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Cultural Determinants of Subjective Well-Being: Epidemiological Evidence from the European Social Survey

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Abstract

Applying the epidemiological approach, this thesis studies the relation between national culture and subjective well-being using respondents from the European Social Survey and the culture dimensions developed by Geert Hofstede. Examining second-generation immigrants, originating from 99 countries all across the globe, the effect of culture was isolated from contemporaneous effects of the institutional and economic environment of the destination-country. Overall, the most important finding of this thesis is that cultural preferences and beliefs are likely to exercise influence over individual happiness outcomes, even outside of the environment in which these cultural values originate. However, the exact relation between the cultural dimensions and SWB outcomes turned out to be hard to uncover.

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1. Introduction

Since the end of the 20th century, subjective well-being (SWB) – which according to Diener (1984; 2000) refers to the way in which people evaluate their life – faces increasing importance by people all over the world. Moreover, “happiness¹ as a measure of well-being is gradually becoming more accepted by economists and policy makers” (Easterlin, 2013, p. 1). However, countries differ significantly in the extent in which their citizens are satisfied with their lives.

The past decades, many studies tended to explain the differences in peoples reported SWB, but despite the extensive literature that has been written on this topic, it is still hard to compare SWB between different nations. Some scholars might argue that a country's geographical location mostly determines SWB, since societies depend on the availability of welfare improving circumstances to economically thrive. Others might stress that rulers of some countries just do not know how to increase the SWB of their people and therefore follow erroneous strategies and policies. Besides, richer countries seem to be significantly happier than poor countries, although the idea that happiness increases in line with a country's economic development has been widely rejected (Easterlin, 1973; 1995; 2001; Inglehart, Foa, Peterson, & Welzel, 2008; van Hoorn & Sent, 2016). As Easterlin (1973) – and many scholars after him (e.g. Easterlin (1995), Blanchflower and Oswald (2004), Stutzer (2004) and Di Tella and MacCulloch (2006)) – found, levels of SWB seem to be stable over time². A pattern that was observed in a large number of countries such as the United States, Germany, France, Japan and the United Kingdom (Di Tella & MacCulloch, 2006).

An explanation for these differences might be that “people react differently to the same circumstances, and they evaluate conditions based on their unique expectations, values and previous experiences” (Diener E. , Suh, Lucas, & Smith, 1999, p. 277). This makes it impossible to explain SWB by social-economic indicators solely. Since personal expectations are (partly) shaped by culture, culture could be a crucial (missing) determinant of cross-cultural differences in SWB. As Steel and Ones (2002) found, aggregated personality characteristics – which could stem from culture – explain differences in SWB. In addition, Taras, Kirman and Steel (2010) also found in their study that culture could often be a meaningful explanatory factor. This might partly be the case, since culture influences people's preferences and therefore the choices they make (Van Hoorn, 2014; Fernández, 2008). In addition, Frey and Stutzer (2000) argue that it is important to consider cultural and institutional conditions in addition to economic and demographic parameters in explaining people's happiness.

Next to personal expectations and social norms, culture could directly affect the economic behaviour of people. For instance, the propensity to innovate or to save differs significantly across

¹ Although some scholars show a clear distinction between concepts such as happiness, life satisfaction and SWB, some economists often used this terms interchangeably. The main focus in this thesis will be on the concept of SWB, but when referred to happiness in this thesis, the author from the applied source idem utilized this term.

² This is also the case for the average SWB of the countries used in the sample in this thesis (see Figure 1 in Appendix 1).

nations and also other economic decisions such as spending on education, the number of children people get, or the willingness to contribute to public goods are partly dependent on cultural values (Gorodnichenko & Roland, 2016). As Uchida et al. (2004) puts it: “any adequate understanding of seemingly universal factors can never be complete without taking into account culture-dependent ways in which such factors are realized and allowed to shape happiness and well-being” (p. 235).

1.1 The difficulties of cross-cultural comparisons of SWB

In the social sciences, there is no unambiguous, widely accepted definition of culture (Beugelsdijk & Maseland, 2011). Herskovitz (1948), for example, broadly defined culture as the man-made part of the environment, while others defined the concept more narrowly; e.g. Schweder and LeVine (1984) described culture as “a shared meaning system” (p. 110)³. In his influential book on cross-cultural differences, Hofstede (1980) defined culture as “the collective programming of the mind which distinguishes the members of one human group from another” (p. 25). This definition will be followed in this thesis, because Hofstede’s cultural values proxy for culture in the analysis.

Since economists found out that cultural differences are an important dimension of economic decision-making, cultural explanations of economic behaviour received increased attention in economics, especially in development economics and growth theory (Chuah, Hoffmann, Jones, & Williams, 2009). However, the way in which culture affects SWB is far from clear. There are many reasons why SWB is hard to compare across different cultures. For instance, the importance of material income differs between cultures (Beugelsdijk & Maseland, 2011) and the conception of happiness also varies (Uchida, Norasakkunkit, & Kitayama, 2004). There are, for example, major differences in the conception of happiness between American and Chinese students, as a study by the social psychologists Lu and Gilmour (2004) shows. Although both Americans and Chinese consider happiness as a very positive and desirable mental state, Americans seem to be “more uplifting, elated, exciting, and show more emphasis on enjoying life in the physical sense and present time” than Chinese people do (Lu & Gilmour, 2004, p. 270). The latter are more inclined to emphasize the “spiritual cultivation and psychological transcendence” (Lu & Gilmour, 2004, p. 270). According to Uchida et al. (2004) and Sun and Oishi (2004), personal achievement is an essential way to achieve happiness for North Americans, while people from East Asia find happiness via supportive social relationships. Furthermore, as Suh et al. (1998) found in a study about the relative importance of emotions versus normative beliefs for life satisfaction judgements, the determinants of SWB may differ across cultures. In comparison to collectivist countries, emotions play a more important role in predicting SWB in individualistic countries (e.g. the United States, Australia and the United Kingdom). In collectivist cultures (e.g. Indonesia, China and Venezuela), emotions and normative beliefs are equally important predictors of life satisfaction.

Another possible cause for the difficulty in comparing SWB between different cultures might

³ Mentioning these two examples was inspired by the paper by Javidan et al. (2006).

be that the word 'happiness' cannot be compared easily across the world. This is the case since the translation of the word in other languages often does not mean the exact same thing (Wierzbicka, 2004). For instance, the French and Russian equivalents for happiness – *bonheur* and *scastie* – have a much stronger meaning and are used less often (Wierzbicka, 2004). Therefore, the French, Russians and many other cultures are less inclined to report 'very happy' in self-reports, while Americans are inclined to express themselves in a very positive way and therefore often report high values of happiness in self-reports (Wierzbicka, 2004). According to Frey (2018), for French people (and to some extent for Germans and Italians) it is even perceived as weird to call oneself happy.

Furthermore, the lack of a research method that enabled the researcher to distinguish cultural effects from the effects of the institutional and economic environment in which the decision making took place, made research on the relation between culture and economics difficult (Fernández, 2011). To overcome this complication, Fernández further developed and formalized an empirical method to enable the separation of the effect of culture (Luttmer & Singhal, 2008). This method – called the epidemiological approach (Fernández, 2008; Fernández, 2011) – will be applied in this thesis and will be further explained in the data and method section.

1.2 Purpose of the thesis

In this thesis, the focus will be on the role of cultural dimensions on cross-national differences in SWB. As Fernández concludes from her study on the influence of social preferences and beliefs on economic variables: "culture and the economic and institutional environment interact and influence one another" (Fernández, 2011, p. 506). Research on this interaction would be an important addition to the economic literature, because there is scarce quantitative evince that shows the importance of culture in economic outcomes (Fernández & Fogli, 2005; Fernández, 2011). Especially the relationship between culture and SWB has been overlooked in current literature in economics. Therefore, this thesis examines the following research question: *How does culture affect subjective well-being?* In general, this thesis will contribute to existing literature by providing a more extensive insight in the determinants and cross-cultural differences of SWB. Furthermore, combining insights from several disciplines – economics, psychology and sociology – may be a useful addition to economic literature as well; psychologists have been using surveys of reported well-being for a long time and sociologist have been studying cultural differences for decades; economists just recently entered this research area (Graham, 2008). The attempted insights from this thesis might benefit policy-makers in developing and implementing more effective and public welfare-enhancing policies. Since culture is expected to influence SWB, researchers and policy-makers should be concerned with the potential effects of culture on SWB.

