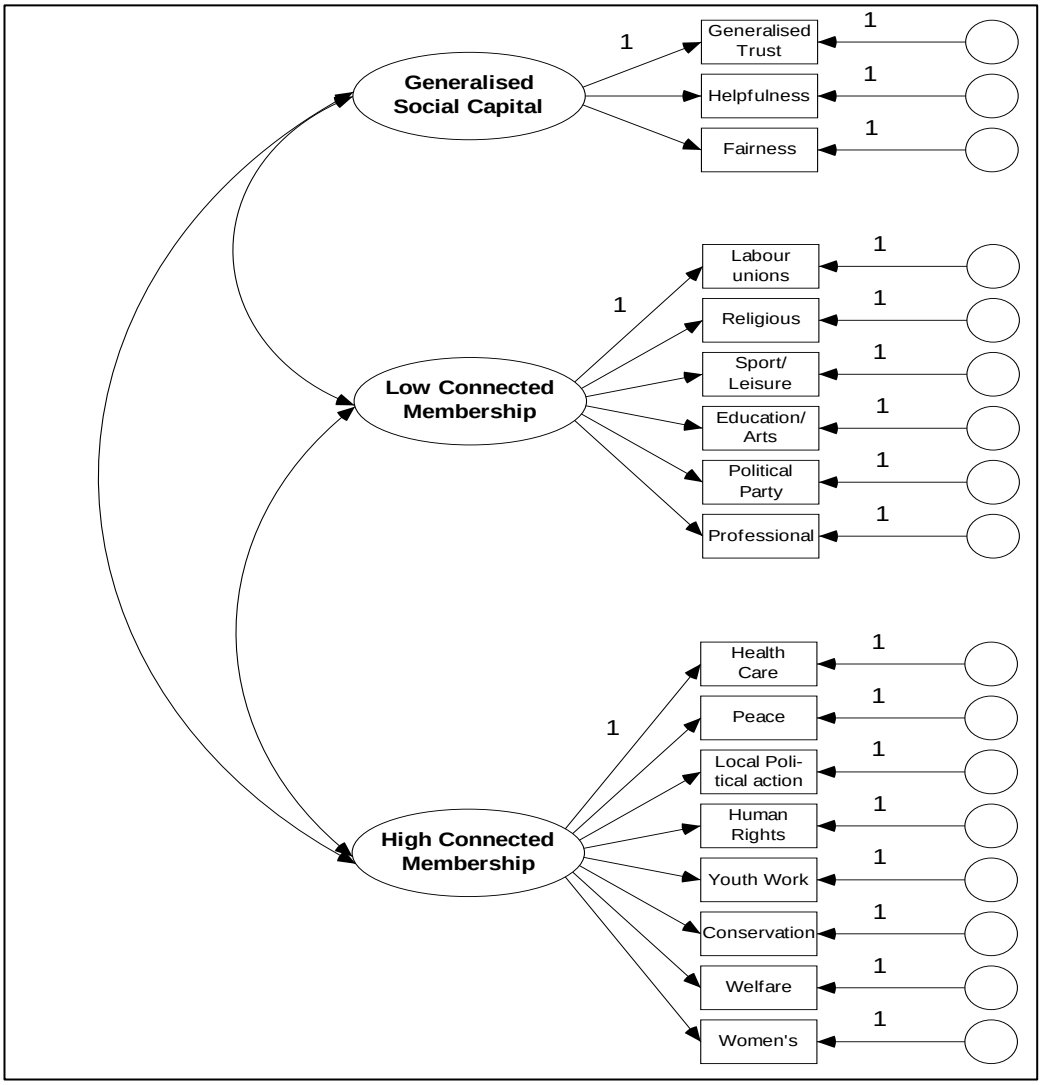


Figure 5.4: Measurement part of individual-level models

income and education as well.[53] Therefore, the effects of these variables on each of the latent social capital constructs were estimated as well (5.5d). Finally, rather

[53] The discussions on determinants of social capital presented earlier mainly focused on differentials in socio-economic predictors related to the labour market (income and education). These were therefore chosen as prior variables to account for selection biases. However, it should be acknowledged that there may also be effects of the socio-demographic variables presented here. The results therefore are not to be seen as having accounted for all possible influences on social capital at the individual level – which would be an investigation in its own right. Considering the findings on explained variance (presented below) at the individual level with the approach chosen here it suffices for the arguments made to focus on the socio-economic variables. The main interest is the interaction between unemployment and context variables. Finding the limitations with regards to the remaining variance that was left to be explained (meaning that further controls could not have added information substantially), the approach here allows to substantiate the argument that is developed below. Further investigations into the effects of sex, age, marital status and having children on social capital variables at the individual level would be an interesting research project, but would increase the complexity of this analysis too much.

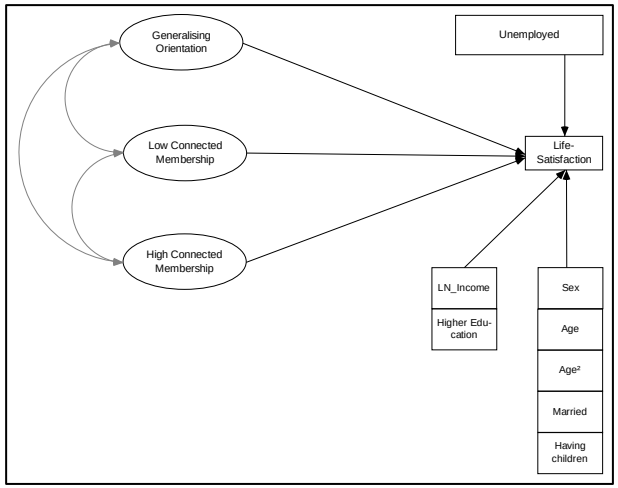
than only estimating direct effects on life-satisfaction, the effect of unemployment was scrutinised in more detail by adding interaction effects with the social capital constructs (5.5e). This step allows us to investigate whether the effect of unemployment varies for different levels of social capital an individual may have.

5.2.5. Constructing the multi-level models

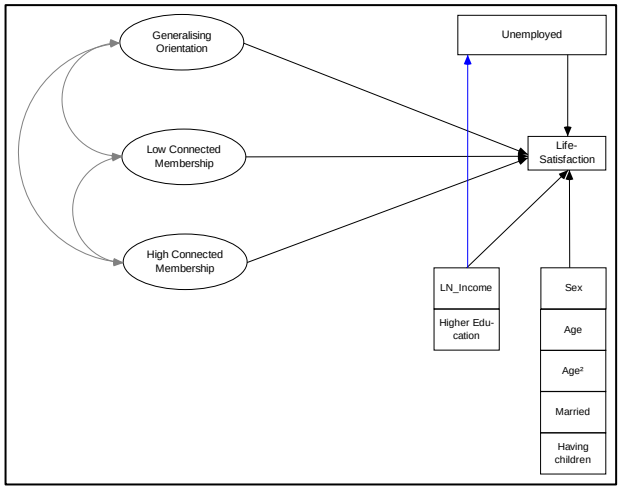
In order to construct the multi-level models, some simplifications were necessary in order to allow for the model to be computed. Hox et al. (2010) have shown that a complex multi-level SEM approach requires at least 50 level-2 units for robust results to occur. While 44 countries are a good number for simple multilevel models, they could be expected to pose problems in SEM estimation procedures. Had the model been run as a full Multilevel-SEM with interaction effects, nine dimensions of integration would have been required. Considering the limited number of level-2 units this would appear highly problematic. Muthén and Muthén (2010) recommend to generally not move beyond five dimensions, so it is no surprise to find that when attempted, a full model with latent variables and cross-level interaction effects could not be computed. Computing power was one issue[54] that limited the number of integrations which could be employed to 3 – for which of course the model then did not converge.

Two simplifications had to be applied therefore: The latent variables had to be replaced by manifest variables and the individual-level interaction effects had to be abandoned in order for cross-level interaction effects to be computed (to model the effects of country-level variables on the relationship between unemployment and life-satisfaction similarly to the models presented in chapter 3) while keeping the model identified. The manifest social capital variables were the saved factor scores from the final individual-level model taking into account the relevant processes

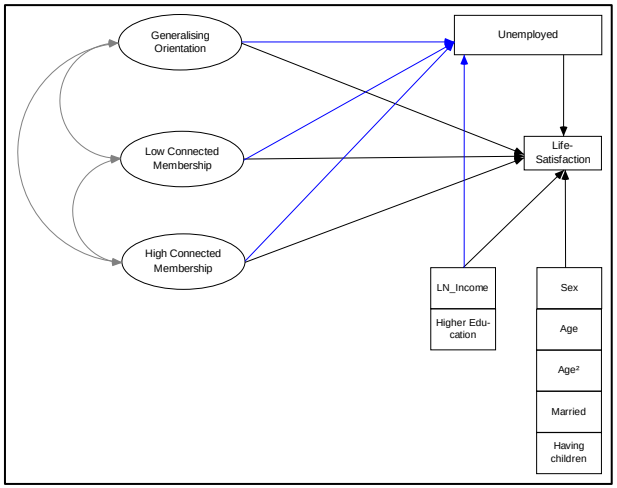
[54] Though the system used to run the 64-bit version of MPLUS 6.11 with which all computations were made was rather powerful, making use of 8 processors and 12GB RAM.



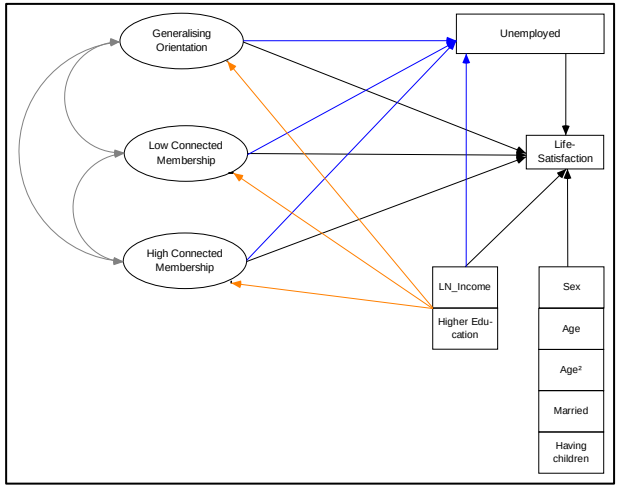
5.5a: Base model



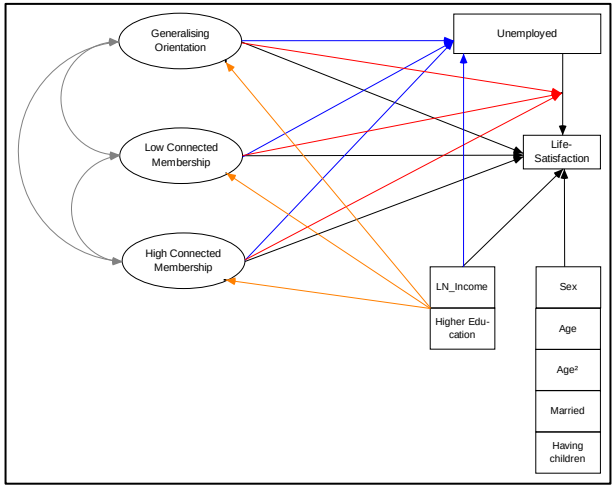
5.5b: +Bias Income/Education for 'Unemployed'



5.5c: +Bias Social capital for 'Unemployed'



5.5d: +Bias Income/Education for Social capital



5.5: +Interaction effects

Figure 5.5: Visualisation of individual-level SEM models

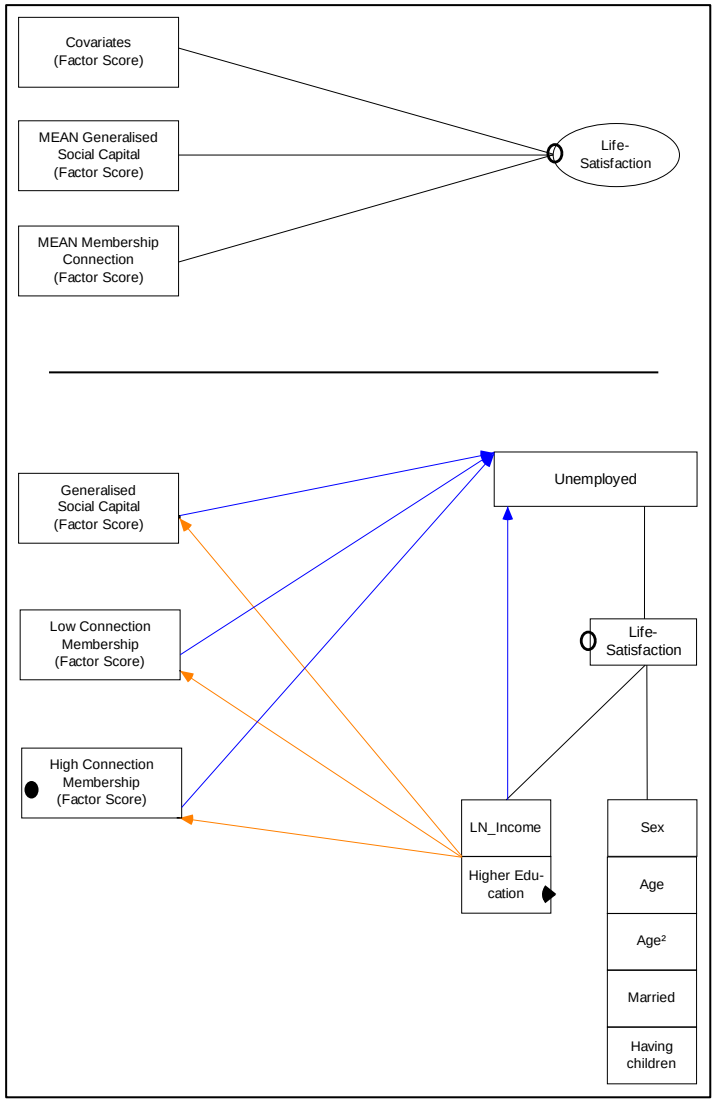
reflected by the model.[55] These were also used to compute the mean scores for the country-level social capital variables. As country-level low and high connection membership means were highly correlated (>0.9) and the correlation could not be estimated in this more simplified model, as it would have resulted in insufficient identification, the values for low and high connection membership at the country level were combined (the mean value was used). The use of two variables being so closely related would have caused too high a degree of multicollinearity, in particular as the number of units was limited. However, this does not pose a conceptual problem as it suggests that at the aggregate level low and high mean associational connectedness were not conceptually distinguishable – overall structural connection appeared to be one-dimensional. Abandoning the individual-level interaction effects means that we are only able to discuss one set of interaction terms at a time and cannot relate the cross-level to the individual-level ones. Interpretations of interaction effects therefore have to be considered within the respective analyses in which they were conducted and distinguished accordingly in the interpretation.

As generalised country-level and structural country-level social capital variables were also highly, though not perfectly, correlated (>0.8), only one of the two variables was used at a time throughout the analyses. A set of five covariates was also included: the three variables found to be most substantial in the analyses presented in chapter 3 (LN GDP/cap, age-dependency ratio, autonomy); the logarithm of the unemployment rate – because of the topical interest regarding unemployment and the logarithm of inflation rates. The value for 2007 was used for all countries, considering that the data collection time frame was more concise. Therefore the effects of inflation can be re-evaluated (in comparison to the results from chapter 3). Models were computed using the covariates together with LN GDP/cap to check for robustness. Each of the covariates was then also added to the analyses including the two country-level social capital variables respectively.

[55] Alternative, simpler manifest variables, such as sum scores have been tried, but not found to be as similar in results for the individual level in comparison to the final model with latent variables. The results demonstrating this can be found below in the multi-level results section.

The initial set of multilevel models estimated direct effects only (see figure 5.6a[56] for a general summary). This was followed by the addition of relevant cross-level interaction effects between country-level variables and the relationship between unemployment and life-satisfaction (see figure 5.6b for a summary).

[56] Note that not all effects of the country-level variables are measured simultaneously, depending on the model specifications discussed.



5.6a: Direct effects model

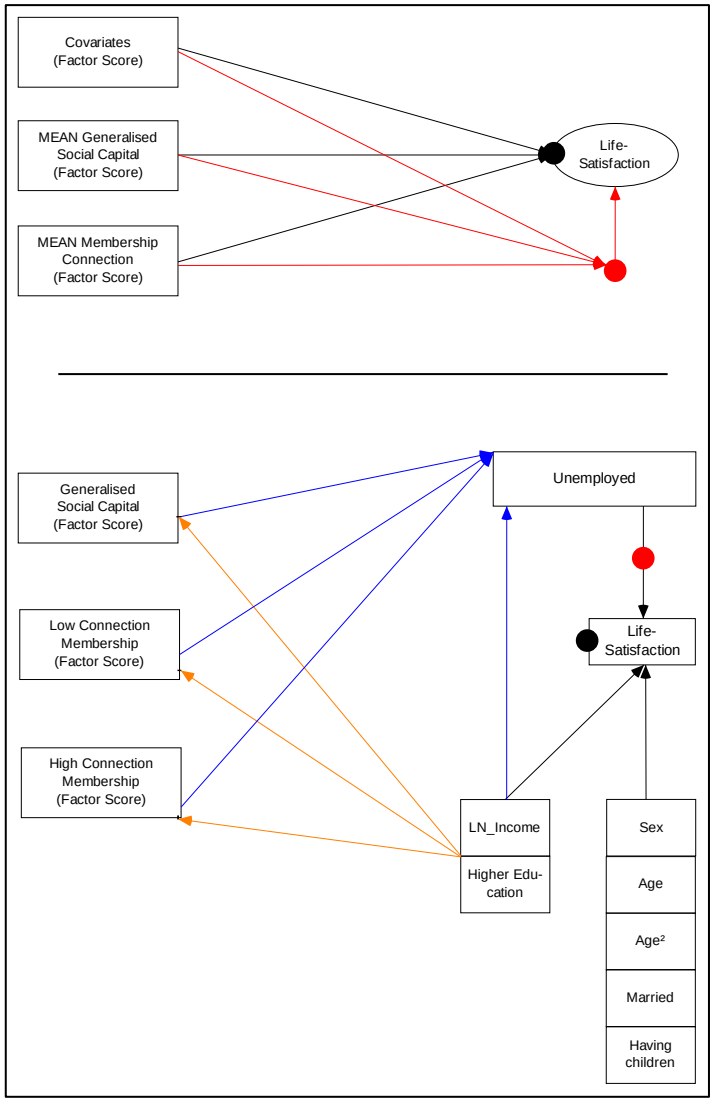


Figure 5.6b: Model with cross-level interactions

Figure 5.6: Visualisation of multi-level model summaries

5.3. Results

5.3.1. Measurement model

Table 5.6 shows the results for the measurement model of the three latent social capital constructs. Models 1 and 2 used robust weighted least squares estimation (WLSMV) to achieve measures as adequately as possible for the set of constructs presented (Muthén et al. 1997). A key advantage is the ability to use sampling weights (EVS design weights are applied) in this analysis. This is important as WLSMV estimation is not available for the type of estimation required to model interaction effects with latent variables in later models. Therefore it is insightful to see whether the application of weights changes results substantially. Comparing the results of models 1 and 2 showed hardly any difference: Estimate were altered only slightly, standard errors remained very similar and model quality did not change substantially either. The results in further analyses – though not weighted – could therefore be interpreted with a good degree of confidence in this regard.

The quality of the measurement model was good. All items showed substantial loadings for the latent constructs they were associated with and showed high levels of statistical significance. While the Chi-Square results were statistically significant, the model should not be dismissed as in particular for large samples chi-square tests have been shown to be overly sensitive in such models (Byrne 2012, pp. 67). The results for the RMSEA were very good with around 0.025 (considering 0.05 as strict criterion following Browne & Cudeck 1993) and the results for the CFI close to the often formulated stricter criterion (0.95 according Hu & Bentler 1999) and well within the more lenient cut-off (0.9 according to Bentler 1992).

For the full models a different estimator (MLF) had to be used.[57] Therefore model 3 presents the results from an estimation with this estimator to see whether the results may have been unduly influenced by the type of estimation technique. Most results were only changed slightly. Where changes appeared to be somewhat more extensive for the estimates, the standardised scores however remained close to the

[57] The discussion of the estimator follows in the next section.