Although a similar study was conducted by Arrindel et al. (1997), this study will still contribute to the contemporary academic literature. To begin with, the study by Arrindel et al. (1997) was published over 24 years ago and was based on studies up to 1995. Therefore, this thesis could provide insights from

more recent studies on cultural values and SWB. Besides, Arrindel et al. (1997) based their data on happiness- and life-satisfaction surveys compiled among students in the early 1980s by (Michalos, 1991) and (Veenhoven, Ehrhardt, Ho, & de Vries, 1993), while this study was based on a more recent and larger dataset by the European Social Survey (2020) on residents all across Europe. In this thesis, the cultural dimensions as developed by Hofstede⁴ (1980; 1988; 2001) and the Global Leadership and Organizational Behavior Effectiveness, abbreviated to GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004), will proxy for national culture. While most prior studies on Hofstede's cultural dimension did not include Long-term Orientation, this fifth cultural dimension is also included in the research. Finally, where Arrindel et al. (1997) used a standard multiple regression analysis, this thesis also use the epidemiological approach to better filter out the effect of culture on SWB by studying the behaviour of second-generation immigrants.

1.3 Structure of the thesis

The structure of this thesis is as follows. After the introduction, the second chapter provides a theoretical and historical background on the subject by providing a literature review on the rise and relevance of 'happiness economics' and a brief overview on already studied determinants of SWB. Based on the literature review, the hypotheses have been developed in chapter three. Here the expected relations between the cultural dimensions and the dependent variable, SWB, are theorized. Chapter 4 explains the research methodology and is used to describe the datasets more extensively. Accordingly, the results of the statistical analysis follow in the next chapter. A final chapter, chapter 6, provides a discussion on the research results and the limitations of this study.

⁴ Geert Hofstede published his acclaimed book on cross-cultural differences '*Culture's consequences: International Differences in Work-Related Values*' in 1980. In this book, he describes the cultural dimensions. In this thesis, most information about his cultural dimensions will be derived from the subsequent update as written in 2001: *Culture's consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*.

2. Background and literature review

This chapter provides a theoretical and historical background on the subject. First, a short explanation of the development and importance of 'happiness economics' is given. Furthermore, the concept of SWB is defined and a brief literature review on the determinants of SWB will be given.

2.1. The rise of Happiness Economics

People have always thought about ways to improve the quality of life. The confirmation of one's equal right to pursue their own happiness is even one of the first mentioned aspects of the American Declaration of Independence (1776)⁵ ⁶. Also in economics, happiness became a fundamental notion. In the economic concept of 'experienced utility' – which can be seen as a reintroduction of the 19th century's utilitarianism from economic thinkers such as Jeremy Bentham and John Stuart Mill – 'happiness' is an essential notion (Bruni & Porta, 2011). In consonance with the thoughts of the utilitarians, "questions of social policy are to be answered by calculating the consequences of alternatives for the total happiness of individuals" (Hausman, 2007, p. 26). Consequently, the morally right policy is the policy that maximises the happiness of the greatest number of individuals. With the concept of utilitarianism, Bentham and Mill inspired many early neoclassical economists in developing theories that have become essential in contemporary economics (Hausman, 2007; Bruni & Porta, 2011; Brue & Grant, 2013).

Based on the theoretical basis of 'welfare economics' as written by Pigou in his 1920 book *The Economics of Welfare*, economists started to believe that income growth is followed by an increase in welfare (Easterlin, 2013; Brue & Grant, 2013). Although positive correlations between happiness and income were found in cross-sectional data, a longitudinal study by Richard Easterlin (1973) showed that economic growth does not raise happiness over time (Easterlin, 2013). As he explains it himself: "Within a country at a given time those with higher incomes are, on average, happier. However, raising the incomes of all does not increase the happiness of all" (Easterlin, 1995, p. 44). This paradoxical finding was the birth of what became known as the Easterlin Paradox. With his research, Easterlin – together with the research by Tibor Scitovsky (1976) – brought economic research on happiness to a renewed life in the 1970s after decades of focus on rational utility maximization (Bruni & Porta, 2011). Since that time, the empirical study of happiness gained systematic attention in the scientific debate in economics (Diener & Suh, 2000). Many studies tried to examine the determinants of SWB and studied ways to include it in economic models or to use it as a determinant of economic outcomes

⁵ "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.–That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed" (Bill of Rights Institute, n.d.).

⁶ However, at first these rights mainly applied on white American men, since slavery was only to be abolished in 1865, American women did not have the right to vote until 1920 and – especially in the southern states – racial segregation has been a huge social issue until the late 1960's.

(Piekalkiewicz, 2017).

2.1.1. The necessity for new measurements of welfare

These days, there is an increasing attention to complement conventional welfare measurements such as Gross Domestic Product (GDP) or Gross National Income (GNI) - which both basically measure the value of all goods and services produced in an economy – with more holistic measurements. Purely economic indicators are insufficient to measure progress and development of a nation, since an increasing economic development does not guarantee an increase in happiness. In the first instance, a seemingly paradoxical finding could be found in the huge concerns that many individuals living in developed nations have about the increasing globalization and outsourcing. Although economic theory predicts an increase in a countries' GDP because of these phenomena, many people are concerned that it would lower SWB (Schimmack, 2006).

According to Graham (2008), the study of happiness in economics is part of a more general move in the academic field that challenges narrow assumptions in neoclassical economics. Perhaps one of the most famous (and flawed) suppositions in neoclassical economics is the assumption that “individuals are rational utility maximizers who have good information and, at least on average, process it accurately in pursuing their economic self-interest” (Brue & Grant, 2013, p. 298). Happiness economics on the contrary, is based on broader notions of utility and welfare and could therefore be used to complement more conservative income-based measures such as GNP or GDP (Graham, 2008).

In a report by the OFCE – an independent and publicly funded French research institute whose activities focus on economic research, public policy evaluation and economic forecasting – Stiglitz et al. (2009) mention several shortcomings of GDP; for example, the inability of GDP to include depreciation of capital and degradation in quality of the natural environment. In addition, Kenny (1999) mentions that “there are clearly goods and services captured in the national accounts – government output for example – of which we do not know the value to consumers” (p. 4). Furthermore, (feminist) economists have argued since the early 1990s to include parameters such as unpaid domestic and care work into measurements of economic performance (Power, 2004; Agenjo-Calderón & Gálvez-Munoz, 2019; Blank, 1993; Himmelweit, 1995). Besides these examples, many other criticisms have been raised against the use of GDP to measure the quality of life.

However, criticisms on GDP are nothing new. Simon Kuznets (1934) – one of the founders of this economic parameter – already warned for the limitations of using GDP as a welfare-indicator by writing that “The welfare of a nation can ... scarcely be inferred from a measure of national income” (p. 7). Although the shortcomings of this measurement have been known for decades, GDP started to face increased public criticism since the financial crisis in the period 2008-2012. According to Stiglitz et al. (2009) the crisis has raised public questions “about the assessment of national economic performance” (p. 5). In addition, alternative measurement methods of SWB – such as the Better Life Index of the OECD (n.d.), the Human Development Index of the United Nations (n.d.) and experienced utility (utility

as hedonic experience) (Kahneman & Sugden, 2005) – have been developed in the last decades, which might make using measurements of well-being more applicable for policy-makers⁷.

Partly because of these developments, “governments around the world are now beginning to seriously consider the use of measures of subjective wellbeing . . . for monitoring progress and for informing and appraising public policy” (Dolan & Metcalfe, 2012, p. 409). Layard (2005), for instance, recognizes direct means to increase happiness via fiscal and labour market policy and according to Piekalkiewicz (2017), happiness can be used to value non-market goods such as the valuation of health (Ferrer-i-Carbonell & Van Praag, 2002), the climate (Brereton, Clinch, & Ferreira, 2008), or air quality (Luechinger, 2009; Welsch, 2006).