Table 5.6: Individual level measurement model results

	1 Measurement Model *WLSMV estimator*		2 Measurement Model (with weights) *WLSMV estimator*		3 Measurement Model *MLF estimator*		4 Measurement Part of Full Model *MLF estimator*
Low Connection Membership BY							
Member of Labour Unions	1.000	0.560	1.000	0.558	1.000	0.577	1.000
Member of Religious Orga.	1.158 (0.02)***	0.649	1.153 (0.02)***	0.644	1.254 (0.04)***	0.663	1.165 (0.04)***
Member of Sport/Leisure Orga.	1.100 (0.02)***	0.617	1.105 (0.02)***	0.617	1.130 (0.03)***	0.624	1.186 (0.04)***
Member of Education/Arts Orga.	1.303 (0.02)***	0.730	1.303 (0.03)***	0.727	1.604 (0.05)***	0.750	1.560 (0.05)***
Member of Political Party	1.020 (0.02)***	0.572	1.030 (0.02)***	0.575	1.039 (0.04)***	0.592	0.980 (0.04)***
Member of Professional Orga.	1.225 (0.02)***	0.687	1.230 (0.02)***	0.687	1.441 (0.05)***	0.713	1.499 (0.05)***
High Connection Membership BY							
Member of Health Care Orga.	1.000	0.725	1.000	0.723	1.000	0.735	1.000
Member of Human Rights Orga.	1.133 (0.02)***	0.821	1.142 (0.02)***	0.826	1.389 (0.06)***	0.833	1.390 (0.06)***
Member of Peace Movement Orga.	1.202 (0.02)***	0.871	1.200 (0.02)***	0.868	1.532 (0.08)***	0.857	1.500 (0.08)***
Member of Local Political Action	1.035 (0.02)***	0.750	1.043 (0.02)***	0.755	1.097 (0.05)***	0.765	1.073 (0.05)***
Member of Youth Work Orga.	0.956 (0.02)***	0.693	0.968 (0.02)***	0.700	0.933 (0.04)***	0.711	0.919 (0.04)***
Member of Conservation Orga.	1.065 (0.02)***	0.772	1.058 (0.02)***	0.765	1.198 (0.05)***	0.792	1.179 (0.05)***
Member of Welfare Orga.	1.005 (0.02)***	0.728	1.019 (0.02)***	0.737	1.036 (0.04)***	0.747	1.004 (0.04)***
Member Women's Movement Orga.	0.916 (0.02)***	0.664	0.922 (0.02)***	0.667	0.854 (0.04)***	0.679	0.832 (0.04)***
Generalalised Social Capital BY							
Generalised Trust	1.000	0.735	1.000	0.730	1.000	0.638	1.000
Perception of Helpfulness	2.036 (0.04)***	0.610	2.040 (0.04)***	0.609	1.070 (0.02)***	0.656	1.042 (0.02)***
Perception of Fairness	2.446 (0.04)***	0.712	2.458 (0.05)***	0.713	1.296 (0.02)***	0.772	1.270 (0.02)***
Low Con. Mem. WITH High Con. Mem.	0.368 (0.01)***		0.367 (0.01)***		2.328 (0.09)***		2.009 (0.08)***
Low Con. Mem. WITH Generalised SC	0.188 (0.01)***		0.184 (0.01)***		0.833 (0.03)***		0.578 (0.02)***
High Con. Mem. WITH Generalised SC	0.152 (0.01)***		0.149 (0.01)***		0.938 (0.04)***		0.622 (0.04)***
-2loglikelihood					590271.6		762603.2
AIC					590349.7		762737.2
BIC (sample-size adjusted)					590560.5		763097.7
Chi-Sq. (df)	2939.1 (116)		2777.8 (116)				
RMSEA	0.025		0.024				
CFI	0.949		0.947				

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parenthesis followed by standardised scores where applicable. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded. Weights used in estimation (2) are EVS design weights.

Membership in association types is self-classified; Generalised Trust: 0-Can't be too careful .. 1-Most people can be trusted; Perception of Helpfulness: 1- People mostly look out for themselves .. 10- People mostly try to be helpful; Perception of Fairness: 1- Most people would try to take advantage of me .. 10- Most people would try to be fair

WLSMV estimates. So while there was some difference, the overall relation of the items to the latent variables remained unchanged. The changes were mainly due to the increase in standard errors, which would be expected from an MLF estimation which is not as precise for a confirmatory factor analysis of this type as the preferred WLSMV estimator would be (Muthén et al. 1997). However, the structure of the results remained very similar and therefore does not raise concerns about the further application in the structural equation models. Model 4 further substantiates this point by showing the results for the measurement part of the full individual-level estimation.[58] Estimates and standard errors were very similar suggesting that the measurement part of the model was not altered substantially through its integration with the structural part of the model.[59]

5.3.2. Individual-level results

In order to compute the models a specific maximum likelihood estimator (MLF) has been used.[60] Estimates are based on first derivatives only and therefore they are not as robust as more complex estimators, such as MLR. However, especially with large samples, MLF estimators have proven to behave very similar to MLR estimation (Bryk & Raudenbush 1992, pp. 265). With approximately 40,000 cases, MLF estimation therefore seems feasible and allows for an easier estimation of effects, which is helpful, considering that both categorical and continuous data was used in the analysis. Maximum likelihood estimation was necessary to compute the full model in which interactions between latent constructs and a categorical variable ('unemployed') were modelled.

The estimates (table 5.7) for the socio-economic control variables were consistent and similar to those found in chapter 3. There were no significant differences with regards to sex and having children for the levels of life-satisfaction, while income

[58] Only unstandardised scores are presented, as the integration procedure used in the SEM computations with interaction effects does not enable the computation of standardised scores (see below).
[59] The higher value for the model quality indicators is reflective of the whole model – whereas model 3 is only computing the measurement part itself. The complexity of model 4 therefore is much higher and cannot be compared directly. The full results of the model can be found in the following section.
[60] The integration algorithm for the analysis is computed with 10 integration points.

and being married were associated with higher levels. The significant quadratic effect of age, paired with a negative linear effect was observed again as well. The only marked difference was that, after controlling for social capital, holding a higher degree was associated with somewhat lower levels of life-satisfaction. This however is in line with other research that finds higher education to be associated with slightly lower levels of life-satisfaction in more comprehensive models.

The results showed that individual-level social capital matters when considering the relationship between unemployment and life-satisfaction. The estimate for the negative effect of unemployment on life-satisfaction was reduced in magnitude from the simplest model (1) with only socio-economic control variables in a regression (-0.445 to -0.365) when including and thus controlling for the social capital variables (2). Generalised social capital was associated substantially with higher levels of life satisfaction (0.354 – 0.376). There was an effect of structural social capital as well; however, it was not as robust across all models. Considering that it was statistically significant in the ones with the highest levels of model quality suggests though that it was a relevant effect. This only applied for low connection associational membership though. Higher levels of it were associated with substantially higher levels of life-satisfaction (0.240 – 0.300). It appears that high connection social capital did not add further increases in life-satisfaction. The direction of the estimate was negative even – however due its statistical insignificance, further interpretation would not be appropriate.

As predictors of unemployment (see model 3) both income and education were very substantial and statistically significant. As expected, respondents with higher income and higher education were less likely to be classified as unemployed. Compared to the previous model this did not affect the size of the effect of unemployment on life-satisfaction however which remained unchanged. The effect of unemployment on life-satisfaction therefore did not appear to be driven by a self-selection bias of socio-economic background of respondents with regards to their chances of being unemployed.

Table 5.7: Individual-level SEM results: Social capital and unemployment affecting life-satisfaction

	1	2	3	4	5	6
Life-Satisfaction ON						
DV Unemployed	-0.445 (0.03)***	-0.365 (0.03)***	-0.365 (0.03)***	-0.288 (0.05)***	-0.246 (0.05)***	1.351 (0.17)***
Low Connection Membership		0.240 (0.12)*	0.240 (0.12)*	0.154 (0.12)	0.269 (0.13)*	0.300 (0.16)$^{+}$
High Connection Membership		-0.095 (0.07)	-0.095 (0.07)	-0.044 (0.07)	-0.093 (0.08)	-0.107 (0.09)
Generalised Social Capital		0.367 (0.02)***	0.367 (0.02)***	0.376 (0.02)***	0.365 (0.02)***	0.354 (0.02)***
DV Unemployed X						
Low Connection Membership						3.953 (0.35)***
High Connection Membership						-2.411 (0.21)***
Generalised Social Capital						-0.302 (0.05)***
Female	0.014 (0.02)	-0.023 (0.02)	-0.023 (0.02)	-0.023 (0.02)	-0.023 (0.02)	-0.026 (0.02)
Age	-0.078 (0.01)***	-0.077 (0.01)***	-0.077 (0.01)***	-0.077 (0.01)***	-0.077 (0.01)***	-0.074 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.079 (0.03)**	-0.055 (0.03)*	-0.055 (0.03)*	-0.051 (0.03)*	-0.134 (0.03)***	-0.127 (0.03)***
LN Income	0.588 (0.01)***	0.464 (0.01)***	0.464 (0.01)***	0.474 (0.01)***	0.392 (0.02)***	0.400 (0.01)***
DV Married	0.379 (0.03)***	-0.365 (0.03)***	0.431 (0.03)***	0.430 (0.03)***	0.431 (0.03)***	0.414 (0.03)***
DV Children	-0.005 (0.03)	-0.019 (0.03)	-0.019 (0.03)	-0.019 (0.03)	-0.017 (0.03)	-0.021 (0.03)
DV Unemployed ON						
Low Connection Membership				-1.747 (0.26)***	-1.967 (0.30)***	-3.784 (0.53)***
High Connection Membership				0.893 (0.16)***	0.975 (0.17)***	2.070 (0.31)***
Generalised Social Capital				0.103 (0.04)**	0.063 (0.03)*	0.242 (0.06)***
LN Income			-0.968 (0.02)***	-0.997 (0.03)***	-0.721 (0.03)***	-0.792 (0.03)***
DV Higher Degree			-0.634 (0.04)***	-0.584 (0.04)***	-0.267 (0.06)***	-0.337 (0.07)***
Low Connection Membership ON						
LN Income					0.446 (0.01)***	0.438 (0.01)***
DV Higher Degree					0.586 (0.02)***	0.568 (0.02)***
High Connection Membership ON						
LN Income					0.491 (0.02)***	0.515 (0.02)***
DV Higher Degree					0.715 (0.04)***	0.759 (0.04)***
Generalised Social Capital ON						
LN Income					0.395 (0.01)***	0.394 (0.01)***
DV Higher Degree					0.369 (0.02)***	0.368 (0.02)***
-2loglikelihood	165203.0	740618.8	768704.4	768347.8	763056.8	762603.2
AIC	165308.5	740722.7	768814.4	768463.9	763184.9	762737.2
BIC (sample-size adjusted)	165276.8	741002.5	769110.4	768776.0	763529.2	763097.7

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation over 10 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;
Low Connection Membership, High Connection Membership and Generalised Social Capital are latent variables estimated simultaneously (see table 5.6 (4) for measurement part)

Introducing the social capital constructs as estimators of unemployment on the other hand did alter the results for the effect of unemployment on life-satisfaction (model 4). The magnitude reduced substantially (from -0.365 to -0288). This indicates that part of the effect of unemployment on life-satisfaction actually reflected an indirect effect of social capital variables. All three were substantial and statistically significant, but not pointing into the same direction. Greater scores on low connection membership were associated with a smaller likelihood of being unemployed (-1.747). This implies that having access to strong ties may help facilitate gaining employment. Having taken this into account, it is interesting to find that high connection membership had the opposite effect. A greater score, reflective of a greater abundance of memberships associated with weak ties was actually associated with a higher likelihood of unemployment (0.893). The result may be puzzling at first, but can be interpreted meaningfully: People with high connection membership tend to also be members with low connection membership associations as the correlation between the two suggests. Such an extensive involvement, in particular in organisations that are less associated with traditional forms of employment that are represented in the low connection group (such as trade unions and professional organisations) may require extensive commitment reducing commitment to employment. Furthermore, we may be observing partial endogeneity here: People who are unemployed may have a greater amount of time for involvement in associations. This would not explain the composition of opposite signs for low and high connection and thus indicates that not all of the effects here were due to reverse causality. But it is a possible limitation that should be considered.

Greater generalised social capital was also associated with a greater likelihood of being unemployed. This may be explained when considering that people, who trust others not to take advantage of them and to have a helpful attitude, have a greater chance of practicing what they expect themselves. Their expectations about others would thus be based in their own practice – a plausible explanation. If they then tend to be less self-gain oriented, they might not be as effective in the job market as their potential competitors.

The hypothesised effects of income and education on social capital were verified by the analyses (model 5). For all three social capital variables both higher education and greater income were associated with greater levels of the respective social capital construct.[61] Compared to the previous two models which also contained the modelling of more complex pathways than the simpler regression models 1 and 2, all indicators of model quality improved, suggesting that taking into account these effects made the model more adequate. The effect of income and education on unemployment was reduced in size – as part of the effect was established through an indirect connection via social capital. The size of the effect of unemployment on life-satisfaction was decreased further (-0.246) through this more accurate estimation. While it remained statistically significant and substantial it has become clear that the negative effect of unemployment on life-satisfaction has been substantially overestimated in magnitude in models that did not take into account biasing factors. Social capital appears to affect the relationship in two ways: as a control variable and as a prior for unemployment. While income and education did not change the size of the unemployment effect when used as priors for it, they indirectly affected the result when they were used to estimate social capital, thus better identifying the precise effect of social capital constructs. Income and education thus were predictors of social capital and therefore showed indirect effects through social capital on unemployment and subsequently on life-satisfaction. People with higher education and income tended to have greater levels of social capital.

Introducing interaction effects between the social capital variables and unemployment and life-satisfaction further improved model quality. All three effects were highly substantial and statistically significant. The direction of the effect again differed between the social capital indicators. Having a greater level of low connection type memberships was associated with a positive effect of unemployment on life-satisfaction – reflecting a mitigating effect (3.953). Greater involvement in strong-tie associations thus appears to be mitigating negative effects of unemployment. On the contrary, being involved in high connection associations

[61] It should be noted that there may well also be a relationship in the opposite direction: Higher social capital may cause greater levels of income and education in turn. This would be an interesting question for further research, but would increase the complexity of this model too much.

more extensively worsened the negative impact of unemployment on life-satisfaction (-2.411). The networks available through weak ties did not appear to be helpful in cushioning against negative effects of unemployment beyond the effects of strong tie networks. Similarly, greater levels of generalised social capital did not help an individual through unemployment – on the contrary, a more trusting, positive attitude was associated with a greater loss in life-satisfaction for those unemployed (-0.302). The most striking result however was the change of the sign of the direct effect of unemployment on life-satisfaction. It appears that the negative effect of unemployment on life-satisfaction exists, but only when contextualised in the different social capital domains. This suggests that the effect of unemployment on life-satisfaction was fully linked with the social capital an individual held. While certain types of social capital cushioned against negative effects of unemployment (low connection membership), others were responsible for the observed negative effect (high connection membership and generalised social capital). This suggests that the effect of unemployment on life-satisfaction is not as consistent for all individuals in all situations as often assumed in analyses that do not include a structural model taking into account the selection biases in unemployment. Taking into account the role of individual-level social capital appears to be crucial.

5.3.3. Alternative operationalisations for multilevel models

As pointed out above, including latent variables in a multilevel SEM model that would allow them to also be predicted at the country-level and including cross-level interactions was not feasible. The number of dimensions required (at least nine) for the integration procedures could not be achieved with the restricted computing power and considering the limited number of countries included. Therefore, a simpler version of the individual-level model specifications was required. In this specification the social capital variables were used as manifest variables, reducing the complexity of the model substantially.

Four approaches were tested (see table 5.8) and judged based on how well they resembled the results from the more complex, full individual-level model (1) that included latent variables and took account of measurement errors as they were

computed and included in the analysis – which was not possible when modelling with manifest variables only. Three of these models resembled more common approaches to how social capital has often been operationalised in survey research. Models (2) and (3) did not distinguish between low and high connection social capital. Model (2) showed the easiest approach to measuring network access through associational membership by simply adding the total number of memberships. Model (3), following Paxton (2007), used connectedness calculations to classify associations empirically to weight the memberships according to their connectedness.[62] Model (4) counted membership types, but did distinguish between low and high connection ones. Finally, model (5) used the saved factor scores from the full SEM model for the 3 estimated factors, thus taking into account the calculations of errors and relations between the variables in that model. The score for generalised social capital was calculated as the sum of the scores for helpfulness (1 – 10), fairness (1 – 10) and generalised trust (recoded as 1- not trusting or 10-trusting). This comparison allows us to see whether a simpler way of operationalising associational membership could have yielded the same results and would thus have allowed the use of simpler analyses, not having to take into account modelled error terms.

The results suggested that less elaborate operationalisations did not allow for the detection of the same effects as the more accurate estimation of the latent variable model did. Two important findings from the full model could not be replicated by models (2)-(4): First, they all found a small positive interaction effect between generalised social capital and unemployment on life-satisfaction, while model (1) identified a negative effect. Second, the three sum-score based models all continued to find a substantial, negative effect of unemployment on life-satisfaction, thus not being able to reflect the contextual nature of the relationship within individual-level social capital that the full model suggested. These results were only replicated by model (5) – which was based on the saved factor scores. Of all the simplified models, model (5) also showed the distinctively best model fit. This was not completely surprising considering that the parameters disregarded in

[62] Weights for each membership type were calculated as standardised z-scores.

Table 5.8: Alternative operationalisations for social capital variables

	1 Full SEM Model	2 Number of Membership types (total)	3 Connectedness Score	4 Number of Membership types (by connectedness)	5 Saved Factor Scores (from model 1)
Life-Satisfaction ON					
DV Unemployed	1.351 (0.17)***	-0.509 (0.05)***	-0.506 (0.05)***	-0.509 (0.05)***	4.586 (0.26)***
Low Connection Membership	0.300 (0.16)$^{+}$			0.117 (0.02)***	4.129 (0.12)***
High Connection Membership	-0.107 (0.09)			0.016 (0.02)	-2.369 (0.07)***
Connectedness		0.073 (0.01)***	0.024 (0.00)***		
Generalised Social Capital	0.354 (0.02)***	0.060 (0.02)***	0.060 (0.00)***	0.059 (0.00)***	0.139 (0.01)***
DV Unemployed X					
Low Connection Membership	3.953 (0.35)***			-0.096 (0.05)*	7.870 (0.58)***
High Connection Membership	-2.411 (0.21)***			0.008 (0.05)	-4.656 (0.34)***
Connectedness		-0.046 (0.02)*	-0.019 (0.01)***		
Generalised Social Capital	-0.302 (0.05)***	0.013 (0.00)***	0.012 (0.00)**	0.013 (0.00)***	-0.742 (0.09)***
Female	-0.026 (0.02)	-0.025 (0.02)	-0.025 (0.02)	-0.020 (0.02)	-0.005 (0.02)
Age	-0.074 (0.01)***	-0.074 (0.01)***	-0.074 (0.01)***	-0.074 (0.01)***	-0.070 (0.01)***
Age^2	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	-0.127 (0.03)***	-0.057 (0.03)*	-0.051 (0.03)*	-0.061 (0.03)*	-0.416 (0.02)***
LN Income	0.400 (0.01)***	0.461 (0.01)***	0.464 (0.01)***	0.460 (0.01)***	0.184 (0.01)***
DV Married	0.414 (0.03)***	0.420 (0.03)***	0.419 (0.03)***	0.421 (0.03)***	0.395 (0.02)***
DV Children	-0.021 (0.03)	-0.009 (0.03)	-0.009 (0.03)	-0.012 (0.03)	-0.046 (0.03)$^{+}$
DV Unemployed ON					
Low Connection Membership	-3.784 (0.53)***			-0.353 (0.03)***	-50.51 (1.06)***
High Connection Membership	2.070 (0.31)***			0.132 (0.03)***	27.89 (0.60)***
Connectedness		-0.130 (0.01)***	-0.030 (0.00)***		
Generalised Social Capital	0.242 (0.06)***	-0.023 (0.02)***	-0.024 (0.00)***	-0.022 (0.00)***	4.292 (0.09)***
LN Income	-0.792 (0.03)***	-0.919 (0.02)***	-0.926 (0.02)***	-0.912 (0.02)***	0.103 (0.06)$^{+}$
DV Higher Degree	-0.337 (0.07)***	-0.531 (0.04)***	-0.547 (0.04)***	-0.517 (0.04)***	1.870 (0.16)***
Low Connection Membership ON					
LN Income	0.438 (0.01)***			0.205 (0.01)***	0.437 (0.02)***
DV Higher Degree	0.568 (0.02)***			0.315 (0.01)***	0.567 (0.04)***
High Connection Membership ON					
LN Income	0.515 (0.02)***			0.073 (0.00)***	0.516 (0.03)***
DV Higher Degree	0.759 (0.04)***			0.133 (0.01)***	0.760 (0.06)***
Connectedness ON					
LN Income		0.303 (0.01)***	0.788 (0.02)***		
DV Higher Degree		0.472 (0.02)***	1.146 (0.05)***		
Generalised Social Capital ON					
LN Income	0.394 (0.01)***	1.623 (0.04)***	1.523 (0.04)***	1.623 (0.04)***	0.394 (0.01)***
DV Higher Degree	0.368 (0.02)***	1.857 (0.08)***	1.857 (0.08)***	1.860 (0.08)***	0.368 (0.02)***
-2loglikelihood	762603.2	539398.6	614719.0	572480.6	496501.6
AIC	762737.2	539454.6	615012.2	572554.6	496569.6
BIC (sample-size adjusted)	763097.7	539602.8	614923.2	572750.5	496752.6

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation over 10 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

Low Connection Membership, High Connection Membership and Generalised Social Capital are latent variables estimated simultaneously (see table 5.6 (4) for measurement part)

manifest-variable models were reflected in the latent variable model, thus increasing the accuracy of results. It highlights that a simple regression framework was not fully adequate for this analysis. However, some caution should be applied regarding some of the results from model 5. It was a simplification and did not allow us to include the modelling of error terms in the estimation here or thereafter. Some elements of the structural model therefore were partially altered. This applies to the modelling of unemployment: The effect of income was estimated as only marginally significant (and became insignificant in the multilevel models) and the effect of higher education was estimated to be positive. As these were the only estimates that changed substantially and as they were not at the focus of the analysis, it seemed appropriate to proceed, however, interpretations of the effects in the structural part of the individual level should mainly be based on the results from the individual-level analysis using the full estimation. The interpretation of the following multilevel analyses should focus on the unemployment and life-satisfaction relationship, its relation to the social capital variables and the contextualisation within country-level variables.