2.2. Defining ‘happiness’

In the academic literature, a single definition of well-being and happiness does not exist. According to Ed Diener (1984) – a renowned scholar in the SWB literature – definitions of well-being and happiness can be subdivided into three categories. The first category focusses on external criteria such as holiness or virtue and these definitions of happiness can be seen as normative since they prescribe which criteria are desirable. The second category of SWB focusses on the way in which people perceive their own life in general and can be described as life satisfaction. Ouwenel and Veenhoven (1991) for example define happiness as “the degree to which an individual evaluates the overall quality of his life-as-a-whole positively” (p. 168). The third category of SWB stresses pleasant emotional experience and focusses more on happiness at the present moment. According to Diener (1984), this last category of SWB comes closest to the way in which people use the term ‘happiness’ in daily life. Despite of these clear differences, in the economic literature, the definitions of SWB, happiness and life satisfaction are often used interchangeably, though the focus mostly is on the last mentioned.

2.3. Determinants of subjective well-being

That wealth is not the sole indicator of overall happiness in a country has been widely known since Richard Easterlin uncovered the famous Easterlin Paradox in the mid-1970s. This paradox exists, because people consider their relative positions to others and quickly adapt to their new standard (Di Tella, Haisken-De New, & MacColloch, 2010; Piekalkiewicz, 2017; Diener E. , Suh, Lucas, & Smith, 1999; Johns & Ormerod, 2007; Stutzer, 2004). The quick adaption to new circumstances clearly shows that the correlation between life events and life satisfaction is rather low. In an often-cited paper in psychology, Brickman, Coates and Janoff-Bullman (1978) showed that individuals who won a lottery, after one year, reported comparable levels of life satisfaction as people who did not win. Similar results

⁷ Bhutan could be considered an inspiration for the rest of the world, since it has adopted the idea of Gross National Happiness (GNH) over GDP in its social and economic policy since 1972 (Oxford Poverty & Human Development Initiative, n.d.). However, the country and its GNH receive many criticism, since the country still denies human rights to minority populations (Meier & Chakrabarti, 2016) and the standard of living remains at a low level for most citizens (Luechauer, 2013).

were also found by Suh, Diener and Fujita (1996) and Schkade and Kahneman (1998). This shows that impactful life events – such as winning a lottery or losing a loved one – only influence SWB when those events happened recently, but barely affect life satisfaction in the long run. However, people who become disabled are not returning to their old levels of well-being. According to a study by Oswald and Powdthavee (2008), the degree of adaptation will be between 30% and 50%, depending on the severity of the injury. The quick adaptation to impactful life events implicates that stable parameters could be considered as more plausible determinants of SWB.

As these examples show, many other variables are important in explaining SWB, because even after controlling for differences in income, the levels of SWB vary remarkably between countries. Following a study by Frey and Stutzer (2000), three sets of sources of individual SWB will be distinguished: personality and demographic factors, micro- and macroeconomic factors, and institutional conditions.

2.3.1. Personality and demographic factors

The first set of determinants of individual SWB, which describes the more psychological side of SWB based on personal traits, has been discussed in detail by Diener et al. (1999). The authors discuss an influential review by Warner Wilson (1967) on the subject and add more recent insights concerning the debate. Where Wilson and other earlier researchers on SWB specifically focused on demographic parameters that correlate with SWB, Diener et al. (1999) look more extensively at the underlying process of SWB, since demographic factors seem to have only small effects on happiness. As they argue, “One’s temperament and cognitions, goals, culture, and adaptation coping efforts moderate the influence of life circumstances and events on SWB” (Diener E. , Suh, Lucas, & Smith, 1999, p. 286). Hence, they conclude that parameters such as a positive mind-set; resources to achieve personal goals; the presence of social confidants; and the economic development of the area in which someone lives, are better predictors of SWB. Steel and Ones (2002) investigated the explanatory power of national personality traits and found that neuroticism and extraversion significantly correlate with SWB on a national level. The importance of personal characteristics is also endorsed by Bruni and Stanca (2008) who consider intrinsically motivated sociality as one of the most important determinants of SWB.

2.3.2. Micro- and macroeconomic factors

The second set of sources of individual SWB covers micro- and macroeconomic factors (e.g. income, inflation, unemployment). As Di Tella et al. (2003) find in their article, changes in macroeconomic parameters strongly effect people’s SWB. The idea behind this is that these variables affect SWB, since it influences people’s potential to achieve their ambitions (Emmons, 1986). An evident example is of course income. Although Easterlin (1973) found that an increase in income does not automatically result in higher levels of SWB, both Diener et al. (1995) and Schyns (1998) found that income is still correlated with SWB. However, there are many other examples of micro- and macroeconomic factors that correlate with SWB. Further examining the income-happiness paradox, Van Hoorn and Sent (2016) stress the

importance of consumer capital as a possible solution. In their paper, they describe consumer capital as “an accumulated stock of tangible and intangible instruments that yield a stream of services over their useful life (which may be financial assets that can be traded, but also may include health)” (van Hoorn & Sent, 2016, p. 985).

Unemployment and inflation are two other economic parameters that are often mentioned as determinants for SWB (Di Tella & MacCulloch, 2006; Frey B. S., 2018). As a British study by Clark and Oswald (1994) shows, unemployment strongly correlates with SWB⁸, much stronger than income does. According to their research, “being unemployed is worse, in terms of lost 'utility' units, than divorce or marital separation (Clark & Oswald, 1994, p. 658). Social pressure is an important factor in the strong negative relation between unemployment and SWB (Stutzer & Lalive, 2004). On top of this strong negative correlation, even after finding a new job, past unemployment reduces a person's current life satisfaction (Knabe & Rätzl, 2011). The strong negative effect of unemployment on SWB can mainly be explained with psychological and sociological factors. According to Frey (2018), “people without work lose their self-confidence and feel excluded from the rest of society, which is largely composed of employed people” (p. 15). Therefore, the negative effect of unemployment is the strongest in countries with a strong social norm (2004).

Although these examples indicate a clear importance of economic parameters in explaining SWB, Oswald (1997) argues that “in a developed nation, economic progress buys only a small amount of extra happiness” (p. 1827) and intrinsically it is not interesting at all. “Economic things matter only in so far as they make people happier” (Oswald A. J., 1997, p. 1815). Besides, as Johns and Ormerod (2007) argue, macroeconomic parameters for which a supposed relation with SWB exists are too unreliable and unstable to use for policy-making.

2.3.3. Institutional conditions

Institutional conditions cover the third set of sources that influence SWB. Just like Dorn et al. (2007), Frey and Stutzer (2000) consider democracy; the degree of government decentralisation; and the extent in which citizens can actively participate in the democratic decision-making, to be prominent institutional parameters in explaining happiness. According to these authors, people tend to be happier if they are able to actively participate in politics – in particular via popular referenda and initiatives – because this will lead to political decisions that will be more in line with the wishes of the citizens. In addition, Diener et al. (1995) emphasize the importance of political and civil rights in explaining SWB.

Furthermore, Inglehart et al. (2008) and Rahman and Veenhoven (2018) emphasize the importance of self-expression and freedom, especially for developed countries. In line with Oswald (1997), they found that “economic factors have a strong impact on SWB in low-income countries, but

⁸ Several studies (e.g. Oswald, Proto and Sgroi (2015), Harter, Schmidt and Keyes (2003) and Cropanzano and Wright (2001)), report an opposite correlation in which SWB positively determines people's productivity at work and their career success.

that, at higher levels of development, evolutionary cultural changes occur in which people place increasing emphasis on self-expression and free choice, leading them to increasingly emphasize strategies that maximize free choice and happiness” (Inglehart, Foa, Peterson, & Welzel, 2008, p. 279). Stiglitz et al. (2009) call attention to other institutional dimensions such as healthcare, education, security, and social connectedness.

3. Hypotheses Development

This thesis focuses on the relationship between cultural variables and SWB. Cultural variables are derived from the cultural framework by the Dutch social psychologist and economist Geert Hofstede (1980; 1988; 2001). While working for multinational enterprise IBM in the late 1960s and early 1970s, Hofstede collected survey responses on work related values of employees of subsidiaries all around the globe (resulting in approximately 116,000 respondents from 72 countries (Hofstede, 2001)). This led to the emergence of four cultural dimensions: (1) Power Distance, (2) Uncertainty Avoidance, (3) Individualism-Collectivism, and (4) Masculinity-Femininity. A fifth cultural dimension, Long-term Orientation was uncovered around 1985 after student samples from 23 countries in the Chinese Value Survey (Hofstede, 2001; Hofstede & Bond, 1988). An overview of the cultural dimensions scores per country is provided in Table 6 (see Appendix 2).

The cultural framework Hofstede developed can be considered as the first large value survey. According to Oyserman, Coon and Kimmelmeier (2002), this framework has had an important role in facilitating comparative research on cultural and cross-cultural research, since it organized cultural differences into overarching patterns. Although Hofstede collected the data five decades ago, the age of the data might not be a large issue as “cross-national differences in culture can be stable for millennia” (Van Hoorn, 2014, p. 56). Furthermore, more recent studies on cross-cultural research (e.g. Schwartz (1994) and Smith, Dugan and Trompenaars (1996) have affirmed Hofstede’s findings. Until this day, the model by Hofstede is often used in economic research, although later developed frameworks by Schwartz and GLOBE are considered superior in research areas such as cross-cultural psychology and international management (Beugelsdijk & Maseland, 2011).

According to Taras, Kirkman and Piers (2010), especially the cultural dimension individualism-collectivism gained a lot of attention in previous research on the predictive power of Hofstede’s cultural dimensions on a wide range of economic and psychological topics (see Kirkman et al. (2006) and Oyserman et al. (2002) for an extensive overview on this literature). However, Taras et al. (2010) found that there were actually not many statistically significant differences regarding the predictive power of the (original) four cultural values they examined. Therefore, of course driven by theoretical reasoning, this thesis will use all five cultural dimensions to investigate the relationship between national culture and SWB. In the following paragraphs, the cultural dimensions are shortly explained and predictions have been made on the supposed correlation with SWB.

3.1 Power Distance

A cultural dimension that is expected to affect SWB is *Power Distance*. In one sentence, Power Distance could be described as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede, 2001, p. 98). This means that people in nations that score low on this cultural dimension, try to distribute power more

equally and question authority. Residents from nations that score higher on this cultural dimension, in contrast, accept this unequal distribution of power.

For most people, this dimension might be most obvious in work-related circumstances. Inside organizations, this inequality is usually formalized in the relationship between the boss and the subordinates and is it often reflected in the leadership prototypes that are endorsed in that specific culture. For instance, “power distance was positively associated with self-protective leadership and negatively associated with charismatic and participative leadership” (Gelfand, Erez, & Aycan, 2007, p. 492).

The unequal distribution of power in countries that score high on the Power Distance index is expected to decrease SWB levels. In high hierarchical societies or organisations, people lower in rank might feel that they have not much saying or freedom in the things that are happening. This might cause people to feel less engaged and restricted in their possibilities to achieve their personal goals. Therefore, they might experience the feeling of powerlessness. All together this is likely lower the levels of SWB. Thus, the above discussion can be summarized with the following hypothesis:

H1. Countries that score higher on Power Distance have lower levels of SWB.

3.2 Uncertainty Avoidance

The second cultural dimension of Hofstede's framework is *Uncertainty Avoidance*. In the words of Hofstede (2001), Uncertainty Avoidance refers to “the extent to which the members of a culture feel threatened by uncertain or unknown situations” (p. 161). To come to this cultural dimensions, he (Hofstede) looked at stress, rule orientation and employment stability. The way in which individuals deal with uncertainty is, according to Hofstede, a partly non-rational process that differs between cultures. He (Hofstede, 2001) argues that “national cultures possess norms for (in)tolerance of ambiguity that are independent of the norms for dependence on authority” (p. 146). This dissimilarity in norms cause people to perceive the threat of uncertainty differently and leads to various ways to cope with uncertainty (Arrindell, et al., 1997).

Therefore, creativity, flexibility and innovations are ways in which the tolerance of uncertainty can be manifested (Praveen Parboteeah, Bronson, & Cullen, 2005). To cope with uncertainty, societies use technology, laws (including informal rules) and religion (Hofstede, 2001). Obviously, these institutions substantially differ between cultures. Societies have used technology in order to deal with uncertainties caused by nature. For instance, the Dutch have built dams and levees to protect themselves against the sea and the ancient Egypt's build irrigations systems to reduce their dependence on (very scarce) rainfall. However, these technologies might also take the form of services such as product warranties and insurance policies (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Furthermore, laws and (informal) rules were put in place to decrease uncertainty in the behaviour of other people and the remaining uncertainties were covered by religion (e.g. in the form of rituals and rites).

A first argument that might suggest a negative relation between Uncertainty Avoidance and SWB are the increased levels of stress and social anxiety that come together with high levels of Uncertainty Avoidance. Gudykunst, Yang, Nishida (1987) examined the relationship between Uncertainty Avoidance and social anxiety and found a strong positive correlation. This indicates that people in countries that show high levels of Uncertainty Avoidance experience higher stress levels. Therefore, I would expect these higher stress levels and social anxiety that seem to go hand in hand with Uncertainty Avoidance to affect SWB in a negative way.

Furthermore, I expect people from societies that show high levels of Uncertainty Avoidance to have a tendency to maintain their current situation, although this situation might not completely match their true desires. Therefore, they might not pursue their real life goals and will subsequently report lower levels of SWB. Lastly, in societies with high Uncertainty Avoidance people tend to worry more about their home life (Hofstede, 2001). This increased worrying is also likely to lower SWB. Therefore, this implies a strong negative correlation between Uncertainty Avoidance and happiness as well. Thus, the hypothesis is as follows:

H2. Countries that score higher on Uncertainty Avoidance have lower levels of SWB.

3.3 Individualism vs. Collectivism

Perhaps the most studied cultural determinant for several economic parameters is *Individualism-Collectivism* (Taras, Kirkman, & Steel, 2010). Several studies, among which Fischer and Boer (2011), Schyns (1998) and Diener et al. (1995) already found significant, positive correlations between Individualism and SWB. Hofstede (2001) describes an individualist society as a society in which people are mainly focused to look after themselves and their immediate family. In such a society, the ties between individuals are loose. Collectivism, the opposite of Individualism, “stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty” (Hofstede, 2001, p. 225).

The individualistic environment is likely to positively affect SWB, since Individualism emphasizes personal freedom and achievement. Therefore, personal achievements – such as important innovations, discoveries or great artistic accomplishments – are rewarded with higher social status in individualist societies (Gorodnichenko & Roland, 2016). This emphasis on personal achievement is often seen as an important factor in stimulating technological innovations and scientific progress (Taylor & Wilson, 2012). Besides, as Arrindell et al. (1997) argue, it might, in addition, give people from individualistic nations a greater feeling of responsibility for their accomplishments. This greater feeling of responsibility is ought to increase SWB. In addition, “Individualists are likely to place more value on personal well-being and thus seek SWB to a greater extent” (Diener, Diener, & Diener, 1995, p. 853).

Furthermore, at the cultural level, Hui, Yee and Eastman (1995) (as cited in (Triandis, 2000)) found a positive correlation between Individualism and job satisfaction. They reason that people in

individualistic societies are more socially mobile, which makes it easier for them to find work they actually like. Alesina et al. (2010) empirically tested the relation between family values and labour market outcomes and found that people who inherit stronger family ties are less mobile and, accordingly, often have lower wages and are more often unemployed. Cultures in which family ties are less strong might therefore give people the opportunity to be more socially mobile and accordingly have higher wages and jobs that better suit their personal preference. This increased career satisfaction for individualistic societies supposedly raises overall SWB, while collectivism is likely to have an opposite effect. The discussion above could be summarized with the following hypothesis:

H3. Countries that score higher on Individualism have higher levels of SWB.

3.4 Masculinity vs. Femininity

The fourth cultural dimension of Hofstede's cultural framework is *Masculinity* versus its opposite *Femininity*. Hofstede (2001) describes the two poles as follows:

“Masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; woman are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: Both men and woman are supposed to be modest, tender, and concerned with the quality of life.” (p. 297)

Following Arrindell et al. (1997), I would suggest a negative correlation between high levels of Masculinity and SWB. In masculine countries, on the one hand, people face larger levels of job-related stress, which consequently leads to lower overall satisfaction (Arrindell, et al., 1997). Feminine countries, on the other hand, are expected to have higher SWB scores since those cultures are more focussed on the quality of life.