5.3.4. Simple multi-level model results with direct effects only

Table 5.9 presents the results from a set of multi-level models conducted with the covariates as country-level predictors and only direct effects modelled – the simplest specification of a multilevel model with aggregate-level predictors on which further models could be build. Specifications (1) to (5) show the results for each of the five country-level predictors while models (6) to (9) controlled the effects of the other four variables by including LN GDP/cap to check the robustness of the effects found for economic development. These models allow for a comparison to the effects identified in chapter 3 – where also Anglo-Saxon societies were included to see whether the relationships found there may have been influenced by those particular countries which were not included here.

The effect of unemployment on life-satisfaction was consistently negative and highly significant (as previously found in the multilevel models) and there were no irregularities with regards to the socio-economic control variables. The aggregate predictors behaved in a similar fashion to the ones in the sample for the exploratory

analyses in chapter 3. LN GDP/cap had a positive, significant direct effect on life-satisfaction. The effect varied in size though when other substantial aggregate covariates were included: The effect size for economic development dropped from a value above 0.4 to 0.233 when autonomy was included as well and to 0.187 when LN Inflation was incorporated. In the latter case statistical significance was also decreased substantially. This suggests that the positive effect of greater levels of LN GDP/cap may have been partially attributable to spuriousness through other related factors. The effect of LN GDP/cap was not reduced when also incorporating either LN unemployment rates or the age-dependency ratio.

Both variables only showed marginal direct effects however themselves which explains that. LN Unemployment rate had a negative effect when used on its own, but the effect was not robust to control, as the size dropped very strongly (from -0257 to -0.019). Neither unemployment rates nor age-dependency ratios seemed to be influencing life-satisfaction. The opposite was true for autonomy. As previously, higher levels of autonomy were associated with substantially greater levels of life-satisfaction. The effect was partially reduced when controlling for LN GDP/cap, however it remained robust and substantial (0.461).

The most interesting insight comes from the results for inflation. No effects could be observed in the exploratory models in chapter 3. It was speculated there that this may have been due to the operationalisation of inflation as a mean over several years considering that inflation rates were more volatile than the other measures included here and may therefore be impacting directly when they were measured. All values for inflation were taken for 2007 this time and therefore potentially able to pick up effects previously masked. Indeed, a substantial negative direct effect of LN Inflation could be observed (-0.439) suggesting that respondents in countries with greater levels of inflation had lower levels of life-satisfaction. The effect was reduced when including LN GDP/cap, but remained robust (-0.325) and significant. The reduction in the direct effect of LN GDP/cap was more pronounced here than for any other covariate, supporting the importance of inflation as a measure. Comparatively greater increases in prices were associated with lower levels of life-satisfaction in the respective countries in this particular model configuration.

Table 5.9: Direct-effect multi-level results with covariates as country-level variables

	1	2	3	4	5
INDIVIDUAL LEVEL					
Life-Satisfaction ON					
DV Unemployed	-0.621 (0.16)***	-0.621 (0.17)***	-0.619 (0.16)***	-0.619 (0.16)***	-0.620 (0.16)***
Female	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)
Age	-0.079 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.177 (0.03)***	0.177 (0.03)***	0.175 (0.03)***	0.175 (0.03)***	0.175 (0.03)***
LN Income	0.389 (0.01)***	0.390 (0.01)***	0.393 (0.01)***	0.393 (0.01)***	0.395 (0.01)***
DV Married	0.433 (0.03)***	0.431 (0.03)***	0.431 (0.02)***	0.431 (0.03)***	0.431 (0.03)***
DV Children	0.014 (0.03)	0.016 (0.03)	0.012 (0.03)	0.014 (0.03)	0.013 (0.03)
SOCIETAL LEVEL					
Life-Satisfaction ON					
Covariate	0.402 (0.10)***	-0.439 (0.11)***	-0.257 (0.14)$^{+}$	0.015 (0.03)	0.556 (0.08)***
	LN GDP/cap	*LN Inflation*	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
Intercept Life-Satisfaction	8.772 (0.18)***	8.778 (0.17)***	8.775 (0.19)***	8.788 (0.19)***	8.761 (0.15)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.158 (0.05)**	0.133 (0.04)***	0.214 (0.07)**	0.234 (0.08)***	0.099 (0.03)**
Variance DV Unemployed	0.225 (0.07)**	0.223 (0.07)**	0.223 (0.07)***	0.222 (0.08)**	0.222 (0.07)***
-2loglikelihood	196790.8	196784.0	196804.0	196808.0	196771.4
AIC	196819.0	196812.9	196832.2	196836.0	196801.4
BIC (sample-size adjusted)	196894.3	196887.4	196907.5	196911.4	196882.1

	6	7	8	9
INDIVIDUAL LEVEL				
Life-Satisfaction ON				
DV Unemployed	-0.622 (0.17)***	-0.621 (0.17)***	-0.621 (0.16)***	-0.611 (0.16)***
Female	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)
Age	-0.079 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.178 (0.03)***	0.177 (0.03)***	0.177 (0.03)***	0.177 (0.03)***
LN Income	0.388 (0.01)***	0.389 (0.01)***	0.389 (0.01)***	0.389 (0.01)***
DV Married	0.432 (0.03)***	0.433 (0.03)***	0.433 (0.03)***	0.434 (0.03)***
DV Children	0.015 (0.03)	0.014 (0.03)	0.013 (0.03)	0.013 (0.03)
SOCIETAL LEVEL				
Life-Satisfaction ON				
LN GDP/cap	0.187 (0.10)$^{+}$	0.411 (0.11)***	0.444 (0.12)***	0.233 (0.08)**
Covariate	-0.325 (0.14)*	-0.019 (0.13)	-0.015 (0.02)	0.461 (0.08)***
	LN Inflation	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
Intercept Life-Satisfaction	8.772 (0.19)***	8.772 (0.20)***	8.765 (0.19)***	8.753 (0.16)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.123 (0.04)**	0.158 (0.05)***	0.154 (0.05)**	0.076 (0.03)**
Variance DV Unemployed	0.225 (0.07)**	0.225 (0.07)**	0.225 (0.07)**	0.227 (0.07)**
-2loglikelihood	196621.2	196641.8	196789.8	196760.4
AIC	196939.1	196821.0	196820.0	196790.5
BIC (sample-size adjusted)	196898.7	196901.7	196900.7	196871.3

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; LN Unempl. Rate: Unemployment rate, logarithmised; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal)

The model quality for all models remained hardly unchanged (autonomy) or was improved when including both the respective country-level predictor and LN GDP/cap. The variance in the intercept for life-satisfaction and the effect of unemployment across countries was statistically significant for all models. When covariates and LN GDP/cap were included the remaining variance of life-satisfaction across societies was reduced – reflecting greater explanatory ability of the models when containing both factors. The amount of variance remaining for the unemployment effect did not vary much – which is not surprising as no interaction effects were included here. For these results it does not appear that previous findings in chapter 3 have been unduly driven by the inclusion of Anglo-Saxon societies.

To extend the analysis social capital variables were included in the following models step by step. Table 5.10 shows the direct effects of both country-level associational connectedness and generalised social capital on their own and together with each of the previously included covariates. On their own both social capital variables showed a substantial positive direct effect on life-satisfaction (0.502 for associational and 0.519 for generalised social capital). This suggests that in countries with higher levels of social capital people tended to report greater levels of life-satisfaction. Both variables remained statistically significant in most models; however, they were affected to different extent by different covariates. Non-surprisingly the variables showing very low direct effects (LN unemployment rate and Age-dependency ratio) did not reduce the effect of the social capital variables, but actually resulted in an increase in magnitude of the positive effect. For all other variables however, the effect was reduced. The reduction was most pronounced for autonomy (0.321 for associational and 0.299 for generalised social capital), but still substantial for LN Inflation (0.394 and 0.341 respectively) and LN GDP/cap (0.396 and 0.394). The effects of country-level social capital therefore were found to be partially linked to effects of economic and attitudinal covariates and should therefore not be analysed on their own.

The same holds true in reverse for the covariates, however to very different extent. The direct effect of autonomy was reduced only very slightly (to around 0.42) when taking into account the social capital variables. Inflation on the other hand showed a

greater amount of spuriousness (drop in magnitude to about -0.29), but the effect remained substantial and statistically significant. This did not hold for economic development. The effect was extensively reduced when social capital was controlled for (to 0.13 for associational and 0.16 for generalised social capital). The effect was rendered statistically insignificant, suggesting that LN GDP/cap's positive effect was dominantly spurious to social capital.

5.3.5. Simple multi-level results with cross-level interaction effects

To fully replicate the models from chapter 3, cross-level interaction effects between the country-level variables and the effect of unemployment on life-satisfaction needed to be included to see whether that relationship was affected by the covariates in a similar way without Anglo-Saxon countries and whether country-level social capital acted as a contextualising factor in the same way individual-level social capital did.

Table 5.11 shows the same models presented in table 5.9 (country-level covariates on their own and together with LN GDP/cap), but with the extension of cross-level interaction effects for the aggregate predictors. Compared to the simpler models the size of the direct effects remained largely unchanged. Significant interaction effects could be observed only for two of the five covariates: There was a marginally significant, negative interaction effect of LN GDP/cap (-0.284) suggesting that unemployment had a more pronounced negative effect in countries where economic development was higher. Similarly to the models presented in chapter 3, this effect seemed to be spurious. When other covariates were included the size of the effect was reduced and rendered statistically insignificant.

The cross-level interaction effect of age-dependency ratio however was found to be robust – in the same way it was identified in chapter 3. In societies in which the proportion of those at pension age (65+) was relatively greater compared to those at theoretical working age (15 – 64), the effect of unemployment on life-satisfaction was greater (-0.054). This also held true when controlling for economic development (-0.044). This cross-level interaction did not seem to have been driven

Table 5.10a: Direct-effect multi-level results with social capital and covariates as country-level variables

	1	2	3	4	5	6
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	-0.620 (0.16)***	-0.620 (0.16)***	-0.621 (0.16)***	-0.621 (0.16)***	-0.622 (0.16)***	-0.622 (0.17)***
Female	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.005 (0.02)	0.006 (0.02)	0.006 (0.02)
Age	-0.079 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.174 (0.03)***	0.173 (0.03)***	0.175 (0.03)***	0.174 (0.03)***	0.175 (0.03)***	0.175 (0.03)***
LN Income	0.390 (0.01)***	0.391 (0.01)***	0.389 (0.01)***	0.389 (0.01)***	0.387 (0.01)***	0.388 (0.01)***
DV Married	0.433 (0.02)***	0.434 (0.03)***	0.434 (0.02)***	0.435 (0.02)***	0.434 (0.03)***	0.434 (0.03)***
DV Children	0.012 (0.03)	0.011 (0.03)	0.013 (0.03)	0.012 (0.03)	0.014 (0.03)	0.014 (0.03)
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	0.502 (0.16)***		0.396 (0.23)$^{+}$		0.341 (0.11)***	
Mean Generalised Social Capital		0.519 (0.20)*		0.394 (0.23)*		0.353 (0.11)**
Covariate			0.130 (0.16) *LN GDP/cap*	0.159 (0.13) *LN GDP/cap*	-0.291 (0.11)** *LN Inflation*	-0.295 (0.11)** *LN Inflation*
Intercept Life-Satisfaction	8.776 (0.15)***	8.770 (0.16)***	8.776 (0.18)***	8.770 (0.19)***	8.774 (0.18)***	8.776 (0.18)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.131 (0.04)***	0.132 (0.04)**	0.127 (0.04)***	0.126 (0.04)**	0.096 (0.03)***	0.096 (0.03)***
Variance DV Unemployed	0.225 (0.06)***	0.226 (0.07)***	0.227 (0.07)***	0.227 (0.06)***	0.226 (0.07)***	0.227 (0.07)**
-2loglikelihood	196783.2	196783.6	196781.8	196781.4	196770.2	196770.0
AIC	196811.3	196811.7	196812.0	196811.6	196800.3	196800.2
BIC (sample-size adjusted)	196886.6	196887.1	196892.7	196892.3	196881.0	196880.9

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

Table 5.10b: Direct-effect multi-level results with social capital and covariates as country-level variables

	7	8	9	10	11	12
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	-0.621 (0.16)***	-0.620 (0.17)***	-0.620 (0.17)***	-0.620 (0.17)***	-0.622 (0.16)***	-0.621 (0.16)***
Female	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.005 (0.02)
Age	-0.078 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.173 (0.03)***	0.173 (0.03)***	0.174 (0.03)***	0.173 (0.03)***	0.173 (0.03)***	0.173 (0.03)***
LN Income	0.390 (0.01)***	0.391 (0.01)***	0.390 (0.01)***	0.391 (0.01)***	0.390 (0.01)***	0.392 (0.01)***
DV Married	0.433 (0.02)***	0.434 (0.03)***	0.433 (0.03)***	0.433 (0.03)***	0.434 (0.03)***	0.434 (0.03)***
DV Children	0.012 (0.03)	0.012 (0.03)	0.012 (0.03)	0.012 (0.03)	0.011 (0.03)	0.011 (0.03)
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	0.589 (0.16)***		0.506 (0.16)**		0.321 (0.11)**	
Mean Generalised Social Capital		0.570 (0.20)**		0.556 (0.23)*		0.299 (0.11)**
Covariate	0.143 (0.13)	0.088 (0.13)	-0.002 (0.03)	-0.013 (0.02)	0.427 (0.08)***	0.418 (0.09)***
	LN Unempl. Rate	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Age-Dep. Ratio*	*Mean Autonomy*	*Mean Autonomy*
Intercept Life-Satisfaction	8.775 (0.16)***	8.777 (0.17)***	8.770 (0.18)***	8.768 (0.16)***	8.763 (0.13)***	8.760 (0.14)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.126 (0.04)***	0.130 (0.04)**	0.131 (0.04)**	0.129 (0.05)**	0.063 (0.02)***	0.072 (0.03)**
Variance DV Unemployed	0.225 (0.07)***	0.225 (0.07)***	0.226 (0.07)***	0.225 (0.07)***	0.228 (0.07)***	0.227 (0.07)***
-2loglikelihood	196781.6	196783.0	196783.2	196782.6	196752.8	196758.6
AIC	196811.8	196813.0	196813.3	196812.7	196782.8	196788.6
BIC (sample-size adjusted)	196892.5	196893.8	196894.0	196893.4	196863.6	196869.3

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

Unempl. Rate: Unemployment rate, logarithmised ; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal); Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

by the inclusion of Anglo-Saxon societies in the exploratory analysis, but appeared robust. This was not the case for the effect of autonomy: While a substantial contextualising factor in the exploratory analyses, the positive cross-level interaction could not be reproduced for this sample of countries. This suggests that the effect may have been driven by a substantial difference between the European and Anglo-Saxon societies rather than a generalisable characteristic that could be applied to the whole set of countries.[63]

While the reduction in explained variation in life-satisfaction between societies was similar to the direct-effect models (as no further indicators have been added), the inclusion of interaction effects helped explaining substantial amounts of variation in the random slope of individual-level unemployment between societies. Not surprisingly, the amount of explained variance was greatest for the models which included the age-dependency ratio (34.2% for model 8[64]) compared to the direct-effects only models. Compared to the direct-effect models, model quality measures remained either unchanged or improved further for all models, suggesting that the inclusion of interaction effects did not distort the appropriateness with regards to model fit. The inclusion of societal social capital variables did not change very much (table 5.12).

The results from the direct effects models were mostly replicated. There was one marked difference to the direct effect models for the specification of LN GDP/cap together with the social capital variables. In this case the effect of social capital was rendered statistically insignificant after the inclusion of cross-level interaction effects. As the substantive results for the estimates remained largely unchanged, this is not majorly problematic for the comprehensive evaluation, as an increase in standard errors would be expected when cross-level interactions are introduced. With regards to the cross-level interaction effects of the country-level social capital variables themselves we did not find significant ones. Standard errors often were

[63] More detailed research would be required to precisely identify what exactly caused the effect to be prevalent in the other sample and not this one. The effect from chapter 3 cannot be assumed as robust however at this point. Other explanations than country selection biases may be question-order effects as the question was asked at different points in the World Values Survey and the European Social Survey and may thus not be fully comparable.

[64] Calculated as proportional reduction in variance in the random slope: (0.225 – 0.148)/0.225

similar in size or even larger than the estimates, therefore discussions of direction and magnitude would not be very adequate. The exception to this general observation was the cross-level interaction effect for mean generalised social capital (-0.338) when taking into account levels of autonomy, which was substantial and nearly significant at the 5%-level. Considering that this result was not replicated by any of the other models, it does not allow for a substantial conclusion to be suggested though.

In summary, it appears that country-level social capital affected life-satisfaction directly and substantially in a positive way. It also affected covariates with regards to their direct effects. It did not provide a contextualising effect for the relationship of unemployment on life-satisfaction in the way individual-level social capital did. Furthermore, cross-level interaction effects of covariates with unemployment on life-satisfaction also remained largely unaltered.

5.3.6. Cross-level interaction results with individual-level social capital modelling

Finally, the multi-level framework was extended to incorporate individual-level social capital variables and the structural pathways modelling selection biases in social capital and unemployment to see whether those results were altered in a different way through country-level variables than simple multilevel models would propose. The results (table 5.13) were affected substantially by taking into account the structural paths related to individual-level social capital. The disappearance of the negative direct effect of unemployment on life-satisfaction and its replacement with a positive effect was replicated again here. This was the result of individual-level interaction effects between the social capital variables and unemployment. They were reflected in the saved factor scores of the previous latent variables and therefore the effect was picked up again here, however, the actual individual-level interactions could not be modelled simultaneously to the cross-level interactions (as discussed above). The estimates for socio-economic control variables, direct effects

Table 5.11a: Cross-level interaction multi-level results with covariates as country-level variables

	1	2	3	4	5
INDIVIDUAL LEVEL					
Life-Satisfaction ON					
DV Unemployed	-0.632 (0.13)***	-0.624 (0.16)***	-0.630 (0.14)***	-0.632 (0.10)***	-0.619 (0.18)***
Female	0.006 (0.02)	0.007 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)
Age	-0.079 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.177 (0.03)***	0.177 (0.03)***	0.175 (0.03)***	0.175 (0.03)***	0.175 (0.03)***
LN Income	0.389 (0.01)***	0.390 (0.01)***	0.393 (0.01)***	0.393 (0.01)***	0.394 (0.01)***
DV Married	0.433 (0.02)***	0.431 (0.02)***	0.431 (0.02)***	0.431 (0.02)***	0.430 (0.02)***
DV Children	0.015 (0.03)	0.016 (0.03)	0.012 (0.03)	0.015 (0.03)	0.012 (0.03)
SOCIETAL LEVEL					
Life-Satisfaction ON					
Covariate	0.408 (0.10)***	-0.442 (0.11)***	-0.264 (0.15)$^{+}$	0.016 (0.03)	0.557 (0.10)***
	LN GDP/cap	*LN Inflation*	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
DV Unemployed X					
Covariate	-0.284 (0.15)$^{+}$	0.120 (0.14)	0.269 (0.22)	-0.054 (0.02)**	-0.046 (0.25)
	LN GDP/cap	*LN Inflation*	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
Intercept Life-Satisfaction	8.782 (0.19)***	8.780 (0.18)***	8.765 (0.20)***	8.800 (0.19)***	8.747 (0.15)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.158 (0.06)**	0.133 (0.04)***	0.214 (0.07)**	0.234 (0.08)**	0.099 (0.03)**
Variance DV Unemployed	0.182 (0.06)**	0.216 (0.07)**	0.193 (0.05)***	0.153 (0.05)**	0.221 (0.07)**
-2loglikelihood	196783.8	196782.8	196799.6	196795.4	196801.4
AIC	196814.0	196812.9	196829.7	196825.6	196929.8
BIC (sample-size adjusted)	196894.7	196893.6	196910.4	196906.3	196882.2

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; LN Unempl. Rate: Unemployment rate, logarithmised; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal)

Table 5.11b: Cross-level interaction multi-level results with covariates as country-level variables

	6	7	8	9
INDIVIDUAL LEVEL				
Life-Satisfaction ON				
DV Unemployed	-0.632 (0.13)***	-0.636 (0.13)***	-0.631 (0.01)***	-0.633 (0.13)***
Female	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)
Age	-0.079 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.178 (0.03)***	0.177 (0.03)***	0.177 (0.03)***	0.177 (0.03)***
LN Income	0.388 (0.01)***	0.389 (0.01)***	0.389 (0.01)***	0.389 (0.01)***
DV Married	0.432 (0.02)***	0.432 (0.02)***	0.433 (0.02)***	0.433 (0.02)***
DV Children	0.016 (0.03)	0.014 (0.03)	0.014 (0.03)	0.013 (0.03)
SOCIETAL LEVEL				
Life-Satisfaction ON				
LN GDP/cap	0.196 (0.12)$^{+}$	0.417 (0.11)***	0.448 (0.12)***	0.241 (0.09)**
Covariate	-0.322 (0.16)*	0.016 (0.16)	-0.014 (0.02)	0.460 (0.13)***
	LN Inflation	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
DV Unemployed X				
LN GDP/cap	-0.338 (0.24)	-0.225 (0.22)	-0.145 (0.16)	-0.306 (0.17)$^{+}$
Covariate	-0.089 (0.20)	0.127 (0.27)	-0.044 (0.02)*	0.067 (0.28)
	LN Inflation	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
Intercept Life-Satisfaction	8.774 (0.20)***	8.774 (0.22)***	8.771 (0.19)***	8.759 (0.16)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.268 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.124 (0.04)**	0.158 (0.06)**	0.154 (0.05)**	0.076 (0.03)**
Variance DV Unemployed	0.180 (0.06)**	0.276 (0.06)**	0.148 (0.06)**	0.183 (0.07)**
-2loglikelihood	196773.2	196783.0	196775.8	196753.2
AIC	196807.3	196817.1	196809.8	196787.2
BIC (sample-size adjusted)	196898.7	196908.6	196901.3	196878.7

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

of social capital variables as well as structural relationships remained very similar in direction and significance and therefore do not require further discussion.[65]

The most essential finding of the analysis was that the amount of variance between countries in the random slope of unemployment was hugely reduced after taking into account the effects of social capital as well as income and education on unemployment. The greatest amount of variance left varying across countries was for specification (1) which only included LN GDP/cap. With 0.02 it was very small compared to the equivalent models in table 5.11b (0.18 – 0.28). That means that a large portion of the effect of unemployment on life-satisfaction was explained by differences in social capital at the individual level and (to a lesser extent though, considering the limited influence identified in the individual-level models) difference in income and education between individuals. Some of the variation we could analyse in the multilevel models could actually be explained by differences in the composition of individual-level factors. It is therefore not surprising that the results for the country-level variables changed once we took the individual-level structural model into account.