Furthermore, Hofstede (2001) argues that feminine countries have less gender inequality and gender roles are less distinguished. The absence of, or at least substantially lower presence of, gender-related stereotypes in feminine cultures might enable individuals to really pursue their life goals. Social pressure in masculine countries might discourage people to follow a specific educational track or to start working in a specific field or profession. In feminine societies, this clear distinction between masculine and feminine activities is less striking. For instance, in a masculine society, it can be hard for boys to become a nurse, or, oppositely, for girls to pursue a career in IT. In a feminine society, these specific career choices would not foment any social disapproval or astonishment. Therefore, people will feel more freedom to pursue what they really want in life and thus will have higher levels of SWB. The following hypothesis summarises the discussed arguments regarding the relationship between Masculinity and SWB:

H4. Countries that score higher on Masculinity have lower levels of SWB.

3.5 Long- Versus Short-Term Orientation

The fifth cultural dimension of Hofstede's cultural framework is *Long-term versus Short-term Orientation*. Hofstede (2001) defines Long-term Orientation as "the extent to which a culture programs its members to accept delayed gratification of their material, social and emotional needs" (p. xx). In his original framework, developed in 1980, this cultural dimension was not yet included. Hofstede and Bond (1988) uncovered this new cultural dimension several years later after a large Chinese social survey. Related to Long-term Orientation are virtues such as patience, self-command, perseverance, temperance and foresight (prudence) (Graafland, 2020).

In a recent Korean study, Joshanloo, Jovanovic and Park (2021) state that long-term planning (along with sensation seeking) can influence self-controlled behaviour. They argue that long-term planning "facilitates self-controlled behavior and might lead to greater well-being" (Joshanloo, Jovanovic, & Park, 2021, p. 49). The extent to which individuals are long-term orientated differs between cultures. Especially East-Asian countries, such as China, Japan and South Korea, show high levels of Long-term Orientation, while most Western countries score on the low side of the Long-term Orientation index. According to House et al. (2004), "future-oriented individuals and cultures have a capacity to enrich their lives and maintain self-control, whereas present-oriented individuals and cultures strive to simplify their lives and rely more on others" (p. 285).

Graafland (2020) also recognizes the importance of a long-time orientation in explaining happiness. He argues that societies with a longer time-orientation will be more inclined to make investments that pay off in the long term, while societies that focus on short-term results would be more likely to refrain from these investments and spent their effort on instant gratification. For instance, Figlio et al. (2016) found that students from countries with long-term attitudes perform better in school and are more likely to enrol in advanced courses than students from cultures that do not emphasise the importance of delayed gratification. Furthermore, "long-term orientation is likely to encourage saving and technological development" (Graafland, 2020, p. 133). The above arguments related to relation between Long-term Orientation and SWB are summarised in the following hypothesis:

H5. *Countries that score higher on Long-term orientations have higher levels of SWB*

4. Data and Method

This study employs on quantitative research methods. The relationship between culture and SWB will be examined using a statistical analysis on the dataset from the European Social Survey (ESS) (2020). This dataset contains data between 2002 and 2018 that has been gathered by conducting thousands of interviews with residents from European countries⁹. This data will be matched with the cultural framework by Hofstede (2001; 1980), since the cultural dimensions are the most important independent variables in this thesis. To check for robustness, the comparable dimensions of GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004) replace the cultural dimensions of Hofstede. Like the dependent variable, SWB, the control variables are taken from the ESS. These variables are included in the model to control for personal characteristics that are expected to influence SWB. These variables will be further discussed in section 4.1.3 of this chapter.

The sample has been constructed of respondents who are residing in their birth country but who have parents who were both born in another country. Only observations will be used of which both parents come from the same country of ancestry, because the cultural background they transmit to their children might be more complicated to distinguish if the parents do not originate from the same origin-country. This is the case, since it often differs which of the two parents, the father or the mother, is the most dominant in transmitting their origin country culture. Using only respondents of which both parents originate in the same country reduced the total sample of 422,985 to 38,979 observations¹⁰.

In the ESS questions in which was asked for the country of birth for the father and mother, some respondents answered with countries that, nowadays, ceased to exist or even named complete regions. Countries that do not exist anymore, such as the USSR and the DDR, have been altered into the most appropriate country (Russia and Germany respectively). In Appendix 3, Table 7, a list is presented of the home-country responses that had to be altered to fit the dataset. If the father or mother originates from a country that does exist today, but is not in the Hofstede dataset, the observations were omitted.

4.1. Variables

4.1.1. Dependent variable: SWB

To measure SWB the variable ‘*life satisfaction*’ will be used (‘stflife’ in ESS). This variable was assessed by asking people the following question: “*All things considered, how satisfied are you with your life as a whole nowadays?*” People could answer this question on a scale from 1 (extremely dissatisfied) to 10 (extremely satisfied). The second SWB-related variable that was asked for in the ESS is the variable ‘*feeling of happiness*’ (‘Happy’ in ESS). The following question has been asked to the survey respondents in order to asses this variable: “*Taking all things together, how happy would you*

⁹ See Appendix 2 for an overview of the countries in which the surveys have been conducted.

¹⁰ Later, more observations will be eliminated from the sample because of missing values in the control variables.

say you are?" Respondents could answer this question on a scale from 1 (extremely unhappy) to 10 (extremely happy). The focus of the empirical models will be on life satisfactions, the first mentioned measurement of SWB. 'Life satisfaction' has been chosen as the main dependent variable, since economists are most concerned about the quality of life overall.

4.1.2. Independent variables

As discussed in Chapter 3, the cultural variables which are used to proxy for culture are derived from Hofstede's (1980; 2001) cultural framework. In the main analysis, the cultural dimensions Power Distance, Uncertainty Avoidance, Individualism Masculinity-Femininity and Long-term Orientation are used to uncover the influence of culture on SWB.

4.1.3. Control variables

In chapter 2, the background and literature review, many factors that have a theoretical relevance on SWB have been identified. As discussed earlier, three sets of sources that explain happiness are distinguished in prior economic and psychological literature: personality and demographic factors, micro- and macroeconomic factors, and institutional conditions (Frey & Stutzer, 2000). By using destination-country- and year fixed effects, the model controls for country specific differences and the effect of time. Since the regression model uses destination-country fixed effects in order to deal with country specific features, only the personality and demographic characteristics need to be included in the model as control variables¹¹. An overview and short description of the individual characteristics are depicted in Table 1; Table 8 (see Appendix 5) provides further details about the descriptive statics of these variables.

Variable	Var. ESS	Notes
Health	HEATLH	Both physical and psychological health do strongly correlate with SWB (Diener E. , Suh, Lucas, & Smith, 1999; Frey B. S., 2018). In order to examine the subjective general health, the ESS-researchers asked the respondents the following question: <i>How is your health in general?</i> People could answer this question on a scale from very good, to very bad. Transmitting this into a cardinal measure, the answered were numbered from 1 (very good) to 5 (very bad) ¹² . According to Frey (2018), subjectively perceived good health has a stronger correlation with life satisfaction than objectively evaluated health by medical specialist, since people differ in the way that they deal with their health status.
Income	HINCTNT / HINCTNTA	On average, people who receive higher incomes are happier than people with low incomes are (Easterlin, 1973). Thus, the household's total net income from all sources per year is included in the model. In the ESS, people are not asked to provide a precise net income, but they had to fill in in which

¹¹ The normally pooled model would be: $SWB_{ioidt} = \beta_0 + \beta_1 X_t + \beta_2 C_o + \varepsilon_{ioidt} + a_i$ in which a_i is the error term for country specific deviations. This extra error term will disappear by adding country specific dummy variables. The model will become: $SWB_{ioidt} = \beta_0 + \beta_1 X_i + \beta_2 C_o + \beta_3 D_{AUT} + \beta_4 D_{BEL} + \dots + \beta_{32} D_{GBR} \varepsilon_{ioidt} + a_i$. When the mean is subtracted from the new dummies regression, the final model will be: $SWB_{ioidt} - \overline{SWB_{ioidt}} = \beta_1 (X_i - \overline{X_i}) + \beta_2 (C_o - \overline{C_o}) + (\varepsilon_{ioidt} - \overline{\varepsilon_{ioidt}})$ and the error term for country specific deviations (a_i) has vanished.