Considering that the major part of variance in the unemployment effect at the individual level appears to have been explained, this means that the remaining effect was likely to either be random or genuinely associated with systematic cross-country differences that were not accounted for by individual-level factors. As a consequence, the cross-level interaction effect of age-dependency ratio and unemployment has become substantially reduced and insignificant statistically. It appears that the contextualising effect was partially related to variation that was actually located at the individual level and explained through the more complex social capital pathways, but was not accounted for in the simpler model. The negative effect of societies with a higher ratio of older to working age population

[65] As pointed out above discussions of individual-level paths should also be based on the results from the full individual-level SEM model which estimates interactions and direct effects through latent variables and thus takes into account all forms of errors that could be estimated. Alterations in particular individual-level paths (as identified above) may not be signs of non-robustness, but less accurate estimation. As most main paths were estimated in the same way as they were estimated in the fully specified model, the foundation for the discussion of the unemployment effect on life-satisfaction in the context of the country-level variables seems appropriate and will be the focus of the discussions in this section.

Table 5.12a: Cross-level interaction multi-level results with social capital and covariates as country-level variables

	1	2	3	4	5	6
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	-0.633 (0.15)***	-0.635 (0.15)***	-0.630 (0.13)***	-0.634 (0.13)***	-0.634 (0.16)***	-0.636 (0.16)***
Female	0.006 (0.02)	0.005 (0.02)	0.006 (0.02)	0.005 (0.02)	0.006 (0.02)	0.005 (0.02)
Age	-0.078 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.174 (0.03)***	0.173 (0.03)***	0.175 (0.03)***	0.175 (0.03)***	0.175 (0.03)***	0.175 (0.03)***
LN Income	0.390 (0.01)***	0.391 (0.01)***	0.389 (0.01)***	0.389 (0.01)***	0.387 (0.01)***	0.388 (0.01)***
DV Married	0.433 (0.02)***	0.433 (0.03)***	0.433 (0.02)***	0.434 (0.02)***	0.433 (0.02)***	0.434 (0.02)***
DV Children	0.012 (0.03)	0.012 (0.03)	0.012 (0.03)	0.012 (0.03)	0.015 (0.03)	0.014 (0.03)
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	0.507 (0.16)***		0.394 (0.27)		0.345 (0.13)**	
Mean Generalised Social Capital		0.524 (0.21)*		0.394 (0.23)$^{+}$		0.358 (0.15)*
Covariate			0.140 (0.18)	0.165 (0.14)	-0.292 (0.12)*	-0.295 (0.11)**
			LN GDP/cap	*LN GDP/cap*	*LN Inflation*	*LN Inflation*
DV Unemployed X						
Mean Associational Connectedness	-0.238 (0.19)		0.029 (0.32)		-0.217 (0.25)	
Mean Generalised Social Capital		-0.291 (0.19)		-0.232 (0.25)		-0.278 (0.29)
Covariate			-0.302 (0.24)	-0.092 (0.29)	0.034 (0.18)	0.020 (0.21)
			LN GDP/cap	*LN GDP/cap*	*LN Inflation*	*LN Inflation*
Intercept	8.775 (0.16)***	8.772 (0.16)***	8.767 (0.22)***	8.771 (0.19)***	8.778 (0.19)***	8.773 (0.18)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.131 (0.04)***	0.132 (0.04)**	0.128 (0.04)**	0.126 (0.04)**	0.096 (0.03)***	0.096 (0.03)***
Variance DV Unemployed	0.202 (0.06)***	0.194 (0.06)***	0.184 (0.06)**	0.182 (0.06)**	0.203 (0.06)***	0.196 (0.06)**
-2loglikelihood	196780.0	196779.0	196795.0	196774.4	196767.0	196765.6
AIC	196810.0	196809.1	196809.0	196808.4	196801.0	196799.6
BIC (sample-size adjusted)	196890.7	196889.8	196900.5	196899.9	196892.5	196891.1

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

Table 5.12b: Cross-level interaction multi-level results with social capital and covariates as country-level variables

	7	8	9	10	11	12
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	-0.637 (0.15)***	-0.638 (0.15)***	-0.633 (0.10)***	-0.630 (0.10)***	-0.635 (0.17)***	-0.639 (0.16)***
Female	0.006 (0.02)	0.005 (0.02)	0.006 (0.02)	0.006 (0.02)	0.006 (0.02)	0.005 (0.02)
Age	-0.078 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***	-0.078 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	0.173 (0.03)***	0.173 (0.03)***	0.173 (0.03)***	0.173 (0.03)***	0.173 (0.03)***	0.173 (0.03)***
LN Income	0.390 (0.01)***	0.391 (0.01)***	0.390 (0.01)***	0.391 (0.01)***	0.390 (0.01)***	0.391 (0.01)***
DV Married	0.432 (0.02)***	0.433 (0.02)***	0.433 (0.02)***	0.433 (0.02)***	0.434 (0.02)***	0.434 (0.02)***
DV Children	0.012 (0.03)	0.012 (0.03)	0.013 (0.03)	0.012 (0.03)	0.010 (0.03)	0.011 (0.03)
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	0.590 (0.18)***		0.508 (0.16)**		0.325 (0.11)**	
Mean Generalised Social Capital		0.573 (0.24)*		0.558 (0.24)*		0.305 (0.12)**
Covariate	0.138 (0.17)	0.084 (0.16)	-0.001 (0.03)	-0.012 (0.02)	0.427 (0.13)***	0.416 (0.13)***
	LN Unempl. Rate	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Age-Dep. Ratio*	*Mean Autonomy*	*Mean Autonomy*
DV Unemployed X						
Mean Associational Connectedness	-0.114 (0.28)		-0.133 (0.19)		-0.254 (0.20)	
Mean Generalised Social Capital		-0.192 (0.26)		-0.122 (0.19)		-0.338 (0.20)+
Covariate	0.201 (0.38)	0.168 (0.30)	-0.050 (0.02)**	-0.048 (0.02)*	0.039 (0.22)	0.089 (0.28)
	LN Unempl. Rate	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Age-Dep. Ratio*	*Mean Autonomy*	*Mean Autonomy*
Intercept	8.778 (0.18)***		8.775 (0.19)***	8.772 (0.17)***	8.753 (0.14)***	8.758 (0.15)***
Variance Life-Satisfaction (Individual)	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***	4.168 (0.01)***
Variance Life-Satisfaction (Societal)	0.127 (0.04)***	0.130 (0.04)**	0.132 (0.04)**	0.129 (0.05)**	0.063 (0.02)**	0.072 (0.03)**
Variance DV Unemployed	0.191 (0.05)***	0.185 (0.06)***	0.150 (0.06)**	0.152 (0.06)*	0.204 (0.06)***	0.193 (0.07)**
-2loglikelihood	196776.8	196757.0	196769.6	196769.4	196749.4	196763.4
AIC	196810.8	196811.2	196803.8	196803.5	196783.5	196787.6
BIC (sample-size adjusted)	196902.3	196902.7	196895.2	196895.0	196875.0	196879.0

Significance values: +p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

Unempl. Rate: Unemployment rate, logarithmised ; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal); Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

did not appear to be robust when we consider what social capital resources individuals had.

The opposite could be observed for mean autonomy. In the simpler multi-level analysis no effect was found. After the inclusion of the structural paths we could observe a substantial (-0.199) negative interaction effect with unemployment. This means that the variation in the effect of unemployment on life-satisfaction between countries (variation that was not explained by individual-level factors) could be partially explained by mean autonomy. Higher levels of mean autonomy were then associated with a stronger negative effect of unemployment on life-satisfaction compared to countries with lower levels of mean autonomy. It becomes difficult to assess the role of autonomy here: The exploratory models with European and Anglo-Saxon countries suggested a positive interaction effect, the multilevel models with only European countries suggested no effect at all and after taking into account factors explaining individual-level variation we found a negative interaction effect. This does not mean that there is no bias by including or excluding Anglo-Saxon societies – the issue needs to be considered separately. However, it seems that the role of country-level perceptions of autonomy is more complex in either case and warrants further analysis.

The results for contextualising the effects of unemployment with social capital variables at the country-level also changed when including the structural paths (table 5.14). Similarly to the previous analysis, the amount of between-country variation in the unemployment effect (and
mostly also in life-satisfaction) has been reduced substantially. The remaining amount of variance was largely explained by some societal-level variables. On their own, both domains of country-level social capital remained insignificant as main and cross-level interaction effects. In the specifications where LN GDP/cap was included (3 and 4) however this changed. There was a substantial, positive cross-level interaction effect between mean associational connectedness (0.574) when controlling for LN GDP/cap. This suggests that when economic development was taken into account and individual-level variation was explained, then higher levels of country-level associational connectedness was associated with a mitigating effect of unemployment on life-satisfaction. In other words, in this more comprehensive

Table 5.13: Cross-level interaction effects and structural path models for societal covariates

	1	2	3	4	5
INDIVIDUAL LEVEL					
Life-Satisfaction ON					
DV Unemployed	3.129 (0.10)***	3.113 (0.10)***	3.002 (0.10)***	3.153 (0.14)***	2.474 (0.02)***
Low Connection Membership	8.076 (0.09)***	8.021 (0.09)***	7.882 (0.08)***	8.143 (0.08)***	7.213 (0.06)***
High Connection Membership	-4.710 (0.06)***	-4.677 (0.06)***	-4.598 (0.05)***	-4.747 (0.05)***	-4.206 (0.04)***
Generalised Social Capital	-0.197 (0.01)***	-0.191 (0.02)***	-0.179 (0.01)***	-0.203 (0.02)***	-0.116 (0.01)***
Female	0.044 (0.03)$^{+}$	0.045 (0.03)	0.042 (0.03)	0.043 (0.05)	0.041 (0.03)
Age	-0.079 (0.01)***	-0.080 (0.01)***	-0.079 (0.01)***	-0.078 (0.01)***	-0.081 (0.01)***
Age^2	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	-0.553 (0.07)***	-0.550 (0.08)***	-0.547 (0.06)***	-0.561 (0.07)***	-0.509 (0.06)***
LN Income	-0.017 (0.02)	-0.021 (0.02)	-0.021 (0.02)	-0.015 (0.02)	-0.008 (0.02)
DV Married	0.350 (0.06)***	0.357 (0.05)***	0.356 (0.05)***	0.347 (0.06)***	0.353 (0.05)***
DV Children	0.017 (0.05)	0.020 (0.07)	0.020 (0.06)	0.018 (0.05)	0.020 (0.05)
DV Unemployed ON					
Low Connection Membership	-50.51 (1.70)***	-50.51 (2.63)***	-50.51 (1.84)***	-50.51 (1.82)***	-50.51 (1.70)***
High Connection Membership	27.87 (0.95)***	27.87 (1.45)***	27.87 (1.05)***	27.87 (1.04)***	27.87 (0.99)***
Generalised Social Capital	4.292 (0.17)***	4.292 (0.24)***	4.292 (0.20)***	4.292 (0.18)***	4.292 (0.16)***
LN Income	0.103 (0.14)	0.103 (0.14)	0.103 (0.14)	0.103 (0.23)	0.103 (0.14)
DV Higher Degree	1.870 (0.44)***	1.870 (0.48)***	1.870 (0.52)***	1.870 (0.47)***	1.870 (0.49)***
Low Connection Membership ON					
LN Income	0.437 (0.02)***	0.437 (0.02)***	0.437 (0.02)***	0.437 (0.02)***	0.437 (0.01)***
DV Higher Degree	0.567 (0.04)***	0.567 (0.05)***	0.567 (0.04)***	0.567 (0.04)***	0.567 (0.03)***
High Connection Membership ON					
LN Income	0.516 (0.03)***	0.516 (0.03)***	0.516 (0.03)***	0.516 (0.03)***	0.516 (0.03)***
DV Higher Degree	0.760 (0.06)***	0.760 (0.08)***	0.760 (0.07)***	0.760 (0.06)***	0.760 (0.05)***
Generalised Social Capital ON					
LN Income	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***
DV Higher Degree	0.368 (0.01)***	0.368 (0.02)***	0.368 (0.02)***	0.368 (0.03)***	0.368 (0.02)***
SOCIETAL LEVEL					
Life-Satisfaction ON					
LN GDP/cap	-0.002 (0.40)	-0.232 (0.56)	0.127 (0.37)	0.053 (0.47)	-0.038 (0.35)
Covariate		-0.298 (0.37)	0.261 (0.32)	-0.016 (0.03)	0.220 (0.24)
		LN Inflation	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
DV Unemployed X					
LN GDP/cap	0.052 (0.25)	0.264 (0.21)	0.110 (0.16)	0.026 (0.15)	-0.083 (0.04)$^{+}$
Covariate		0.200 (0.23)	0.013 (0.14)	-0.008 (0.02)	-0.199 (0.06)***
		LN Inflation	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Mean Autonomy*
Intercept Life-Satisfaction	8.223 (0.02)***	8.527	8.294 (0.20)***	8.135 (0.22)***	8.264 (0.23)***
Variance Life-Satisfaction (Individual)	3.009 (0.03)***	3.013 (0.02)***	3.012 (0.02)***	3.011 (0.03)***	3.027 (0.03)***
Variance Life-Satisfaction (Societal)	0.119 (0.10)	0.168 (0.18)	0.100 (0.08)	0.125 (0.15)	0.130 (0.13)
Variance DV Unemployed	0.020 (0.02)	0.015 (0.02)	0.007 (0.01)	0.007 (0.01)	0.001 (0.00)
-2loglikelihood	497668.8	497712.6	497678.2	497673.0	497864.0
AIC	497738.9	497786.7	497752.3	497747.1	497938.2
BIC (sample-size adjusted)	497927.2	497985.8	497951.4	497946.2	498137.3

Significance values: $^{+}$p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children;

Low Connection Membership, High Connection Membership and Generalised Social Capital are saved factor scores from latent variables (based on specification (6) in table 5.7)

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; LN Unempl. Rate: Unemployment rate, logarithmised; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal)

Table 5.14a: Cross-level interaction effects and structural path models for societal social capital and covariates

	1	2	3	4	5	6
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	3.165 (0.14)***	3.179 (0.08)***	3.053 (0.03)***	2.882 (0.02)***	3.076 (0.20)***	3.251 (0.08)***
Low Connection Membership	8.085 (0.07)***	8.134 (0.06)***	7.863 (0.10)***	7.734 (0.10)***	7.944 (0.14)***	8.205 (0.07)***
High Connection Membership	-4.715 (0.04)***	-4.742 (0.04)***	-4.585 (0.07)***	-4.510 (0.07)***	-4.633 (0.08)***	-4.783 (0.04)***
Generalised Social Capital	-0.197 (0.01)***	-0.200 (0.01)***	-0.176 (0.01)***	-0.164 (0.01)***	-0.185 (0.02)***	-0.208 (0.01)***
Female	0.044 (0.03)$^{+}$	0.044 (0.03)$^{+}$	0.043 (0.04)	0.040 (0.03)	0.043 (0.03)	0.046 (0.03)
Age	-0.078 (0.01)***	-0.078 (0.01)***	-0.079 (0.01)***	-0.079 (0.01)***	-0.080 (0.01)***	-0.078 (0.01)***
Age^2	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	-0.555 (0.05)***	-0.563 (0.05)***	-0.548 (0.07)***	-0.540 (0.07)***	-0.544 (0.06)***	-0.568 (0.07)***
LN Income	-0.013 (0.02)	-0.012 (0.02)	-0.011 (0.02)	-0.009 (0.02)	-0.027 (0.08)	-0.012 (0.02)
DV Married	0.352 (0.06)***	0.348 (0.06)***	0.355 (0.06)***	0.354 (0.06)***	0.360 (0.08)***	0.349 (0.08)***
DV Children	0.016 (0.05)	0.017 (0.05)	0.017 (0.05)	0.014 (0.07)	0.022 (0.10)	0.016 (0.05)
DV Unemployed ON						
Low Connection Membership	-50.51 (2.27)***	-50.51 (1.75)***	-50.51 (2.19)***	-50.51 (1.73)***	-50.51 (2.58)***	-50.51 (2.06)***
High Connection Membership	27.87 (1.28)***	27.87 (0.99)***	27.87 (1.25)***	27.87 (1.01)***	27.87 (1.44)***	27.87 (1.17)***
Generalised Social Capital	4.292 (0.19)***	4.292 (0.16)***	4.292 (0.19)***	4.292 (0.21)***	4.292 (0.23)***	4.292 (0.21)***
LN Income	0.103 (0.13)	0.103 (0.12)	0.103 (0.16)	0.103 (0.15)	0.103 (0.14)	0.103 (0.16)
DV Higher Degree	1.870 (0.43)***	1.870 (0.41)***	1.870 (0.56)***	1.870 (0.49)***	1.870 (0.48)***	1.870 (0.41)***
Low Connection Membership ON						
LN Income	0.437 (0.01)***	0.437 (0.01)***	0.437 (0.03)***	0.437 (0.03)***	0.437 (0.02)***	0.437 (0.02)***
DV Higher Degree	0.567 (0.04)***	0.567 (0.04)***	0.567 (0.04)***	0.567 (0.04)***	0.567 (0.04)***	0.567 (0.04)***
High Connection Membership ON						
LN Income	0.516 (0.03)***	0.516 (0.02)***	0.516 (0.05)***	0.516 (0.04)***	0.516 (0.03)***	0.516 (0.03)***
DV Higher Degree	0.760 (0.06)***	0.760 (0.06)***	0.760 (0.06)***	0.760 (0.07)***	0.760 (0.06)***	0.760 (0.07)***
Generalised Social Capital ON						
LN Income	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.01)***
DV Higher Degree	0.368 (0.02)***	0.368 (0.01)***	0.368 (0.02)***	0.368 (0.02)***	0.368 (0.03)***	0.368 (0.02)***
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	-0.155 (0.36)		-0.344 (0.37)		-0.332 (1.48)	
Mean Generalised Social Capital		-0.214 (0.36)		0.231 (0.41)		-0.403 (0.21)*
Covariate			0.220 (0.58)	-0.375 (0.46)	-0.299 (0.42)	-0.314 (0.18)$^{+}$
			LN GDP/cap	*LN GDP/cap*	*LN Inflation*	*LN Inflation*
<u>DV Unemployed X</u>						
Mean Associational Connectedness	0.186 (0.25)		0.574 (0.07)***		0.316 (0.50)	
Mean Generalised Social Capital		0.123 (0.15)		-0.061 (0.03)*		0.287 (0.44)
Covariate			-0.178 (0.06)**	0.045 (0.03)	0.102 (0.29)	0.109 (0.33)
			LN GDP/cap	*LN GDP/cap*	*LN Inflation*	*LN Inflation*
Intercept Life-Satisfaction	8.190 (0.20)***	8.137 (0.21)***	8.206 (0.30)***	8.274 (0.02)***	8.642 (0.21)***	8.201 (0.25)***
Variance Life-Satisfaction (Individual)	3.009 (0.02)***	3.010 (0.02)***	3.014 (0.03)***	3.014 (0.03)***	3.010 (0.03)***	3.010 (0.03)***
Variance Life-Satisfaction (Societal)	0.117 (0.07)$^{+}$	0.112 (0.07)$^{+}$	0.103 (0.12)	0.086 (0.10)	0.225 (0.43)	0.061 (0.04)
Variance DV Unemployed	0.020 (0.02)	0.010 (0.01)	0.001 (0.00)	0.001 (0.00)	0.034 (0.03)	0.005 (0.01)
-2loglikelihood	497656.6	497658.6	497699.0	497696.0	497703.0	497633.8
AIC	497726.7	497728.7	497773.0	497770.0	497777.0	497797.9
BIC (sample-size adjusted)	497915.0	497917.0	497972.1	497969.0	497976.1	497907.0

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children; Low Connection Membership, High Connection Membership and Generalised Social Capital are saved factor scores from latent variables (based on specification (6) in table 5.7)

LN GDP/cap: Gross-domestic product per capita in US$ (PPP), logarithmised; LN Inflation: Inflation rate, logarithmised; Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

model, respondents from countries with lower levels of associational social capital had a more negative impact of unemployment than respondents in countries with higher associational social capital. There was also a negative interaction effect for LN GDP/cap – as found in a previous specification, suggesting that in countries with higher economic development – after taking the structural paths into account – unemployment had a stronger negative effect. This effect for LN GDP/cap, it appears, depended on the national level covariates – it was not a robust effect, but highlights that it seemed to be relevant when taking into account certain factors. It did not show a substantial or significant cross-level interaction effect in model (4) where the generalised social capital domain was included. However, this form of social capital was shown to have a negative cross-level interaction effect, suggesting that in countries with higher levels of generalised social capital unemployment had a stronger negative effect on life-satisfaction. Although this effect was not observable for all configurations of covariates, it is worth highlighting, as it showed the first distinction between the two social capital domains at the country-level. The interaction effects found here were significant and pointed in opposite directions, which suggests that it may indeed be worthwhile to distinguish between them, while the previous analyses seemed to suggest that both domains behaved in the same way at the country-level throughout.

We find further indications for this in specification (6) where LN Inflation was included. There were no significant interaction effects, but substantial and significant main effects – but only for the specification with mean generalised social capital – suggesting here that when controlling for inflation and having accounted for individual-level variation, generalised social capital actually may have a negative effect on life-satisfaction.

Similarly, for unemployment rates and age-dependency ratios we find significant interaction effects only when mean generalised social capital was included. With regards to the former specification (8), both unemployment rates and generalised aggregate social capital showed negative cross-level interaction effects,

Table 5.14b: Cross-level interaction effects and structural path models for societal social capital and covariates

	7	8	9	10	11	12
INDIVIDUAL LEVEL						
Life-Satisfaction ON						
DV Unemployed	3.160 (0.20)***	2.658 (0.02)***	3.207 (0.11)***	2.414 (0.00)***	2.622 (0.02)***	2.170 (0.01)***
Low Connection Membership	8.062 (0.06)***	7.380 (0.06)***	8.154 (0.08)***	7.097 (0.05)***	7.365 (0.08)***	6.790 (0.06)***
High Connection Membership	-4.700 (0.04)***	-4.302 (0.04)***	-4.752 (0.05)***	-4.139 (0.03)***	-4.295 (0.05)***	-3.962 (0.04)***
Generalised Social Capital	-0.195 (0.01)***	-0.131 (0.01)***	-0.204 (0.01)***	-0.107 (0.01)***	-0.131 (0.01)***	-0.078 (0.02)***
Female	0.045 (0.04)	0.042 (0.03)	0.045 (0.03)	0.039 (0.03)	0.042 (0.02)	0.038 (0.03)
Age	-0.079 (0.01)***	-0.080 (0.01)***	-0.078 (0.01)***	-0.080 (0.01)***	-0.081 (0.01)***	-0.082 (0.01)***
Age²	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
DV Higher Degree	-0.556 (0.06)***	-0.522 (0.06)***	-0.567 (0.06)***	-0.505 (0.05)***	-0.516 (0.02)***	-0.484 (0.05)***
LN Income	-0.015 (0.02)	-0.000 (0.02)	-0.010 (0.02)	-0.002 (0.03)	-0.012 (0.02)	-0.002 (0.01)
DV Married	0.354 (0.05)***	0.353 (0.06)***	0.347 (0.07)***	0.355 (0.07)***	0.357 (0.05)***	0.358 (0.05)***
DV Children	0.017 (0.05)	0.016 (0.05)	0.018 (0.52)	0.017 (0.05)	0.019 (0.05)	0.018 (0.05)
DV Unemployed ON						
Low Connection Membership	-50.51 (1.77)***	-50.51 (2.12)***	-50.51 (2.29)***	-50.51 (2.05)***	-50.51 (2.45)***	-50.51 (2.04)***
High Connection Membership	27.87 (1.00)***	27.87 (1.22)***	27.87 (1.30)***	27.87 (1.20)***	27.87 (1.38)***	27.87 (1.15)***
Generalised Social Capital	4.292 (0.18)***	4.292 (0.17)***	4.292 (0.22)***	4.292 (0.16)***	4.292 (0.26)***	4.292 (0.18)***
LN Income	0.103 (0.18)	0.103 (0.15)	0.103 (0.15)	0.103 (0.19)	0.103 (0.20)	0.103 (0.15)
DV Higher Degree	1.870 (0.48)***	1.870 (0.57)***	1.870 (0.50)***	1.870 (0.57)***	1.870 (0.52)***	1.870 (0.48)***
Low Connection Membership ON						
LN Income	0.437 (0.02)***	0.437 (0.01)***	0.437 (0.01)***	0.437 (0.02)***	0.437 (0.01)***	0.437 (0.01)***
DV Higher Degree	0.567 (0.04)***	0.567 (0.05)***	0.567 (0.04)***	0.567 (0.03)***	0.567 (0.07)***	0.567 (0.06)***
High Connection Membership ON						
LN Income	0.516 (0.02)***	0.516 (0.02)***	0.516 (0.02)***	0.516 (0.03)***	0.516 (0.02)***	0.516 (0.02)***
DV Higher Degree	0.760 (0.08)***	0.760 (0.08)***	0.760 (0.07)***	0.760 (0.06)***	0.760 (0.10)***	0.760 (0.08)***
Generalised Social Capital ON						
LN Income	0.394 (0.01)***	0.394 (0.00)***	0.394 (0.01)***	0.394 (0.01)***	0.394 (0.00)***	0.394 (0.01)***
DV Higher Degree	0.368 (0.02)***	0.368 (0.02)***	0.368 (0.03)***	0.368 (0.02)***	0.368 (0.02)***	0.368 (0.02)***
SOCIETAL LEVEL						
Life-Satisfaction ON						
Mean Associational Connectedness	-0.076 (0.45)		-0.156 (0.49)		-0.237 (0.60)	
Mean Generalised Social Capital		-0.113 (0.44)		-0.145 (0.50)		-0.313 (0.31)
Covariate	0.142 (0.35)	0.132 (0.38)	-0.008 (0.03)	-0.003 (0.03)	0.301 (0.24)	0.350 (0.22)
	LN Unempl. Rate	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Age-Dep. Ratio*	*Mean Autonomy*	*Mean Autonomy*
<u>DV Unemployed X</u>						
Mean Associational Connectedness	0.216 (0.42)		0.257 (0.21)		0.092 (0.04)*	
Mean Generalised Social Capital		-0.164 (0.05)***		-0.092 (0.00)***		-0.236 (0.02)***
Covariate	-0.040 (0.56)	-0.199 (0.07)**	-0.011 (0.02)	-0.014 (0.00)***	-0.187 (0.06)**	-0.097 (0.02)***
	LN Unempl. Rate	*LN Unempl. Rate*	*Age-Dep. Ratio*	*Age-Dep. Ratio*	*Mean Autonomy*	*Mean Autonomy*
Intercept Life-Satisfaction	8.222 (0.26)***	8.320 (0.19)***	8.110 (0.23)***	8.324 (0.21)***	8.191 (0.25)***	8.355 (0.21)***
Variance Life-Satisfaction (Individual)	3.009 (0.02)***	3.032 (0.03)***	3.010 (0.02)***	3.031 (0.02)***	3.020 (0.02)***	3.044 (0.02)***
Variance Life-Satisfaction (Societal)	0.109 (0.09)	0.103 (0.10)	0.124 (0.08)	0.112 (0.07)	0.126 (0.14)	0.086 (0.07)
Variance DV Unemployed	0.021 (0.04)	0.001 (0.00)	0.010 (0.02)	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)
-2loglikelihood	497653.2	497816.2	497667.4	497917.0	497781.8	498070.8
AIC	498047.9	497890.2	497741.6	497991.1	497855.9	498144.8
BIC (sample-size adjusted)	497930.3	498089.3	497940.6	498190.2	498055.0	498343.9

Significance values: $^{+}p \leq 0.10$ $*p \leq 0.05$, $**p \leq 0.01$, $***p \leq 0.001$.

N: 38513 individuals in 44 societies

Displayed are unstandardised estimates with standard errors in parentheses. Computations done using MLF estimation using Montecarlo integration over 500 integration points. All calculations done with MPLUS 6.11. Included are individuals that are categorised as employed/Self-employed or unemployed. Respondents outside the labour market (students, pensioners, etc.) are excluded.

Life-Satisfaction: 1- dissatisfied .. 10- satisfied; DV Unemployed: Self-classified; Age: in years; DV Higher Degree: Respondent holds a degree from a higher education institution; LN Income: monthly household income (PPP, €1000), logarithmised; DV Married: Respondent married; DV Children: Respondent has children; Low Connection Membership, High Connection Membership and Generalised Social Capital are saved factor scores from latent variables (based on specification (6) in table 5.7)

LN Unempl. Rate: Unemployment rate, logarithmised; Age-Dep. Ratio: 'Old' persons (65+) as percentage of 'working age' population (15-64), (2007); Autonomy: Mean self-evaluated amount of choice and control over one's life (1- none at all .. 10- a great deal); Mean Associational Connectedness: Mean of country-level mean scores for saved factor scores from Low/High Connection membership; Mean Generalised Social Capital: Country-level mean of saved factor scores for Generalised Social Capital

suggesting that in countries where unemployment was higher or generalised social capital was higher, the effect of personal unemployment was more negative (after applying the individual-level structural paths). The same could be observed for the age-dependency ratio model (10). Only with generalised social capital there were significant, negative cross-level interaction effects with unemployment, suggesting that in older-age societies and those with greater generalised social capital, unemployment had a more detrimental effect. For mean autonomy we find significant interaction effects for autonomy and both social capital domains. While the autonomy interaction effect was negative (as it was in the covariates-only model), the social capital interactions differed in direction. While for respondents in countries with greater levels of associational social capital the effect of unemployment was partially mitigated (0.092), the opposite applied for generalised social capital of a country (-0.097).

These results further substantiate that a distinction at the country-level between structural and dynamics-based conceptions of social capital may be relevant, when the focus of the analysis is on the actual amount of variation that is to be explained between countries – though the amount was rather limited.

5.4. Summary and conclusions

Social capital matters greatly when investigating how unemployment affects life-satisfaction. The involved relationships are complex however and require analyses that go beyond simple regression frameworks with or without interaction effects. Especially individual-level social capital alters the results for an analysis of unemployment effects extensively. Most importantly, when the effects of individual-level social capital on unemployment were taken into consideration through structural equation modelling, the effect of unemployment on life-satisfaction was reduced substantially. Some of the larger effects found previously were not direct effects of unemployment, but unmodelled artefacts of indirect effects of social capital through unemployment which were taken into account in the models presented in this chapter.

This is crucial for the understanding of the effects of unemployment, as it implies that the effect was not the same for all people. Those who held greater strong-tie network resources were able to mitigate parts of the negative effects of unemployment. It is important to distinguish between strong and weak ties, as additionally holding weak ties through more connected associational membership did not appear to have the same effect. Similarly, those with strong ties were less likely to be unemployed, but further engagement in weak-tie associations was not helpful in this regard. It is important to highlight these differences that have been explored in this chapter through a structural approach to social capital, as often the hypothesised desired outcomes are conflated in functional, cyclical definitions. While it may be desirable that people engage with each other beyond their close-knit, strong-tie based networks for many reasons, this does not mean that it is to their economic benefit. The desire for cross-group network interactions as a normatively desired state is not dismissed because of this. There may also be other positive outcomes that can be associated. But this research suggests that it would be wrong to assume that what may be desirable based on certain norms will also be beneficial in many other domains of societal processes for the individuals involved. Only through a distinction between function and structure can a proper analysis of the effects of such an influential concept as social capital be properly understood.

This is exemplified also when looking at the effects of generalised social capital and finding that those respondents who displayed a greater trust into others and believed in fair and helpful attitudes (probably reflective of their own practice to some extent) felt a stronger negative effect of unemployment on life-satisfaction. In turn those with an outlook reflecting selfishness and opportunism fared better. This is complementary to the distinction between weak and strong ties – as those with strong ties seemed to be able to better utilise them than those engaged in wider, more heterogeneous associational networks. This also shows that it is important to distinguish between the structural and the dynamical elements of social capital. While both, low connection social capital and generalised social capital had positive effects on life-satisfaction for example, their effects on and interaction with unemployment differed. Analyses that conflate the two dimensions are inadequate as they conflate difference that should be kept distinct.

The structural paths, predicting social capital by income and education and unemployment with social capital as well as those socio-economic variables were also important in another way. After including interaction effects between the fully modelled social capital variables and unemployment to predict life-satisfaction, the remaining effect of unemployment changed substantially. The total effect of course has to be calculated by combining interaction, indirect and direct effects. So to draw the conclusion that unemployment actually increased life-satisfaction would be inaccurate. It does strongly suggest though that the negative effect of unemployment on life-satisfaction that we usually observe in most studies is highly contextualised in individual-level social capital. It varies greatly between individuals in how it manifests and requires both structural and dynamic aspects of social capital to be taken into account. The effect of unemployment on life-satisfaction then cannot be accurately assessed without considering social capital both as a predictor of unemployment and an interaction effect with it.

This important finding is substantiated when paying closer attention to the results from the multilevel analysis and in particular when focusing on the variance components. Without taking into account structural paths predicting unemployment through social capital at the individual level there was a sizable amount of significant variation of the unemployment effect on life-satisfaction between

countries. Country-level social capital variables did not seem to be of particularly great importance with regards to cross-level interactions, but only had direct effects on life-satisfaction. This depiction however would be incomplete. The largest part of the variation in the random slope of personal unemployment was only there because it has not been explained at the individual level, although it could be through structural paths: Once social capital and income and education predicted unemployment, the amount of variation left at the country-level became very small. A lot of what we explained through cross-level interactions then was engaging with apparent cross-country differences that actually were reflective of individual-level structures. This suggests of course that the composition of individual-level social capital in countries may vary systematically between them, as simple multilevel models focusing on unemployment here and in chapter 3 picked up on systematic variation. However, if the variation is explained by differences in social capital variables at the individual-level it is most likely that these structural factors differ most substantially across countries. These structural differences then appear to influence the unemployment relationship to life-satisfaction, rather than national-level factors explaining the difference in experiencing unemployment comprehensively. It may be hypothesised that the causal pathway runs from national-level factors (in different domains) through frameworks for individual-level social capital that then moderate the personal experience of unemployment.

There appears to be some variation left in individual unemployment that, after accounting for individual-level social capital priors, could be explained by different country-level predictors. While those relationships remain interesting observations, the very limited variation left to explain suggests that the focus of further analyses should be placed on the framework suggested above.[66]

[66] Concrete suggestions for further research are discussed in the following chapter.

6. Qualitative extensions

6.1. The rationale for qualitative extensions

It is worth reflecting that there are limits to using quantitative methods as summaries of particular processes. Crucially they allow us to make statements about groups of people as a whole, but that means of course that we are looking at general trends or manifestations. We do not understand the detailed cognitive processes that are associated with the decisions made based on the subjective evaluations that are undertaken. Qualitative research is more suited to provide answers to questions of meaning and understanding.

For this project this applies in particular when considering the complexity of the notion of subjective well-being (as discussed in chapter 2). The analyses focused on life-satisfaction. This is meaningful and adequate for the focus of the investigation, but it means also that the results need to be interpreted within this framework. They do not allow for the prediction of personal decisions of individuals in each particular situation through a deterministic mechanism. While it could be shown that factors other than income or contextual wealth strongly affect the impact of unemployment, we do not know from this how affected individuals perceive the experience subjectively. This relates back to the concept of Kahnemann et al.'s (2006) *focusing illusion*. The analyses shown here do not tell us whether people are aware of the alleged mechanisms discussed here. From this we cannot answer questions about the relevance of the concepts to individuals perceptively or how important the alleged notions are to them subjectively.

A qualitative extension of this project would be highly insightful. Through this, one could explore the meaning people attribute to subjective well-being consciously, explore what personal meaning their social networks have and what role paid employment plays in their lives. It could help find explanations for some of the empirical findings presented in this study and would allow us to better see which concepts may be cognitively relevant in the life practice and which concepts may be more of research frameworks which are applied.

During the work on this project two pilot focus groups were conducted to explore the potential use of a qualitative extension to the project. Due to time and resource constraints these focus groups could not be continued within the framework of this particular study. The initial results from the two pilots however highlight convincingly how a continuation of the project not only in a quantitative way could be of great benefit – particularly if done in conjunction. Here, one brief example from the pilot studies will be presented to illustrate how the knowledge generated through this approach can create knowledge that compliments and enhances the quantitative findings and additionally may re-inform the quantitative investigation.

6.2. Conducting the pilot focus groups

Focus groups have a number of strengths that would be of great benefit to a qualitative extension and were the reason why they were chosen as pilot examples for this study. Their main quality lies in the interactions between the participants. While a moderator steers the general direction of the discussion and facilitates the discussion, the most important characteristics is that in a flexible focus group design, participants will not only be asked to respond to specific questions, but will determine what issues they consider relevant to the topics discussed (Stewart & Shamdasani 1990). Other than in large-scale surveys, answering frames are much less restrictive and permit the introduction of fields of interest that might have been totally neglected in a survey design, but appear to be of relevance for the individuals engaged in the focus group (Knodel 1993).

The two pilot focus groups conducted both took place in Bremen, Germany, during August 2010. Both groups were homogeneous with regards to labour market status, meaning that the members of one group all were in employment while those of the other group all were unemployed (similar to the distinction used in the quantitative analyses). It was important to separate participants into these two groups, as otherwise it would have been likely for hierarchical structures within the groups to emerge (Green & Hart 1999). As employment and unemployment were elementary topics in the discussion the participants would have identified with one or the other group in the room – a polarisation that was to be avoided to enable open conversation. At the same time, a good degree of heterogeneity regarding socio-

demographic characteristics (such as age, gender and marital status) was aimed for to explore different experiences and life stories (Morgan 1997). Analogous to the quantitative analyses, no students or pensioners were included, but only people who were currently part of the labour market.

To establish a certain common ground for conversation and to ease recruitment, both groups of participants were approached as members of large scale institutions. All members of the employee group were working for Jacobs University Bremen, a private university with over 300 staff members. The members of the unemployed group were recruited through the Arbeit- und Lernzentrum Bremen, alz (Work and Learning Centre Bremen). This institution trains over 200 currently unemployed people to gain employment through a multitude of practical workshops mainly in the North of Bremen – close to where the Jacobs University is located as well. Both institutions allowed for some familiarity with regards to general structures and some joint identification by participants, but were also large enough to ensure that participants were not in too close a relationship to each other, in particular avoiding dependency relationships to emerge in the focus groups which would have reduced the openness of participants. Both focus groups were conducted on site (Jacobs University and one of the locations of the alz respectively) and lasted for about 80 minutes. Food and drinks were provided in both cases to participants. Additionally, a ten Euro cash compensation was paid to the unemployed participants from the alz – in accordance with general practice as suggested by Greenbaum (2000). Of ten recruited participants at the alz nine took part; of the eight recruited participants at Jacobs University six took part.[67] All participants were guaranteed that their responses would be treated anonymously.

The design of the focus groups followed a traditional general-to-specific approach (Krueger 1988). A discussion guide was developed which consisted of several sections with more open discussion topics as well as moderated exercises to establish, for example, how comfortable people were to decide on and rank domains contributing to their happiness.[68] Some sections were not used to the full extent if the respective questions were discussed already in the context of another

[67] Recruited persons who did not participate excused themselves on the day stating that they were ill.
[68] The discussion guide used can be found in the appendix.

domain. The principle to begin with very open-ended instructions ("What is happiness to you?") and develop higher levels of complexity (connecting happiness, work and social networks) was applied throughout though.

6.3. Example: The importance of income in context

Employment is closely connected to income and the relevance of personal income for life-satisfaction, but also as a predictor of unemployment and social capital has been demonstrated in this project again. Using the survey we find that unemployed people are likely to have a lower income, that higher income and greater levels of social capital are associated with each other and that, comparatively, people with higher income have higher levels of life-satisfaction. All these statements are empirically true, but what they may not reveal is how the meaning of the income differs substantially between different groups of people.