¹² The variable has been multiplied with -1 in order to make the scale ranging from 'very bad' to 'very good'.

		interval represents their net income most accurately (e.g. € 21.000 to € 26.000 per month). However, it is hard to make cross-country comparisons based on income levels since the purchasing power significantly differs between countries. Moreover, “It is not the absolute level of income that matters most, but rather one’s position relative to other individuals” (Stutzer, 2004, p. 90). Therefore, income is included in the model by calculating percentile ranks¹³. In the fourth round of the ESS, the method of measuring household income changed. Deciles 1+2 and 11+12 of the ESS were combined, resulting in 10 deciles in total. For consistency reasons, this alteration has also been performed for the first three ESS rounds.
Education	EISCED	Although some might argue that the expected positive correlation between education and SWB occurs because it proxies for earnings, Blanchflower and Oswald (2004) found that education plays a role in determining SWB independently of income. According to Frey and Stutzer (2000): “People with higher education report significantly higher subjective well-being” (p. 925). This might be the case, since more advanced education often entails more life opportunities (Frey B. S., 2018). Besides, “education is widely regarded as the key to individual economic and social mobility” (Breen & Karlson, 2014, p. 107). Therefore, education is likely to be an important determinant in explaining SWB. To include the highest level of education as achieved by the respondent in the model, indicator variables are used. <i>Not possible to harmonise into ES-ISCED</i> will be used as a reference category. The other categories are: • <i>ES-ISCED I, less than lower secondary</i> • <i>ES-ISCED II, lower secondary</i> • <i>ES-ISCED IIIb, lower tier upper secondary</i> • <i>ES-ISCED IIIa, upper tier upper secondary</i> • <i>ES-ISCED IV, advanced vocational, sub-degree</i> • <i>ES-ISCED V1, lower tertiary education, BA level</i> • <i>ES-ISCED V2, higher tertiary education, > = MA level</i> Missing values have been omitted from the sample.
Age	AGEA	To control for age, the respondent’s age has been included in the model. According to Frey (2018) and Blanchflower and Oswald (2004), the relationship between age and life-satisfaction shows a clear U-curve (assuming health remains constant). Young people are on average quite happy, since they are still ambitious and think they can achieve their personal goals. Middle-aged people are less happy, with the lowest point in the late 30s, since they face more social pressure to be successful and they noticed that it is impossible to achieve all their life goals. Older people are on average happier with their lives, since they have adapted to their conditions and they readjust their goals. Diener and Suh (1998) and Diener et al. (1999) however argue that SWB remains quite stable and even slightly increases across the adult life span. A study by Gerstorf et al. (2008) even claims that satisfaction with life decreases, as people grow older. However, for this model, a clear U-curve is expected. Therefore, the variable will be included in the model as polynomial function. Figure 2 (see Appendix 5) displays the distribution of age in the sample.
Gender	GNDR	Following Fernández (2011), gender will be included in the model as an individual characteristic.

¹³ The percentile rank was calculated using the following formula: $\frac{rank-0.5}{n}$.

		Although, Diener et al. (1999) did not find any significant differences in reported SWB between males and females after demographic variables had been controlled, controlling for gender might prevent biases caused by differences in country's sample. To control for gender, a binary variable for gender has been included in the model (using males as the reference category).
Living with partner	PARTNER	People who live together with their partner seem to be more contented than people that live solitarily (Diener E. , Suh, Lucas, & Smith, 1999; Wadsworth, 2016; Frey B. S., 2018). A reason for this positive correlation could be that people who live together are often less lonely. Besides, a stable partnership can be seen as a counterweight to a stressful work life (Frey B. S., 2018). Therefore, this categorical variable has been added to the model by the means of an indicator variable. Respondents that do live together with their husband/wife/partner at household grid have been used as the reference category.
Household setting	HHMMB	Frey and Stutzer (2000) consider household setting to be an important demographic variable as well. For this question, the number of people in the household has been asked. A negative correlation is expected, since larger households are often caused by poverty. Overall, large household sizes are observed in the more poor areas of the earth such as Africa and the Middle East (United Nations, 2017). Lanjouw and Ravallion (1995) describe it even as a stylised fact that large families tend to be poorer (especially in developing countries). In many poorer countries with less developed social security, many older people have to live in with their children after retirement. Therefore, large households that include both children under 15 years old and older people (>60) is more common in poorer nations in mostly Africa and Asia (United Nations, 2017). This large household seizes, especially when including both children and elderly people, could put more pressure on people and restrict them in their possibilities to pursue their own goals.
Main daily activity	MNACTIC	As discussed in section 2.3, unemployed people are significantly more dissatisfied with their lives than employed people are (Clark & Oswald, Unhappiness and unemployment, 1994; Frey B. S., 2018). Therefore, there is also controlled for the main daily activity of people. In order to include the categorical variable 'main daily activity' in the model, indicator variables have been added for the different categories. The category 'paid work' has been chosen as the reference category. The categories 'other', 'not applicable', 'refusal', 'don't know' and 'no answer' are eliminated from the sample. The other categories are: • Education • Unemployed, looking for a job • Unemployed, not looking for a job • Permanently sick or disabled • Retired • Community or military service • Housework, looking after children, others • Other main activity
Religiosity	RLGDGR	People who are religious appear to be happier than people who are not part of a religious community (Frey B. S., 2018). According to Frey (2018), this positive influence is caused by the ability of religious people "to cope with the adversities of life" (p. 19) and the increased contacts with other people that belong to the same religious community. The variable which proxies for religion measures the extent to which an individual considers himself religious on a scale from 0 (not at all religious) to 10 (very religious).

Table 1: Vector of individual characteristics(X_i).

4.2. Method

According to Fernández (2011), the absence of an empirical approach was a major reason for the marginalization of the role of culture in economic outcomes. Basic approaches, such as a cross-country regression, lead to severe problems such as omitted variables and endogeneity (Fernández, 2011) and experimental research has its problems as well¹⁴ (Roth, Prasnikar, Okuno-Fujiwara, & Zamir, 1991). Therefore, Fernández further developed and formalized an empirical method to enable the separation of the effect of culture (Luttmer & Singhal, 2008). This method – which became known as the epidemiological approach – will be used in this research to investigate the relation between culture and SWB.

4.2.1. The epidemiological approach

The epidemiological approach is often considered as a useful tool to investigate the influence of culture. This is the case, since this method provides the opportunity to separate the effect of culture from the effect of economic/institutional circumstances. Therefore, the epidemiological approach has been used to an increasing extent to investigate the relationship between culture and various economic outcomes (Fernández, 2011).

An early example of an economic study that used the epidemiological approach to investigate the role of culture is a study by Carroll, Rhee and Rhee (1994). They examined whether differences in savings rates are the result of cultural differences. Likewise, Luttmer and Singhal (2008) researched whether culture influences redistribution preferences. In their study, they found that the preference for redistribution of immigrants is significantly affected by the average preference for redistribution in the immigrant's country of ancestry and therefore conclude that culture plays an important role.

The epidemiological approach has also been used to examine labour market outcomes. Antecol (2000), for instance, studied the gender gap in labour participation rates. She concluded that the labour force participation rates for immigrants and their offspring are affected by cultural factors, since the host-country labour participation rates partly depend on the home-country labour participation rates. A few years later, Fernández and Fogli (2005), examined woman's participation in the formal labour market and fertility rates by studying second-generation immigrants. They found that – after controlling for indirect cultural effects such as educational background and spousal characteristics – that the female labour force participation and the total fertility rates from the country of ancestry significantly influences for work and fertility outcomes in the United States.

¹⁴ . Experiments, such as the ultimatum game, clearly showed that people living in the same circumstance tend to behave in different manners while making economic decision. Chuah et al. (2009), for instance, found that Malaysian students proposed higher shares to the other player if that player was also Malaysian, while British students did not show home country bias while determining the height of the share they propose to give to the other player. However, there are some problems in experimental design in multinational experiments; among which the difficulty to control for individual characteristics such as differences in languages, currencies and experiments (Roth, Prasnikar, Okuno-Fujiwara, & Zamir, 1991).

Another study that used the epidemiological approach to examine the effect of culture on labour market outcomes is a paper by Alesina et al. (2010). They examined the influence of the strength of family ties on labour market outcomes and found “that individuals who inherit stronger family ties are less mobile, have lower wages, are less often employed and support more stringent labor market regulations” (Alesina, Algan, Cahuc, & Giuliano, 2010, p. 1). As a result, the culturally defined strength of family ties determines people’s preference of strong regulated labour markets versus laissez-faire labour markets.