When discussing income and financial security with the employed focus group, there was general agreement about the role of it. Money was needed for well-being, as a means to purchase goods and to maintain one's family, but most importantly it was needed to enable oneself to do the things that were assumed to bring enjoyment and content. In this the participants continued to emphasise that money was not important for its own sake, but because of its foundational nature for other things that brought real happiness. The source of the money mattered greatly all respondents claimed: Money earned through labour was to be valued much higher than inherited money for example. Paid work therefore had more functions than merely to provide money, it was seen to enable friendships and to add meaning to one's life. The unemployed group expressed similar attitudes. Not working was seen by many of them as very negative, something that "hurts"[69] not just because of limited financial resources, but because of not being able to "do something that makes others happy" or that enabled one "to get out." At first sight, the role of income and work appeared to be very similar – just reported from different labour market positions.

[69] Direct quotes translated from German.

When continuing the discussion however, substantial differences emerged. When asked to identify and rank the things that they considered most important for their well-being and their happiness, nobody in the employed group put material aspects on top of their lists. Family and health dominated those rankings. In the unemployed focus group however, a different image emerged. About half of the respondents ranked material aspects as the highest, the most important. This finding would conform to simple microeconomic principles: When you have less of something, it will be more desirable than when you have it. So in itself, this finding would not be surprising or adding much additional insight to the quantitative analyses. It would be reflective of the notion that people aspire to gain higher income and that higher income would be associated with greater levels of satisfaction and thus less emphasis being placed on this particular goal.

A more detailed look at the statements in the focus group reveals however that the greater importance of materialistic resources for the unemployed group is more complex. Very interestingly, the employed group hardly talked about themselves when discussing these issues. Rather than talking about the effect their employment and the resulting income had on them, they tended to talk about what it would mean to not be employed. Having material resources was not at the core of their elaborations, but instead they focused on what unemployed people do and how they are worse off. They ascribed negative functions to a generic group of people (not actual persons they knew) and generalised about the situation comprehensively. One participant for example exclaimed:

> "Well, when I am an unemployed person, and I go to the job centre weekly to talk to my advisor and get only my little money and I go home again, and I sit down in front of the television, of course I do not gain any social contacts."

The discussion of income remained largely based on counterfactuals and abstract terms. It was exclaimed that income from work was to be valued higher than other forms of financial resources, but the discussion was more of an intellectually disengaged one than a discussion of actual experiences. The role of paid income therefore was not simply ranked lower on the factors affecting well-being, but it was

conceptually distinct from the factors that were discussed much more personally and appeared to vary more imminently (such as health or family relations).

The conversations in the focus group with unemployed participants evolved very differently. Strong debates emerged after the ranking task. Particularly the younger participants had ranked income the highest, whereas older participants placed it in lower positions. In itself this is interesting, because it highlights that there is not just one distinguishing factor (employed/unemployed, but a complex set that crosses through the discussions about the concepts). In contrast to the employed group the discussion showed one consistent difference though: Nearly all arguments were made from personal experience. The level of abstraction was much lower. This applied to discussing one's own background, but it also applied to situating responsibility for one's situation. Participants in the employed group commonly referred to institutions of the state when discussing levels of income and well-being and placed blame on employers and those institutions for shortcomings in their personal situation. In contrast, participants in the unemployed group tended to situate the reasons for their opinions and situations in their own personal history, in particular with regards to failures they felt they conducted. The blame was often very much internalised.

Consequentially, money was not discussed as a mirror image to how it was talked about in the employed group. It was not conceptualised in terms of what people with money do and how that would be desirable. Instead, it was about the very personal experiences with having and not having different types of income and how they could be used. The debate in the group mainly focused on accusations of the older participants that even when you do not have much money or when you are unemployed, there are things that are even more important, such as family and friends. The debate became quite intense when one young participant (21 years old) who had not said very much previously, talked about why she ranked money so highly. She explained that for her "money equalled independence," but not simply in that she would be able to purchase goods. The reason for her to try to get a job was not, as she explained, because the state benefits were too low - although she talked about periods where she could not afford food at the end of the month and basic needs problems that would be associated with lower income. The key aspect

for her was that earning money for her was conceptually the same as being a full person, rather than an "ABM."[70] Describing herself as ABM, which is a term applied to a measure, not to a person, illustrated how intrinsically the notion of earning money through doing a job was interwoven with her identification as a person rather than a measure. It was not about the amount of money primarily, but about the desire to overcome a feeling of not belonging to society. Income for her had a completely different role than for the employed people. For them income was seen as a means to sustenance and beyond that the fulfilment of enjoyable activities, to reach a good living standard. For the young unemployed respondent income from paid labour identified her as a functioning member of society – before making any considerations of what elements would constitute a good living standard.

This example is of course by no means comprehensive as it is only based on two focus groups and thus a very limited sample. But it helps to illustrate the meaningfulness of conducting qualitative analyses in this research field in conjunction with the quantitative investigations. When the role of something like income from paid work (and by association the role of paid work) varies conceptually across different groups of respondents, quantitative analyses either model these differences or have to simplify the findings. The impact of income on life-satisfaction may appear to be linear, but the reasons for why this is the case may be situated in differences in conceiving of the role income has at different levels, rather than the amount per se. Such findings from qualitative analyses (if substantiated through a greater number of participants and replication in different settings) could helpfully inform further quantitative investigations by identifying relevant sub-groups for which to build the models. At the same time they can help to better interpret the empirical findings by qualifying some of the claims made on the applicability of the indicators across survey respondents.

[70] Arbeitsbeschaffungsmaßnahme (job creation measure)

7. Conclusions

7.1. Relevance

The findings and implications of this thesis (both quantitative and qualitative) are not merely of academic interest. The *Measuring well-being* project of the UK Office of National Statistics (ONS), already referred to in the introduction, "... aims to produce accepted and trusted measures of the well-being of the nation - how the UK as a whole is doing" (ONS 2012, p. 41). This project (one amongst many projects that aim to broaden the scope of evaluating societal well-being with measures beyond GDP and in particular by including subjective indicators) is designed to justify and affect policy as well as discourse about the issues under scrutiny.

The most recent report (ONS 2012) summarises the results from applying the chosen measures of subjective well-being to the Annual Population Survey. After the initial conceptualising stages it shows to what extent the complexity of assessing subjective well-being has been taken into account after the extensive consultation process that has been taking place since autumn 2010. The results are disappointing. The types of analyses presented are the same as the ones that have been shown in previous working papers before or during the consultation process (Waldron 2010; Evans 2011). The analyses are focused on absolute levels of well-being indicators such as life-satisfaction (pp. 18) that at best correlate the indicators to other variables – and maybe control for some basic demographic differences (such as gender). Instead of actually questioning the meaningfulness of the indicators critically, simple assumptions are formulated. For example, when finding that nearly all regions had the same level of life-satisfaction with only London deviating, the assumption is made that this was because of the younger population profile (p. 20). No tests are conducted, no literature that discussed the complex structure of the age relationship are consulted.

Unemployment is also discussed in the report, quite a large proportion is dedicated to the effects of unemployment on life-satisfaction, broken down by a few characteristics such as gender (pp. 28). There is no provision of contextualisation at all. The use of the measures is suggested to be absolute without the consideration

of prior variables that explain the embeddedness of an individual within social networks. Neither are aggregate context factors considered as relevant for the development of the measures – although their relevance (at least for economic indicators) has been presented already in 1994 (Clark & Oswald). Unsurprisingly then, concerns for causality are large ignored.

Of course, a report by the ONS which is meant to be foundational in developing the indicators, not their application, cannot capture all the methodological complexities of an academic research agenda. But to ignore obvious and basic influences on the measures that are presented is not simply careless but highly problematic. These indicators are far from the intended 'trusted measures' but are portrayed as such. Considering the evidence presented in this thesis, it is clear that reliance on the ONS constructs in the way suggested would produce highly distorted pictures of analyses of unemployment and life-satisfaction. Reported effects would be likely to be dependent on contexts which had been ignored. Policy recommendations would therefore be misleading and unlikely to be successful in practice.

Most worrying is that implicitly all the indicators presented and the reports and narratives that follow are not neutral but perpetuate a particularised understanding of how societal structures should be modelled. Individuals in these ONS reports are conceived of as independent units that have certain characteristics. To understand society, we simply need to measure their characteristics and aggregate them. Personal and aggregate contexts are ignored. This is the exact opposite of the understanding of society that Adam Smith aimed to perpetuate. For him a society had to be conceived of as an entity which is more than the sum of its parts. And those parts would have to work together not merely as individual units, but as connected elements that together influence and are shaped by contextual factors in order to allow for a society to not just function, but to be happy (1790/2009, pp. 103).

The approach reflected in the ONS reports points into the exact opposite direction. Engaging with these claims and showing the relevance of contextualising the effects of unemployment on life-satisfaction therefore becomes an issue that researchers need to bring onto the policy agenda, if we want to make sure that measures of

happiness are not used to perpetuate conceptions of society which may not be able to even conceptualise the well-being of societies.

The findings in this thesis highlight the relevant complexities which are missed by approaches such as the one employed by the ONS. After summarising the key results a discussion of the limitations of this project helps to present strategies for further research into this topic. Such approaches could help overcome some of the problems current analyses, using less comprehensive approaches (as illustrated with the ONS example), face.

7.2. Summary of key findings

7.2.1. Context matters

That there is an effect of unemployment on life-satisfaction has been confirmed again by this study. The idea that unemployment could be viewed as a decision that is conceptualised as solely dependent on the price mechanism associated with labour costs and enumeration has been shown to be too simplistic an understanding (by several previous studies as well as this one). However, as a few others have suggested as well (Clark 2003; Clark & Oswald 1994; Di Tella et al. 2001), the relationship of unemployment and life-satisfaction is not only determined by personal factors. Context matters and it does so in multiple ways. This study focused on differences between European (and in part Anglo-Saxon) countries. The effect of unemployment on life-satisfaction varies systematically when taking into account certain country-level factors. Most importantly, economic indicators did not always appear to be the most important ones, but socio-demographic and attitudinal differences between countries may actually explain better why unemployment hurts more subjectively in some countries than in others. While some economic variables (such as unemployment rates) at first appeared to be important contextualising factors (measured as the cross-level interaction effect for the unemployment and life-satisfaction relationship), the relationships were often altered in more comprehensive models. Based on the most comprehensive models of the exploratory analyses presented in chapter 3, unemployment had a negative effect on life-satisfaction. This effect however was partially mitigated in countries with comparatively higher inequality and greater mean perceptions of autonomy. In contrast the negative impact of unemployment was increased in countries where female labour force participation was greater, the age-dependency ratio is higher (more old people relying on fewer younger ones) and the emphasis on work as an identifying characteristic was greater.

Controlling for these factors, we indeed found that the size of the impact of unemployment on life-satisfaction varied greatly between the different countries. Most strikingly these results provide doubts about traditional welfare state arguments with regards to the effect on unemployment. The negative effect of unemployment did not appear to be reduced in more extensive welfare regimes. On

the contrary, the loss in life-satisfaction was substantially greater in European welfare states such as Germany and France when compared to the other end of the spectrum with liberal welfare regimes such as the USA. While greater redistribution of income may be justified by its intrinsic merits, living in an extensive welfare state-based country did not appear to provide protection against the personal negative impact of unemployment. Neither could it be argued that individuals who live in more welfare-oriented regimes become more complacent and choose these situations as their optimum. If that were true, then such countries should see a less prominent impact of unemployment on life-satisfaction, but as some others have suggested before (Ouweneel 2002), this was not the case here.

Such analyses could not be undertaken without the inclusion of country-level factors through multi-level modelling approaches. Trying to understand what effect unemployment has on life-satisfaction without incorporating contextual variables seems futile and misleading, as it presents people as disconnected units of analysis that are independent of the factors shaping the environment they live in. The environment (in the case of this project the national one) matters greatly however and needs to be considered in its complexity – beyond economic factors.

7.2.2. Context is complex

Several contexts can be important for a person simultaneously. Apart from a geographic (and associated societal) embeddedness in a country, individual-level contexts also affected people's perceptions and behaviour. To structurally distinguish between these levels social capital has been used in this project to not only allow for the modelling of country-level factors, but in particular to establish the network context people were embedded in. Social capital variables affected life-satisfaction, but even more importantly for the analyses here, they were associated with unemployment. Thus extending the simple regression models to structural path models allowed us to take into account selection biases with regards to unemployment (as shown in chapter 4) in order to identify the actual main effect of unemployment on life-satisfaction after establishing the indirect effect of social capital through unemployment. Personal differences in socio-economic variables mattered as well and also predicted unemployment – but furthermore, they also

predicted the relative abundance of social capital resources and thus reduced selection biases further.

The structural equation modelling approach chosen allowed us to take these factors into account and also to distinguish between different types of social capital (weak and strong tie prevalence as well as attitudinally-based dynamics) as they could be modelled simultaneously while estimating their correlations with each other. This has proven to be crucial as the different types of social capital did not behave in the same way in each instance. Structural and dynamic manifestations of social capital differed in effect on several occasions. Similarly, the high- and low- connection structural social capital often related differently to life-satisfaction and unemployment. Only through this approach (compared to more simplistic conceptualisations of social capital) could the highly contextualised nature of the unemployment and life-satisfaction relationship be revealed. The direct negative effect of unemployment did not appear manifest in addition to the effects taking into account social capital paths when interaction effects were included. In other words, understanding the negative effect of unemployment on life-satisfaction appears to be inseparably connected to the social capital resources an individual holds. Analysing it without taking into account those social capital variables would constitute the analysis of a partially spurious relationship. This does not mean that unemployment did not have a negative effect on life-satisfaction. But it means that this effect was not independent of personal social capital and varied substantially between individuals with different levels of personal social capital.

Situating this analysis again in a multi-level context further exemplified it. While there were contextualising effects (in terms of cross-level interactions) between aggregate covariates and the relationship between unemployment and life-satisfaction, they were less prominent and less robust than in the simpler multi-level regression analyses presented in chapter 3. This was mainly caused by the much more extensive amount of variation in the unemployment effect on life-satisfaction. The largest proportion of this effect was explained when the complex path models, incorporating social capital, were estimated. Only a fraction of the previously estimated amount that varied between countries could then still be observed, the rest was explained by individual-level characteristics. This is a very important finding

as it cautions against findings from more exploratory analyses such as the ones presented in chapter 3. Those may have detected systematic variation between countries according to some aggregate-level variables. But the variance that was explained there may have been spurious and actually explained by individual-level factors.

This does not mean of course that the relationship between unemployment and life-satisfaction should be understood as an individual-level relationship only. On the contrary, it suggests that we should re-evaluate how we make sense of where we focus on in contextualising analyses of unemployment and life-satisfaction. Several systematic cross-level interactions could be observed, at the same time many individual-level interactions between social capital and unemployment could be observed, too. Maybe it is not the unemployment effect itself that is dependent on national-level factors. Instead it could be very much embedded in the individual-level set up of social capital, paired with personal characteristics. Those personal social capital variables however may be influenced by country-level factors themselves. This could explain why we find both, the within- and the between-level, interactions when analysing them separately. If the cross-level interactions affect individual-level social capital and that in turn affects the unemployment and life-satisfaction relationship, the connection between the two levels could be shown more precisely. This could be done through SEM path modelling (figure 7.1 illustrates the general approach to this compared to the analyses in this project).
The analyses in chapter 4 also provide important insights for the application of social capital concepts more generally. As mentioned, the differentiation between network characteristics and the dynamics of social capital relations is important. Measures should not simply compile both domains (such as membership and trust) in simple composite scores or regression item batteries, but should treat them carefully and with distinction, also distinguishing between the different types of ties embodied in different associational membership patterns. The classification should not just be based on assumed characteristics of groups but supported by empirical patterns. All this reflects a structural approach to using social capital that does not prescribe particular functions and therefore avoids circularity in the argument made. It also allows us to distinguish between social capital as a characteristic of individuals and of societies, which is crucial as the effects of both are not analogous.

Finally, social capital is not just an important variable, but in itself is predicted substantially by differences in socio-economic status. Path models that take this into account allow for a reduction in bias and more accurate estimation of effects of social capital variables.

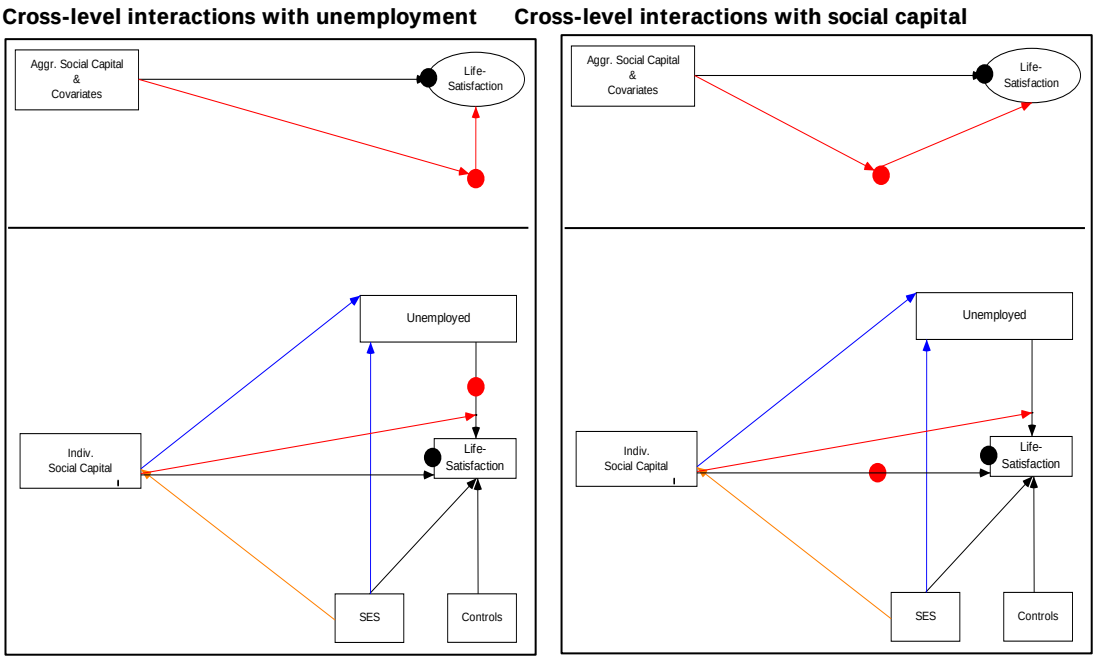


Figure 7.1: Shifting the aggregate contextualisation from unemployment to individual-level social capital

7.3. Limitations and suggestions for further research

7.3.1. Measurement and modelling issues

Complexity reduction

Several compromises had to be made in particular in the complex multilevel path models presented in chapter 4. Most significantly, latent variables could not be used in the multi-level estimations and therefore individual-level interaction effects had to be omitted to avoid non-identification. The saved factor scores that were used showed very similar results with regards to the unemployment effects, but at the same time not all individual-level results remained as robust. Full model estimation was attempted, but because of computing power limitations only an unsuitably small number of integration dimensions could be used. While the results were meaningful with regards to analysing the effects on variation in the random unemployment slope, it limits the amount of confidence that can be placed in the individual-level processes beyond that, as we could not see exactly how they behaved when national-level context factors were included. This applies to the individual-level interaction effects between social capital and the unemployment and life-satisfaction relationship in particular. A more comprehensive estimation approach would be desirable, however the number of countries included is too restrictive to be confident in multi-level SEM models (Hox et al. 2010). Either formulations have to remain simpler or datasets can be created in which social capital variables are available for more countries than the 44 European ones included here. However, unless the extension only incorporates Anglo-Saxon countries, this then poses the issue of cross-cultural validity of the life-satisfaction concept (Uchida et al. 2004; Lu & Gilmour 2004) which raises an additional concern not as prevalent in investigations of more homogeneous groups of countries. Depending on the focus of the research question these problems need to be weighed against each other – it seems unlikely that a general prescription could be derived.

Multilevel regression versus SEM

This concern is essentially also at the core of the discussion of advantages and disadvantages between SEM and multi-level regression approaches. The latter is more robust with smaller numbers of countries whereas the former faces the

estimation problems outlined above. With multilevel regression models we are able to include several aggregate-level covariates for 44 countries, as long as multicollinearity is acceptable and variance explained is meaningful. However, this variance may be partially spurious, as we have seen, and therefore the conclusions drawn partially misleading. However, the SEM analysis may be simplifying the aggregate level processes, while allowing for a more detailed understanding of individual-level processes. Here, for example, in the simpler multi-level path model approach, aggregate level social capital variables could not be correlated to each other. As their collinearity was rather high, they could not be included simultaneously, thus focusing more strongly on detail at the lower level. Both, SEM and multi-level regression are meaningful, but they help understanding different things. The multi-level regressions in this project allowed for an exploration of potentially relevant variables which could be demonstrated convincingly, permitting valid conclusions about differences between countries in the unemployment effect and that indicators beyond the economic domain are needed to understand that. However, this approach may have masked the importance of contextualisation – something that we could analyse using the SEM approach. So while both could not be combined fully, because of the limitations of the data and estimation algorithms, their findings yield complementary insights, although some gaps in the analysis remain.

Social capital indicators

The approach to empirically establish differences in tie-structures for associational membership, based on Paxton (2007) proved to be insightful. However, there are also limitations which should be considered. The latent constructs obviously assume applicability across all the countries included in the analysis. While it does not require that each type of association holds the same rank in each country with regards to connectedness, it does assume that the general structure of some associational types being more connecting than others holds. While the data roughly appears to support this, there are of course also differences. Associations do not necessarily play the same role in all contexts.[71] Ideally, a full multi-group confirmatory factor analysis (MGCFA) approach to invariance testing could be

[71] This is another aspect where the contextualising of personal social capital by country-level factors may be of great insight, because it would allow to partially model that.

applied to investigate the measurement equivalence across the countries included. With the complex set of indicators, including mainly binary, but also continuous items for generalised social capital and the very large number of countries for a MGCFA, the necessary complexity for the computations could not be achieved here. For future studies it may be worth assessing in more detail what different classifications would have meant for particular groups of countries. One could imagine that within certain restrictions composite scores could be built reflecting the empirical patterns of each country's associational connectedness manifestations – rather than using overall means. This has the advantage that the actual measures would be more closely reflective of each country's actual pattern. However, it would raise very substantial questions about the comparability of the measure. Scalar equivalence should probably be excluded by definition; however it might be worth exploring whether a metric approach to instrumentally engaging with the measures could be justified.

7.3.2. Generalisability and comprehensiveness

Causality

The analyses presented were all cross-sectional. They therefore do not allow for any direct, definitive causal inference.[72] It is a substantial limitation to the analysis, but it does not reduce its meaningfulness. As discussed in chapter 3, the dominant causal path from personal unemployment to an effect on life-satisfaction has been demonstrated and established through several longitudinal studies. Additionally, the SEM approach allowed for a reduction of endogeneity concerns through the modelling of error terms and the estimation of pathways, thus accounting for selection biases on several variables. While this does not provide a definitive claim about causality, it strengthens the confidence in the estimates not only as robust, but also valid in the direction they were modelled. Many other projects have looked at cross-sectional designs and this project aimed to highlight the importance of complex contextualisation of the life-satisfaction and unemployment relationship. Considering the improvements on endogeneity these results can therefore be used confidently as qualifiers for such studies.

[72] It should be noted that statements such as 'the effect on variable X on variable Y' in this thesis do not imply causality, but are conventional representations of the respective statistical modelling assumptions.

Nevertheless, the limitations of a cross-sectional design persist. The claims made should predominantly be interpreted as comparisons between those employed to those unemployed. They do not provide a detailed account of individuals' development of life-satisfaction in different personal and aggregate contexts. It does not show how the adaptation process relating to becoming unemployed works and how this may be influenced differently by context. It would be highly insightful to investigate this further however. It is plausible that the contextualising effects we can observe here do not only apply to comparisons between individuals, but also to comparisons of a particular individual at different time points. Obviously, the multilevel structure of the model would become more complex with a third level (time) being added. If the country-level perspective would be simplified however it seems reasonable to attempt such modelling. As often, the problem would be data availability, as panel data for a large number of countries with indicators similar to those here would be hard to obtain or collect. But similarly to using the SEM and multilevel regressions in conjunction in this project, longitudinal studies focusing on the individual level could be read in connection to more extensive multilevel approaches. Considering that the main contextualisation mechanism for the relationship at question here appears to be situated at the individual level, focusing on one or two countries with good panel data to conduct such longitudinal analysis could be a very insightful approach.

Levels of Measurement

The multilevel perspective in this study focused on national context factors. However, people live in multiple aggregate contexts. This could have two consequences: First, some of the variables not found to be relevant at the country-level may be influential at smaller levels of aggregation, such as regions or communities. This has been demonstrated for the effect of unemployment rates for example (Pittau et al. 2010). It would be interesting to see whether the effect at a more local level is more robust or whether controls similar to the ones introduced for the national level would render the effect insignificant there as well. Second, there may be variables which do not apply to the national level, but may be of relevance at smaller modes of aggregation. Neighbourhood characteristics for example – part of many surveys – may reflect more about the dynamics of social

capital than the three more general items used in this project can. They may allow for a better differentiation between the manifestation of orientations (such as trust and perceptions of fairness and helpfulness) and partial causes of them (feeling of safety in the area one lives in for example). A three-level multilevel approach could potentially even combine more regional and national context factors.

However, data availability concerns apply here as well. In order to disaggregate within a country, sample sizes need to be substantial. Very few surveys provide for this. Also, there has to be a comparable classification system of sub-state units (the EU NUTS classification being one good example). A three-level approach may therefore – if at all – only be feasible for simpler models, focusing on very particular contextualising factors as smaller case numbers would limit the number of covariates that could be employed. However, the research could be extended by focusing on particular countries which have national surveys with large numbers of participants (such as Understanding Society in the UK), allowing for detailed within-country breakdowns. This may even allow to distinguish between regional and more local levels, while the results could be interpreted consulting the position of the respective country in the cross-country models.

Country-selection biases

The country sample chosen for this sample aimed to provide a substantial number of cases while at the same time ensuring a relative robustness of the life-satisfaction concept employed. This was done by focusing on European and Anglo-Saxon societies when data was available. This of course means that the findings are restricted to this particular cultural area and should not be generalised beyond it without further work that could take into account the differences in meaning of the life-satisfaction concept.

Even within the sample selected there may be certain considerations that warrant attention and potential further investigation. The robustness checks in chapter 3 suggest that the results were not substantially influenced by biases of Eastern European countries in contrast to Western European and Anglo-Saxon ones. However, some significant changes in the size of effects could be observed when controlling for the presence of Eastern European countries. The overall results

appear to be robust, but we might expect that some differences would emerge if we were to conduct investigations separately for different groups of countries. Considering that there is a large group of Eastern European as well as Western European and Anglo-Saxon countries it could be very insightful to undertake some of the analyses again in a comparative framework. Similarly, it may be worth exploring the degree of distinctiveness of Anglo-Saxon countries. It appeared that the role of autonomy may have been altered when those countries were not part of the analysis anymore in chapter 4 – though it would be premature to formulate definitive conclusions about the exact role, as we were looking at results from two different surveys. Considering however that the Anglo-Saxon societies clustered at one end of the scale for the effect of unemployment on life-satisfaction, there may be a systematic influence exerted in analyses where those countries are included because of a substantial difference to the other country groups. A detailed analysis into exploring systematic differences between the country groups could be highly insightful.

Identification of systematic differences between groups of people

As the focus of this project was to explore and understand the contextual factors affecting unemployment and life-satisfaction, survey respondents were treated as a whole apart from applying socio-demographic control variables to reduce spuriousness in the unemployment effect. While this is reasonable as an analytical approach for the question discussed, it is highly plausible that the experience of unemployment is not the same for all groups of people. Most importantly, women may experience unemployment significantly differently to men. It would then also be likely that contextualising factors (in particular those related to gender structures, such as female labour force participation) may play different roles for male and female survey respondents. Splitting the analyses into such subgroups and conducting them separately could help us understand to what extent unemployment as well as the contextual nature thereof may be a gendered experience with regards to the effect on life-satisfaction. With regards to social capital it could be valuable to see whether men and women draw on different resources as moderating factors.

Furthermore, it would be unsurprising to find that such differences between respondents existed for other social groups as well. Splitting the analysis to select only immigrants for example could be of great insight into what role national settings may have that affect the perception of unemployment – potentially in very different ways to the rest of the labour force. Two issues should be considered in such extensions however. First, the selection of particular groups should be grounded in theoretical arguments – otherwise a very data-driven approach could easily emerge. Second, it needs to be assured that sample sizes are large enough to conduct meaningful and comparable analyses. This is not a problem for differentiating between men and women, but may well be for other groups.

The influence of welfare state provisions

One essential variable could not be satisfactorily operationalised for this project: the extent of welfare provisions. A discussion of unemployment effects without taking into account the state benefits provided has limitations. Some of this could be addressed through the robustness checks in chapter 3, where the countries were grouped according to a welfare state typology. It showed rather good robustness of the indicators, but it also showed that there was variance that could be explained by country-level differences which could not be captured in this project. Some other studies could not find a substantial welfare provisions effect (Ouweneel 2002), so the result does not appear implausible. It is important to note that there could be many possible implications following from this. Some may argue that welfare provisions therefore are not effective or even counter-productive. Such conclusions would be highly normative however, as different ascribed goals of welfare state arrangements would result in different ways of evaluating performance. The results indeed cast doubt about whether unemployment has a less pronounced effect on life-satisfaction in countries with more extensive welfare regimes. It does not allow to say though that welfare provisions have no effect on unemployment. Furthermore, effects on objective indicators of well-being are not investigated here. The non-finding regarding a welfare state type effect is insightful – but mainly in that it suggests avenues for further analysis.

However, the essential question is whether this is because there is no definitive effect or whether there are problems with the measurement of provisions.

Comparable indicators from sources like the World Bank do not capture unemployment benefits specifically. There are indicators of general government spending and revenue or summary indicators of general social spending. As commented on, these did not have substantial effects when included in the analyses of this project. However, this may be because of the crudeness of the indicators. An analysis involving just countries for which a comparable measure of unemployment benefit spending was available would provide meaningful answers to this question. It would most likely be a smaller set of countries, but if the analysis is not as exploratory and more focused, requiring the use of fewer covariates, this should not pose a problem in the modelling. Using the 27 European Union countries may be a way of trying to obtain more comparable data in this regard for a multilevel analysis including a good measure of the extent of unemployment benefits.

7.4. Final remarks

This project analysed the effects of unemployment on subjective well-being. It highlighted the issues that several other investigations into subjective well-being face. In particular it highlighted how we may have to understand the contexts these effects operate in have to be understood. An individuals' evaluation of unemployment depends on multiple contexts. Differences between countries matter as well as differences between individuals beyond their mere personal, socio-demographic characteristics. Their integration with others (conceptualised through social capital in this project) substantially affects how they experience unemployment. The results suggest that the contextualising factors at the country-level may interact with the personal processes at this point – prior to the evaluation of unemployment. An individual's personal context may then be the most important prior and intervening variable in individual-level processes. Aggregate factors may then mainly be affecting these individual-level context factors and through them indirectly further personal processes (such as the effect of unemployment on life-satisfaction).

In itself the findings presented here are insightful and warrant further investigation, for example through approaches outlined above. However, there are more general implications that follow from this. Considering the interrelatedness of many of the individual-level factors it would be surprising to find that this shift in the position of the contextualisation would only apply to the unemployment and life-satisfaction relationship. Other multilevel approaches that found systematically varying effects for predictors of subjective well-being depending on particular aggregate predictors may not always detect the actual mechanisms at operation. Such relationships should be critically re-examined considering, which factors representing differences in personal context may affect the respective relationship of interest. If there are more predictors of subjective well-being that lose their cross-country variation once personal contexts and self-selection biases are accounted for, then this would imply that we would have to reconceive our modelling and conceptualisation of the integration of individuals into personal and societal contexts.

While further research is necessary to address this question, one finding has become very clear through this discussion: Conceptual distinctions between the individual and the societal level of analysis are fundamentally necessary for an accurate analysis of social structures and processes. This transcends the notion of investigating subjective well-being. The difference in effects of social capital variables, but also indicators such as income and GDP or age and age-dependency ratios substantiate the claims made earlier that we cannot conceive of societal-level effects as mere aggregations of individual-level effects. Simple micro-economic approaches to understanding human behaviour as reduced to a market interaction are not only flawed because of not taking into account factors that appear to be relevant in accounting for different motivational factors in the decisions people make. They are flawed, because their postulations are inaccurate. Effects found through such analyses do not manage to describe differences between structure and processes and which structures are important in explaining why individuals behave in certain ways.

To use Adam Smith's conceptualisation, they fail to distinguish between functioning societies and societies in which people are well (beyond economic measures) (1790/2009, p. 104). Considering the evidence presented in this project, it appears that such simplistic approaches are not even able to articulate what societies are. Analyses of processes, such as the ones presented here, require a clear distinction between the structures and their effects at different levels. The combination of these structures may allow us to gain an insight into how societies operate. Utility-based, 'objective' micro-economic structures are a relevant element in this, but they appear to be one interlinked with many others.

Appendix: Focus group discussion guide

Note: the points below present a possible outline for the FGs. However, the may be changed in order and certain points may not be brought up explicitly if the point is raised already in context of other questions. The Follow-Up options may be entertained or not depending on the flow of the discussion.

I. INTRODUCTION [5 minutes]

Moderator

Purpose

Recording/ mobiles/ proceedings

Confidentiality

Introductions: Names

II. WHAT IS HAPPINESS? [15 minutes]

Write Down One Sentence and Read Out

→ Encourage discussion about finding commonalities/ themes: Mark themes on board

! Pay attention to comments about difficulties in the task.

III. WHAT MAKES UP HAPPINESS? [15 minutes]

For each theme on the board identify goods/practices/people that can be concretely identified to be constituting this (write down)

IV. WHAT PERSONS MEAN HAPPINESS? [15 minutes]

If not already suggested, introduce a people category: Ideally inter-personal relations should come up as a theme and should not require to be forced; using follow up questions, social capital themes can be explored

Discuss: Which people are most important for your happiness?

Follow Up questions:
- Are those people in your vicinity?
- Are those people helpful to you in practical ways?
- Is there a difference between family and friends?
- Does it matter whether you talk using communication technologies as opposed to face-to-face communication?

V. HOW MUCH HAPPINESS [10 min]

Identify 5 factors from the discussions and have them entered on provided sheets with a 1 .. 10 scale and ask all to rate each item in its important for happiness

→ include something about paid work
→ distinguish several social network characteristics (probably integrate with IV)

→ encourage discussion of polarised factors
→ if mentioned repeatedly, explicate the discussion to take into account questions of balance between two states

! Explore comments on numerical rating.

VI. THE ROLE OF LABOUR [20 min]

Discuss the ratings about paid work

→ if very similar, suggest guiding questions about what role labour can have for personal satisfaction
→ if very different, explore polarisation

→ explore motivations for working/ discouragement to work

→ what obstacles exist to get paid work/ what can be conducive
→ how can negative experiences be mitigated? People/ community/ state/ attitudes

VII. INDIVIDUAL AND SOCIETY [15 min]

So far we discussed personal gains/problems around paid work and life-satisfaction as well as how social connections may be helpful in getting employment/ supporting one in employment/ helping in difficult situations ... etc.

Re-focus discussion on the role of paid labour and social networks for a society

What values is there for communities/ the society at large

→ challenge limiting conceptions (localised orientations? Material orientations? Etc.)
→ Why are certain orientations better for communities?

VIII. DOING THE RIGHT THING? [15 min]

Reconsider and write down 5 most important things for life-satisfaction (framing around labour market and social network orientations should be apparent; aim to include one material factor through previous discussions)

When finished: rank these 5 things in importance (prepared paper)

Read out and discuss: Do you pay attention to them in this order in your life? If not, why not?

! Pay attention to comments about ranking difficulties.

IX. DE-BRIEFING

References

Ahn, T. & Ostrom, E. 2008. Social Capital and Collective Action. In: Castiglione, D., van Deth, J. & Wolleb, G. (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press.

Alexandrova, A. 2005. Subjective Well-Being and Kahneman's 'Objective Happiness'. *Journal of Happiness Studies* 6(3): 301-324.

Baron, S., Field, J. & Schuller, T. (Eds). 2000. *Social Capital. Critical Perspectives.* New York: Oxford University Press.

Bauer, J., McAdams, D. & Pals, J. 2008. Narrative identity and eudaimonic well-being. *Journal of Happiness Studies* 9(1): 81-104.

Bentham, J. 1789/1996. *An Introduction to the Principles of Morals and Legislation*. Oxford: Calrendon Press.

Bentler, P. 1992. On the fit of models to covariance and methodology to the Bulletin. Psychological Bulletin 112(3): 400-404.

Bentolina, S., Michelacci, C. & Suarez, J. 2003. Social Networks and Occupational Choice. *CEPR* Discussion Paper No. 4308.

Bjørnskov, C. 2003. The Happy Few: Cross-Country Evidence on Social Capital and Life Satisfaction. *Kyklos* 56: 3-16.

Boggs, C. 2001. Social Capital and Political Fantasy: Robert Putnam's 'Bowling Alone'. *Theory and Society* 30(2): 281-297.

Bouazzaoui, B. & Mullet, E.. 2002. Employment and Family as Determinants of Anticipated Life Satisfaction: Contrasting Young Adults' and Elderly People's Viewpoints. *Journal of Happiness Studies* 3(2): 129-152.

Bourdieu, P. 1973. Cultural reproduction and social reproduction. In: Brown, R. (Ed). 1973. *Knowledge, Education and Cultural Change*. London: Tavistock.

Bourdieu, P.1986. The Forms of Capital. In: Richardson, J. (Ed). 1986. *Handbook of Theory and Research for the Sociology of Education*. Westport: Greenwood Press.

Bosco, L. 2005. Happiness, Social Preferences and Economic Policy. *Università degli Studi di Siena. Dipartimento di Economia Politica* Working Paper No. 459

Bouazzaoui, B. & Mullet, E. 2005. Employment and Family as Determinants of Anticipated Life Satisfaction: Contrasting European and Maghrebi People's Viewpoints. *Journal of Happiness Studies* 6(2): 129-152.

Brockmann, H. (2010). Why are middle-aged people so depressed? Evidence from West-Germany. *Social Indicator Research,* 97(1), 23-42.

Brockmann, H., Delhey, J., Welzel, C. & Yuan, H. 2009. The China Puzzle: Falling Happiness in a Rising Economy. *Journal of Happiness Studies* 10 (4): 387-405.

Browne, M & Cudeck, R. 1993. Alternative ways of assessing model fit. In: Bollen, K. & Long, J. (Eds). 1993. *Testing structural equation models*. Newbury Park: Sage.

Brülde, B. 2007. Happiness Theories of the Good Life. *Journal of Happiness Studies* 8: 15-49.

Bruni, L. & Porta, Pier L. 2005. Introduction. In: Bruni, L. & Porta, Pier L. (Eds). 2005. *Economics and Happiness. Framing the Analysis.* Oxford: Oxford University Press.

Bruni, L. 2006. *Civil Happiness. Economics and human flourishing in historical perspective.* London and New York: Routledge.

Bruni, L., Comim, F. & Pugno, M. 2008. Introduction. In: Bruni, L., Comim, F. & Pugno, M. (Eds). 2008. *Capabilities and Happiness.* Oxford: Oxford University Press.

Byrne, B. 2012. *Structural Equation Modeling With Mplus. Basic Concepts, Applications, and Programming*. New York: Routledge.

Cahuc, P. & Fontaine, F. 2002. On the Efficiency of Job Search with Social Networks. *Institute for the Study of Labor* Discussion Paper No. 583.

Calvó-Armengol, A. & Ioannides, Y. 2005. Social Networks in Labor Markets. *Department of Economics Tufts University* Working Paper 2005-17.

Castiglione, D., van Deth, J. & Wolleb, G. (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press.

Castiglione, D. 2008. Introduction: Conceptual Issues in Social Capital Theory. In: Castiglione, D., van Deth, J. & Wolleb, G. (Ed.). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press. 13-21.

CBS. 2011. The Centre for Bhutan Studies. Retrieved from http://www.grossnationalhappiness.com/ (19 December 2011).

Chekola, M. 2007. Happiness, Rationality, Autonomy and the Good Life. *Journal of Happiness Studies* 8: 51-78.

Clark, A. 2003. Unemployment as a Social Norm: Psychological Evidence from Panel Data. *Journal of Labor Economics* 21(2): 323-351.

Clark, A., Georgellis, Y. & Sanfey, P. 2001. The Psychological Impact of Past Unemployment. *Economica* 68: 221-241.

Clark, A., Knabe, A. & Rätzel, S. 2010. Boon or Bane? Others' Unemployment, Well-being and Job Insecurity. *Labour Economics* 17(1): 52-61.

Clark, A. & Oswald, A. 1994. Unhappiness and Unemployment. *The Economic Journal* 104: 648-659.

Coleman, J. 1988. Social Capital in the Creation of Human Capital. *American Journal of Sociology* 94(1): 95-120.

Coleman, J. 1994a. Social capital, human capital, and investment in youth. In: Petersen, A. & Mortimer, J. (Eds). *Youth unemployment and society.* 1994. Cambridge: Cambridge University Press.

Coleman, J. 1994b. *Foundations of Social Theory.* Harvard University Press.

Cook, K., Hardin, R. & Levi, M. 2005. *Cooperation without Trust?* New York: Sage.

Côté, S. & Moskowitz, D. 1998. On the dynamic covariation between interpersonal behaviour and affect: prediction from neuroticism, extraversion, and agreeableness. *Journal of Personality and Social Psychology* 75(4): 1032-1046.

Deci, E. & Ryan, R. 2008. Hedonia, Eudaimonia, and Well-Being: An Introduction. *Journal of Happiness Studies* 9(1): 1-11.