By looking at individuals that live under the same circumstances but have potentially different cultures, the epidemiological approach filters out the effect of culture. As the earlier mentioned studies that use this approach show, first- and second-generation immigrants are often studied in research on the economic effects of culture. The economic and institutional circumstances of these immigrants are the same as that of their fellow residents in the host-country, but they are likely to have (partly) maintained the social preferences and beliefs from their country of origin. This is also the case for the children of immigrants, since parents transmit their cultural beliefs to their children (Fernández, 2011).

Still, the results from the epidemiological approach should be taken with certain caution. Using the behaviour of immigrants entails some disadvantages. As Fernández (2008) points out, the deviating behaviour of immigrants could be due to one of the many shocks that immigrants are subject to (e.g. worse employment opportunities, greater uncertainty and language difficulties). For this reason, this thesis will focus on the behaviour of second-generation immigrants. Moreover, to limit the scope for selection bias, this thesis will look at immigrants in multiple countries, originating from different countries.

Besides the just mentioned disadvantage of using first-generation immigrants, Fernández (2008) mentions additional disadvantages of the epidemiological approach. For instance, the influence of the culture in the immigrant’s country of birth is likely to be reduced by the exposure to the new country’s culture. In addition, she raises attention for the fact that immigrants might differ in their preferences and beliefs from the people in their country of ancestry and might therefore not be a representative sample of the home-country population.

4.2.2. Empirical model

In order to formally test whether culture affects happiness, the behaviour of second-generation immigrants is studied. The use of second-generation immigrants is expected to isolate the effect of culture on SWB, since the economic and institutional circumstances for the immigrants are the same as these circumstances are for the other residents. Using a similar approach as Fernández (2011) and Fernández and Fogli (2005), the following model is used to explain SWB (*SWB*) of individuals i with

origin country¹⁵ o and living in destination-country d at a certain point in time t :

$$SWB_{iodt} = \beta_0 + \beta_1 X_i + \beta_2 C_o + f_d + f_t + \varepsilon_{io} \quad (1)$$

A vector of individual characteristics such as age, health, income and level of education is represented in the model with subscript X_i . C_o denotes a proxy for culture in the country of origin, measured with the five cultural dimensions. f_d stands for destination-country fixed effects, which is used to control for all time invariant specific characteristics in the host country (e.g. past institutions with long-lasting effects, legal origins and endowments (Fernández, 2011)). f_t represents year-fixed effects to control for the influence of time (which is common to all the countries in the sample) and ε_{io} is the error term. By using fixed effects to control for destination country-specific and time-specific characteristics, indicator variables are added to the model for all but one country and year, which allows the intercept to differ across countries and periods. This reflects the fact that the respondents might have different distributions in different countries and years (Wooldridge, 2012). Besides, to solve for heteroskedasticity, robust standard errors account for clustering at the origin country level.¹⁶

¹⁵ With the origin country, the country of birth for the immigrated parent(s) is meant.

¹⁶ See Appendix 4 for more details about the misspecification tests.

5. Results

This chapter focuses on the main findings of the regression analyses. First, a short description of the statistic values is presented and, subsequently, the regression models are discussed. The first model examines the relationship between SWB and the origin's-country's cultural dimensions as developed by Hofstede (2001; 1980). The following two models examine the same correlation, but include several control variables to control for individual characteristics. Model 4 and 5 examine the same relationships, but divide the sample based on the respondent's age. Model 6 is almost similar to Model 3, but differs in the way it controls for age. In order to check whether the obtained results are robust, the models are replicated afterwards with the cultural dimensions as uncovered by GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004).

<i>Variable</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>VIF</i>	
1. Life satisfaction	23,736	6.959	2.290	0	10		
<u>Cultural Dimensions</u>							Independent variables
2. Power Distance	23,736	70.198	20.385	11	104	3.12	
3. Individualism	23,736	43.713	19.233	6	91	2.87	
4. Masculinity	23,736	47.429	17.262	5	110	1.51	
5. Uncertainty Avoidance	23,736	76.970	19.219	8	112	1.70	
6. Long-term Orientation	22,932	52.716	22.952	0	100	1.54	
7. Health	23,736	-2.216	0.969	-5	-1	1.51	Control variables
8. Income	23,736	0.500	0.287	13	22	1.57	
9. Education	23,736	3.544	2.199	0	7		
10. Age	23,736	48.072	17.432	15	114		
11. Gender	23,736	1.536	0.499	1	2		
12. Partner	20,577	1.394	0.690	1	9		
13. Household setting	23,736	2.808	1.487	1	15	1.53	
14. Main activity	23,736	3.101	2.603	1	9		
15. Religiosity	23,736	5.212	3.156	0	10	1.03	

Table 2: List of measures and statistical descriptives.

5.1. Baseline results

Table 2 provides descriptive information on the variables included in the model. The main analysis was conducted using respondents originating from 99 different origin countries and the sample has a mean SWB score of 6.959 (SD = 2.290). Table 3 displays the bivariate correlation between dependent, explanatory and control variables of Model 3. Since most variables are measured on an ordinal scale, the use of Pearson's correlation – the most popular correlation coefficient according to Tabachnick and Fidell (2014) – is undesirable or even misleading (Hauke & Kossowski, 2011). Therefore, Spearman's rank correlation coefficient (ρ) is used to examine the bivariate correlation between the variables. Hauke and Kossowski (2011) describe this correlation coefficient as “a nonparametric (distribution-free) rank statistic proposed as a measure of the strength of the association between two variables” (p. 89).

The correlation matrix of key variables already provides an overview of the correlation between the variables and could therefore visualize patterns in the data. As Table 3 shows, high Power Distance scores are characterised by lower health ($\rho = -0.17$), lower income ($\rho = -0.16$) and lower levels of SWB ($\rho = -0.19$). For high Uncertainty Avoidance scores, similar results are shown; ($\rho = -0.17$) for health, ($\rho = -0.08$) for income and ($\rho = -0.15$) for SWB. In contrast, high Individualism scores are characterised by higher health- ($\rho = 0.07$) and income levels ($\rho = 0.13$) and higher levels of SWB ($\rho = 0.12$). Another (relatively) strong correlation can be found in the positive relationship between Long-term Orientation and education ($\rho = 0.18$). This might imply that countries that score high on Long-term Orientation put higher value on education. Besides, individuals from these countries are more likely to be non-religious as well ($\rho = -0.18$). This could be partly explained by the fact countries that score high on Long-term Orientation – such as China (Long-term Orientation = 87) and Japan (Long-term Orientation = 88) – are also characterised by an predominantly atheistic or agnostic population (91% and 87% respectively (World Population Review, 2022)).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Life satisfaction	1.00														
2. Power Distance	-0.19	1.00													
3. Individualism	0.12	-0.59	1.00												
4. Masculinity	0.10	-0.32	0.40	1.00											
5. Uncertainty Avoidance	-0.15	0.54	-0.36	-0.35	1.00										
6. Long-term Orientation	-0.07	0.24	-0.01	-0.17	0.30	1.00									
7. Health	0.30	-0.17	0.07	0.12	-0.17	-0.12	1.00								
8. Income	0.21	-0.16	0.13	0.02	-0.08	0.03	0.22	1.00							
9. Education	0.08	0.06	0.07	-0.03	0.05	0.18	0.10	0.17	1.00						
10. Age	-0.06	0.03	0.12	-0.01	0.06	0.12	-0.42	-0.14	-0.05	1.00					
11. Gender	-0.01	0.04	-0.01	-0.04	0.05	0.06	-0.07	-0.08	0.02	0.04	1.00				
12. Partner	-0.13	0.04	-0.03	-0.01	0.02	0.02	-0.05	-0.31	-0.07	-0.06	0.09	1.00			
13. Household size	0.09	0.04	-0.13	-0.02	-0.03	-0.14	0.19	0.27	-0.02	-0.36	-0.05	-0.44	1.00		
14. Main activity	-0.08	0.04	0.02	0.02	0.04	0.05	-0.28	-0.28	-0.14	0.39	0.18	0.07	-0.16	1.00	
15. Religiosity	0.06	0.03	-0.10	0.06	-0.07	-0.18	-0.01	-0.09	-0.12	-0.01	0.08	-0.00	0.10	0.08	1.00

Table 3: Correlation matrix for the basic regression (for Model 3)

5.1.1. Main analysis

In Table 4, the different regression analyses – in which life satisfaction has been used to proxy for SWB – are depicted. The first regression (Model 1) reports the results of the correlation between SWB and the cultural dimensions of the country of ancestry. Except for Masculinity, all variables show the predicted sign. Moreover, the negative correlation of Power Distance and Uncertainty Avoidance and the positive correlation of Long-term Orientation are statistically significant ($\alpha \leq 5\%$). Although the correlation between Individualism and SWB shows the hypothesized, positive sign, the correlation is statistically insignificant.