Delattre, E. & Sabatier, M. 2004. Social capital and wages: an econometric evaluation of social networking's effects. *XVIII AIEL Conference on Labour Economics* Conference Paper

Delhey, J. 2010. From Materialist to Post-Materialist Happiness? National Affluence and Determinants of Life Satisfaction in Cross-National Perspective. *Social Indicators Research* 97(1): 65-84.

Diener, E. & Lucas, R. 1999. Personality and Subjective Well-Being. In: Kahnemann, D., Diener, E. & Schwarz, N. (Eds). 1999. *Well-Being: The Foundations of Hedonic Psychology.* New York: Russell Sage Foundation.

Diener, E. & Biswas-Diener, R. Happiness. 2008. *Unlocking the Mysteries of Psychological Wealth*. Malden, Oxford and Victoria: Blackwell.

Di Tella, R. & MacCulloch, R. 2006. Some Uses of Happiness Data in Economics. *The Journal of Economic Perspectives* 20(1): 25-46.

Di Tella, R., MacCulloch, R. & Oswald, A. 2001. Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness. *American Economic Review* 91(1): 335-341.

Di Tella, R., MacCulloch, R. & Oswald, A. 2003. The Macroeconomics of Happiness. *Review of Economics and Statistics* 85(4): 809-827.

Durlauf, S.1999. The Case "Against" Social Capital. *Fokus* 20 (3): 1-5.

Durlauf, S. 2002. On the Empirics of Social Capital. *The Economic Journal* 112: 459-479.

Easterlin, R. 1995. Will raising the incomes of all increase the happiness of all? *Journal of Economic Behavior and Organization* 27: 35-47.

Easterlin, R. 2001. Income and Happiness: Towards a Unified Theory. *The Economic Journal* 111: 465-484.

Easterlin, R. 2002. Is Reported Happiness Five Years Ago Comparable to Present Happiness? A Cautionary Note. *Journal of Happiness Studies* 3(2): 193-198.

Eichhorn, J. 2011. Happiness for Believers? Contextualizing the Effects of Religiosity on Life-Satisfaction. *European Sociological Review*. Advance Access. doi: 10.1093/esr/jcr027.

Esser, H. 2008. The Two Meanings of Social Capital. In: Castiglione, D., van Deth, J. & Wolleb, G. (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press.

Evans, J. 2011. Findings from the National Well-being Debate. Office of National Statistics working paper.

EVS. 2011. European Values Study. Retrieved from www.europeanvaluesstudy.eu (12 September 2011).

Farr, J. 2004. Social Capital: A Conceptual History. *Political Theory* 32(1): 6-33.

Fenger, H. 2007. Welfare Regimes in Central and Eastern Europe: Incorporating Post-Communist Countries in a Welfare Regime Typology. *Comtemporary Issues and Ideas in Social Science* 3(2): 1-30.

Ferrer-i-Carbonell, A. & Gërxhani, K. 2004. How important is methodology for the estimates of the determinants of happiness? *The Economic Journal,* 114, 641-659.

Field, J. 2003. *Social Capital.* London and New York: Routledge.

Fine, B. 2001. *Social Capital versus Social Theory. Political economy and social science at the turn of the millennium.* London and New York: Routledge.

Fischer, C. 2001. Bowling Alone: What's the Score? Paper presented *to Author Meets Critic: Putnam, Bowling Alone session of the meetings of the American Sociological Association*, August 2001.

Flap, H. & Völker, B. 2001. Goal specific social capital and job satisfaction. Effects of different types of networks on instrumental and social aspects of work. *Social Networks* 23(4): 297-320.

Flap, H. & Völker, B. 2004. *Creation and Return of Social Capital. A new research program.* New York: Routledge.

Fontaine, F. 2004. Do workers really benefit from their social networks? *IZA DP 1282* working paper.

Frey, B. & Stutzer, A. 2002. *Happiness and Economics. How the Economy and Institutions Affect Well-Being.* Princeton and Oxford: Princeton University Press.

Frey, B. 2008. *Happiness. A Revolution in Economics*. Cambridge and London: The MIT Press.

Fukuyama, F. 1995. Social Capital and the Global Economy: A Redrawn Map of the World. *Foreign Affairs* 74 (5): 89-103.

Fukuyama, F. 2001. Social Capital, Civil Society and Development. *Third World Quarterly* 22(1): 7-20.

Gittell, R & Vidal, A. 1998. *Community Organization: Building Social Capital as a Development Strategy*. Thousand Oaks: Sage.

González, M., Coenders, G., Saez, M. & Casas, F. 2009. Non-lineraity, Complexity, and Limited Measurement in the Relationship Between Satisfaction with Specific Life Domains and Satisfaction with Life as a Whole. *Journal of Happiness Studies* Online First. doi: 10.1007/s10902-009-9143-8.

Graham, C. (2009). *Happiness Around the World: The Paradox of Happy Peaseants and Miserable Millionaires.* New York: Oxford University Press.

Graham, C. & Pettinato, S. 2000. Happiness, Markets, and Democracy: Latin America in Comparative Perspective. *Journal of Happiness Studies* 2(2): 237-268.

Granovetter, M. 1973. The Strength of Weak Ties. *American Journal of Sociology* 78(6): 1360-80.

Granovetter, M. 1985. Economic action and social structure: the problem of embeddedness. *American Journal of Sociology* 91(3): 481-510.

Green, F. 2011. Unpacking the misery multiplier: How employability modifies the impacts of unemployment and job insecurity on life satisfaction and mental health. *Journal of Health Economics* 30(2): 265-276.

Green, J. & Hart, L. 1999. The impact of context on data. In: Barbour, R. & Kitzinger, J. (Eds). 1999. *Developing Focus Group Research. Politics, Theory and Practice.* London: SAGE Publications.

Greenbaum, T. 2000. *Moderating Focus Groups*. *A Practical Guide for Group Facilitation.* Thousand Oaks: SAGE Publications.

Griffin, J. 2007. What do Happiness Studies Study? *Journal of Happiness Studies* 8(1): 139-148.

Grün, C., Hauser, W. & Rhein, T. 2010. Is Any Job Better than No Job? Life Satisfaction and Re-employment. *Journal of Labor Research* 30(3): 285-306.

Hadler, M. 2005. Why Do People Accept Different Income Ratios? *Acta Sociologica* 48(2): 131-154.

Halpern, D. 2005. *Social Capital*. Cambridge: Polity Press.

Hart aber Fair. 2009. TV Show released 26 August 2009. ARD Germany.

Helliwell, J. 2001. Social Capital, the Economy and Well-Being. In: Banting, K., Sharpe, A. & St-Hilaire, F. (Eds). 2001. *The Review of Economic Performance and Social Progress. The Longest Decade: Canada in the 1990s*. McGill-Queen's University Press.

Helliweel, J. & Putnam, R. 2004. The social context of well-being. *Philosophical Transactions of the Royal Society B: Biological Sciences* 359: 1435-1446.

Howell, R., Chenot, D., Hill, G. and Howell, C. 2009. Momentary Happiness: The Role of Psychological Need Satisfaction. *Journal of Happiness Studies* Online First. doi: 10.1007/s10902-009-9166-1.

Hox, J. 2010. *Multilevel Analysis. Techniques and Applications.* New York: Routledge.

Hox, J., Maas, C., Brinkhuis, M. 2010. The effect of estimation method and sample size in multilevel structural equation modelling. *Statistica Neerlandica* 64(2): 157-170.

Hu, L. & Bentler, P. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structur*al *Equation Modeling* 6(1): 1-55.

IMF. 2011. International Monetary Fund. Retrieved from http://www.imf.org/external/data.htm (26 February 2011).

Inglehart, R. & Welzel, C. 2005. Modernization, Cultural Change and Democracy. New York: Cambridge University Press.

Inglehart, R., Foa, R. & Welzel, C. 2008. Development, Freedom and Rising Happiness: A Global Perspective 1981-2006. *Perspectives on Psychological Science* 3(4): 264-285.

Kahneman, D. 1999. Objective Happiness. In: Kahnemann, D., Diener, E. & Schwarz, N. (Eds). 1999. *Well-Being: The Foundations of Hedonic Psychology.* New York: Russell Sage Foundation.

Kahnemann, D., Krueger, A., Schkade, D., Schwarz, N. & Stone, A. 2006. Would You Be Happier If You Were Richer? A Focusing Illusion. *Science* 312: 1908-1910.

Kassenböhmer, S. & Haisken-DeNew, J. 2009. You're fired! The Causal Negative Effect of Entry Unemployment on Life Satisfaction. *Economic Journal* 119: 448-462.

Kawachi, I., Kennedy, B. & Lochner, K. 1997. Social Capital, Income Inequality, and Mortality. *American Journal of Public Health* 87(9): 1491-1499.

Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C. & Diener, M. 2005. Integrating the Diverse Definitions of Happiness: A Time-Sequential Framework of Subjective Well-Being. *Journal of Happiness Studies* 6(3): 261-300.

Knack, S. & Keefer, P. 1997. Does Social Capital have an Economic Payoff? *Quarterly Journal of Economics* 112(4): 1251-1288.

Knodel, J. 1993. The Design and Analysis of Focus Group Studies: A Practical Approach. In: Morgan, D. (Ed). 1993. *Successful focus Groups: Advancing the State of the Art.* Newbury Park: SAGE Publications.

Krueger, R. 1988. *Focus groups: A Practical Guide for Applied Research.* Newbury Park: SAGE Publications.

Kumlin, S. & Rothstein, B. 2005. Making and Breaking Social Capital: The Impact of Welfare-State Institutions. *Comparative Political Studies* 38(4): 339-365.

Layard, R. 2005. *Happiness. Lessons from a New Science.* London: Penguin Books.

Li, L. & Bond, M. 2010. Does Individual Secularism Promote Life Satisfaction? The Moderating Role of Societal Development. *World Values Research* 3(3): 14-28.

Lin, N. 2001. *Social Capital. A Theory of Social Structure and Action.* Cambridge: Cambridge University Press.

Lin, N. 2008. A Network Theory of Social Capital. In: Castiglione, Dario, van Deth, Jan & Wolleb, Guglielmo (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press. 50-69.

Lu, L. & Gilmour, R. 2004. Culture and Conceptions of Happiness: Individual Oriented and Social Oriented SWB. *Journal of Happiness Studies* 5(3): 269-291.

Lucas, R. 2007. Adaptation and the Set-Point Model of Subjective Well-Being. Does Happiness Change After Major Life Events? *Current Directions in Psychological Science* 16(2): 75-79.

Lucas, R., Clark, A., Georgellis, Y. & Diener, E. 2004. Unemployment Alters the Set Point for Life Satisfaction. *Psychological Science* 15(1): 8-13.

MacInnes, J. 2004. The sociology of identity: social science or social comment? *The British Journal of Sociology* 55(4): 531-543.

Marar, Z. 2003. *The Happiness Paradox*. London: Reaction Books.

Martin, M. 2008. Paradoxes of Happiness. *Journal of Happiness Studies* 9(2): 171-184.

Martin, P. 2005. *Making Happy People. The Nature of Happiness and its Origins in Childhood.* London and New York: Fourth Estate.

Morgan, D. 1997. *Focus Groups as Qualitative Research.* 2nd ed. Newbury Park: SAGE Publications.

Morgan, J. & Farsides, T. 2009a. Measuring Meaning in Life. *Journal of Happiness Studies* 10(2): 197-214.

Morgan, J. & Farsides, T. 2009b. Psychometric Evaluation of the Meaningful Life Measure. *Journal of Happiness Studies* 10(3): 351-366.

Muthén, L. & Muthén, B. (2010). *Mplus User's Guide. Sixth Edition*. Los Angeles: Muthén & Muthén.

Newton, K. 2001. Trust, Social Capital, Civil Society, and Democracy. *International Political Science Review* 22(2): 201-214.

Nowlis, D & Cohen, A. 1968. Mood-reports and the college natural setting: a day in the lives of three roommates under academic pressure. *Psychological Reports* 23(2): 551-566.

Okulicz-Kozaryn, A. 2010. Europeans Work to Live and Americans Live to Work (Who is Happy to Work More: Americans or Europeans?). *Journal of Happiness Studies* Online First: DOI 10.1007/s10902-010-9188-8.

Ouweneel, P. 2002. Social Security and Well-Being of the Unemployed in 42 Nations. *Journal of Happiness Studies* 3(2): 167-192.

Parducci, A. 1995. *Happiness, Pleasure and Judgement. The Contextual Theory and Its Applications.* Mahwah: Lawrence Erlbaum Associates.

Paxton, P. 1999. Is Social Capital Declining in the United States? A Multiple Indicator Assessment. *American Journal of Sociology* 105(1): 88-127.

Paxton, P. 2007. Association Memberships and Generalized Trust: A Multilevel Model across 31 Countries. *Social Forces* 86 (1): 47-76.

Pittau, M., Zelli, R. & Gelman, A. 2010. Economic Disparities and Life Satisfaction in European Regions. *Social Indicator Research* 96(2): 339-361.

Policy Research Initiative (PRI). 2005a. Social Capital as a Public Policy Tool. Report by *Pricy Council of the Government of Canada*.

Policy Research Initiative (PRI). 2005b. Measurement of Social Capital. Report by *Pricy Council of the Government of Canada*.

Portes, A. 1998. Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology* 24: 1-24.

Portes, A. 2000. The Two Meanings of Social Capital. *Sociological Forum* 15(1): 1-12.

Portes, A. & Landolt, P. 2000. Social Capital: Promise and Pitfalls of its Role in Development. *Journal of Latin American Studies* 32(2): 529-547.

Putnam, R. 1993. *Making Democracy Work.* Princeton: Princeton University Press.

Putnam, R. 1995. Bowling Alone: America's Declining Social Capital. *Journal of Democracy* 6(1): 65-78.

Putnam, R. 2001. *Bowling Alone. The Collapse and Revival of American Community.* New York: Touchstone.

Putnam, R. (Ed.). 2002. *Democracy in Flux. The Evolution of Social Capital in Contemporary Society.* New York: Oxford University Press.

Ram, R. 2010. Social Capital and Happiness: Additional Cross-Country Evidence. *Journal of Happiness Studies* 11(4): 409-418.

Rasmussen, D. 2006. Does 'Bettering Our Condition' Really Make Us Better Off?: Adam Smith's Thought. *American Political Science Review* 100(3): 309-318.

Roche, M. 2004. Social Policy and Social Capital: A Clear Case of Putting Merit before Method? *Social Policy and Society* 3 (2): 97-111.

Rojas, M. 2006. Life Satisfaction and Satisfaction in Domains of Life: Is it a Simple Relationship? *Journal of Happiness Studies* 7: 467-497.

Ryan, R., Huta, V. & Deci, E. 2008. Living Well: A Self-Determination Theory Perspective on Eudaimonia. *Journal of Happiness Studies* 9(1): 139-170.

Ryff, C. & Keyes, C. 1995. The Structure of Psychological Well-Being Revisited. *Journal of Personality and Social Psychology* 69(4): 719-727.

Sabatini, F. 2006. The Empirics of Social Capital and Economic Development: A Critical Perspective. *FEEM Working Paper* 15.06.

Salanova, M., Bakker, A. & Llorens, S. 2006. Flow at Work: Evidence for an Upward Spiral of Personal and Organizational Resources. *Journal of Happiness Studies* 7(1):1-22.

Scheepers, P., Grotenhuis, M. & Gelissen, J. 2002. Welfare States And Dimensions Of Social Capital: Cross-national Comparisons Of Social Contracts in European Countries. *European Societies* 4(2): 185-207.

Schulenburg, S. & Melton, A. 2010. A Confirmatory Factor-Analytic Evaluation of the Purpose in Life Test: Preliminary Psychometric Support for a Replicable Two-Factor Model. *Journal of Happiness Studies* 11(1): 95-111.

Schwarz, N. & Strack, F. 1999. Reports of Subjective Well-Being: Judgemental Processes and Their Methodological Implications. In: Kahnemann, D., Diener, E. & Schwarz, N. (Eds). 1999. *Well-Being: The Foundations of Hedonic Psychology.* New York: Russell Sage Foundation.

Scollon, C., Kim-Prieto, C. & Diener, E. 2003. Experience Sampling: Promises and Pitfalls, Strengths and Weaknesses. *Journal of Happiness Studies* 4(1): 5-34.

Sen, A. 2008. The Economics of Happiness and Capability. In: Bruni, L., Comim, F. & Pugno, M. (Eds). 2008. *Capabilities and Happiness.* Oxford: Oxford University Press.

Siisiäinen, M. 2000. Two Concepts of Social Capital: Bordieu vs. Putnam. Paper presented at *ISTR Fourth International Conference* July 5-8 2000.

Şimşek, Ö. 2009. Happiness Revisited: Ontological Well-Being as a Theory-Based Construct of Subjective Well-Being. *Journal of Happiness Studies* 10(5): 505-522.

Smith, A. 1776/1999. *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: Penguin Books.

Smith, A. 1790/2009. *The Theory of Moral Sentiments*. London: Penguin Books.

Smith, V. 1998. The Two Faces of Adam Smith. *Southern Economic Journal* 65(1): 1-19.

Stewart, D. & Shamdasani, P. 1990. *Focus Groups: Theory and Practice*. Newbury Park: SAGE Publications.

Stiglitz, J., Sen, A. & Fitoussi, J. 2009. Report by the Commission on the Measrument of Economic Performance and Social Progress. Commission on the Measurement of Economic Performance and Social Progress. Retrieved from www.stiglitz-sen-fitoussi.fr (19 December 2011).

Stone, W. 2001. Measuring Social Capital. Towards a theoretically informed measurement framework for researching social capital in family and community life. *Australian Institute for Family Studies* Research Paper No. 24.

Torras, M. 2008. The Subjectivity Inherent in Objective Measures of Well-Being. *Journal of Happiness Studies* 9: 475-487.

Tribe, K. 1999. Adam Smith: Critical Theorist? *Journal of Economic Literature* 37(2): 609-632.

Uchida, Y., Norasakkunkit, V. & Kitayama, S. 2004. Cultural Constructions of Happiness: Theory and Empirical Evidence. *Journal of Happiness Studies* 5(3): 223-239.

Van der Gaag, M. & Snijders, T. 2004. Proposals for the measurement of individual social capital. In: Flap, H. & Völker, B. 2004. *Creation and Return of Social Capital. A new research program.* New York: Routledge.

van Deth, J. 2003. Measuring Social Capital: Orthodoxies and Continuing Controversies. *International Journal of Research Methodology* 6: 79-92.

Van Deth, J. 2008. Measuring social capital. In In: Castiglione, D., van Deth, J. & Wolleb, G. (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press.

Varelius, J. 2003. Objective Explanations of Individual Well-Being. *Journal of Happiness Studies* 5(1): 73-91.

Veenhoven, R. 1984. *Conditions of Happiness.* Dordrecht: Reidel.

Veenhoven, R. 1991. Is happiness relative? *Social Indicators Research* 24(1): 1-34.

Veenhoven, R. 1999. The Four Qualities of Life. Ordering Concepts and Measures of the Good Life. *Journal of Happiness Studies* 1(1): 1-39.

Waldron, S. 2010. Measuring Subjective Well-being in the UK. Office of National Statistics working paper.

Warren, M. 2008. The nature and logic of bad social capital. In: Castiglione, D., van Deth, J. & Wolleb, G. (Eds.). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press.

Waterman, A. 1993. Two conceptions of happiness: Contrasts of personal expressiveness (Eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology* 64(4): 678-691.

Wellman, B. 1979. The Community Question. *American Journal of Sociology* 84(5): 1201-1231.

White, N. 2006. *a brief history of happiness.* Malden, Oxford and Victoria: Blackwell.

Wilkinson, R. & Pickett, K. 2009. *The Spirit Level: Why More Equal Societies Almost Always Do Better*. London: Allen Lane.

Winkelmann, R. 2009. Unemployment, Social Capital, and Subjective Well-Being. *Journal of Happiness Studies* 10(4): 421-430.

Winter, I. 2000. Major Themes and Debates in the Social Capital Literature: The Australian Connection. In: Winter, Ian (Ed). 2000. *Social Capital and Public Policy in Australia*. Melbourne: Australian Institute of Family Studies.

Woolcock, M. & Narayan, D. 2000. Social Capital: Implications for Development Theory, Research, and Policy. *The World Bank Research Observer* 15(2): 225-249.

Woolcock, M. 2001. The Place of Social Capital in Understanding Social and Economic Outcomes. *Canadian Journal of Policy Research* 2(1): 65-88.

Woolcock, M. & Radin, E. 2008. A relational approach to the theory and practices of economic development. In: Castiglione, Dario, van Deth, Jan & Wolleb, Guglielmo (Eds). 2008. *The Handbook of Social Capital.* Oxford: Oxford University Press. 411-437.

Worldbank. 2011. Data and Research. Retrieved from http://econ.worldbank.org (26 February 2011).

WVS. 2010. World Values Survey. Retrieved from www.worldvaluessurvey.org (20 March 2010).

I, Jan Eichhorn, hereby declare that

a) The thesis has been composed by myself,
b) That the work is my own,
c) That the work has not been submitted for any other degree or professional qualification.