The second model shows a similar regression as Model 1 does. However, this time, several control variables are included to control for individual characteristics. As the r-squared shows, including these variables substantially increased the overall fit of the model; the r-squared almost doubled from 0.1154 to 0.2274. Power Distance and Uncertainty Avoidance both maintained their significant, negative correlation after including the control variables and the regression coefficient of Individualism neither changed its sign. The significant, positive correlation between Long-term Orientation and SWB also remains positive, but it lost its statistical significance. Contrary, the unexpected, positive correlation of Masculinity became significant on the ten percent level.

This unexpected but small, positive correlation (the coefficient does not exceed 0.0024) might be caused by the effect of the more egalitarian and feminine host-country culture on the second-generation immigrants. Since their parents raised them with norms and values that emphasize on the differences between men and women, and taught their children to conform to several gender related stereotypes that are considered normal in their country of ancestry, the opposite circumstances might give them extra awareness of the benefits of more egalitarian and feminine societies. People who have been raised in such a society by parents that also grew up in a similar environment might easily take these happiness-enhancing circumstances for granted. Accordingly, they might show less striking levels of SWB vis-à-vis people who originate from more masculine parts of the world.

In Model 2 and subsequent regressions, most control variables enter the model as predicted. Health and a household's total net income show a significant positive relationship with SWB and also living together with a partner significantly increases happiness (although it is also plausible that happy people are more likely to find a partner). Age, as expected, enters in a u-shaped way and women report significant higher well-being scores than men. Furthermore, unemployment – both for people that are looking for a job and for people that are not looking for a job – show to reduce SWB to a significant extent, while students seem to be significantly more satisfied with their lives.

5.1.2. Religiosity

In model 3, religiosity was included in the model as a control variable. The variable measures the extent to which a person would say he/she is religious, regardless of whether the concerning person belongs to a particular religion. This variable has been chosen over controlling for specific religions, because the national culture is likely to be heavily influenced by the dominant religion of that country. The variable was not included in Model 2, because the extent to which people are religious might strongly correlate with national culture. For instance, more than 70% of the population of countries such as Italy (74%), Slovakia (74%) and Poland (72%) say to identify with their religion or beliefs, while the share of citizens that identify with their religion or beliefs is significantly lower in countries such as Sweden (19%), Germany (35%) and Belgium (37%) (Special Eurobarometer, 2021). Including the variable in a later stadium enables to uncover the specific influence of the variable on the total regression. Including

religiosity to the regression model entailed some minor changes, to start with an increase of the overall fit of the regression from 0.2274 in Model 2 to 0.2343 in Model 3. Although all cultural dimensions kept their sign, Masculinity and Uncertainty Avoidance lost their statistical significance, while the small, positive regression coefficient of Long-term Orientation became significant.

Table 4: Regression models of the relation between culture and SWB. Dependent variable = Life satisfaction.

Model:	(Model 1)	(Model 2)	(Model 3)	(Model 4: age < 45)	(Model 5: age ≥ 45)	(Model 6)
Power Distance	-0.0071*** (0.0016)	-0.0049*** (0.0014)	-0.0057*** (0.0013)	-0.0034* (0.0020)	-0.0075*** (0.0014)	-0.0056*** (0.0013)
Individualism	0.0012 (0.0018)	0.0004 (0.0012)	0.0012 (0.0012)	0.0027* (0.0015)	-0.0013 (0.0014)	0.0010 (0.0012)
Masculinity	0.0019 (0.0017)	0.0024* (0.0012)	0.0018 (0.0012)	0.0019 (0.0016)	0.0023* (0.0012)	0.0020* (0.0012)
Uncertainty Avoidance	-0.0035** (0.0017)	-0.0028** (0.0013)	-0.0022 (0.0013)	-0.0027 (0.0018)	-0.0014 (0.0014)	-0.0021 (0.0013)
Long-term Orientation	0.0035*** (0.0013)	0.0007 (0.0010)	0.0024** (0.0009)	0.0013 (0.0012)	0.0033*** (0.0010)	0.0024** (0.0009)
Health		0.6191*** (0.0261)	0.6138*** (0.0267)	0.5557*** (0.0395)	0.6495*** (0.0358)	0.6121*** (0.0266)
Household's total net income		0.8940*** (0.0549)	0.9450*** (0.0563)	0.9679*** (0.0772)	0.8771*** (0.1018)	0.9272*** (0.0579)
ISCED I		-0.1526 (0.1051)	-0.1805* (0.1036)	-0.2210 (0.1609)	-0.1207 (0.1060)	-0.1895* (0.1020)
ISCED II		-0.2150** (0.0830)	-0.2118** (0.0819)	-0.3360** (0.1392)	-0.1421 (0.0919)	-0.2416*** (0.0820)
ISCED IIIb		-0.0964 (0.0748)	-0.0866 (0.0753)	-0.1679 (0.1169)	-0.0217 (0.828)	-0.0941 (0.0760)
ISCED IIIa		-0.1043 (0.0937)	-0.0880 (0.0935)	-0.1918 (0.1412)	-0.0069 (0.0920)	-0.0887 (0.0930)
ISCED IV		-0.0543 (0.0777)	-0.0339 (0.0792)	-0.0626 (0.1100)	-0.0136 (0.0750)	-0.0278 (0.0786)
ISCED V1		-0.1185 (0.8244)	-0.0843 (0.0837)	-0.1417 (0.1096)	-0.0136 (0.1070)	-0.0773 (0.0842)
ISCED V2		-0.0538 (0.0701)	-0.2239 (0.0707)	-0.0769 (0.1034)	0.0552 (0.0856)	-0.0129 (0.0687)
Age		-0.0538*** (0.0063)	-0.0535*** (0.0062)	-0.1302*** (0.0311)	0.0144 (0.0218)	
Age squared		0.0006*** (0.0001)	0.0006*** (0.0001)	0.0017*** (0.0005)	0.0001 (0.0002)	
Gender (female)		0.1357*** (0.0322)	0.0965*** (0.0311)	0.1159** (0.0475)	0.0705** (0.0339)	0.1021*** (0.0302)
Partner (does not live with partner)		-0.4074*** (0.0474)	-0.4079*** (0.0474)	-0.4092*** (0.2152)	-0.4592*** (0.0649)	-0.4210*** (0.0518)
Household setting		0.0131 (0.0115)	-0.0056 (0.0115)	0.0352** (0.0144)	-0.0540*** (0.0205)	-0.0046 (0.0116)
Education		0.2215*** (0.0753)	0.2196*** (0.0764)	0.0803 (0.0738)	-0.0685 (0.2379)	0.0691 (0.0801)
Unemployed, looking for job		-0.7661*** (0.0747)	-0.7721*** (0.0736)	-0.7155*** (0.0853)	-0.9603*** (0.1319)	-0.7780*** (0.0737)
Unemployed, not looking for job		-0.5067*** (0.1085)	-0.5143*** (0.1084)	-0.5764*** (0.1393)	-0.4820*** (0.1739)	-0.5322*** (0.1074)
Permanently sick or disabled		-0.3462*** (0.0959)	-0.3652*** (0.0969)	-1.0656*** (0.2334)	-0.2010 (0.1422)	-0.3946*** (0.0971)

Retired		0.0369 (0.0606)	0.0312 (0.0615)	-0.7961** (0.3925)	0.0376 (0.0632)	-0.0814 (0.0712)
Community or military service		0.0425 (0.5218)	-0.0202 (0.5025)	-0.3491 (0.6942)	0.8945 (0.6991)	-0.0164 (0.0675)
Housework, looking after children		0.0213 (0.0650)	0.0050 (0.0655)	-0.0923 (0.0753)	0.1066 (0.0965)	-0.0164 (0.0675)
Other main activity		-0.1639 (0.1808)	-0.1638 (0.1803)	-0.3555 (0.2312)	0.0084 (0.2514)	-0.2384 (0.1807)
Religiosity			0.0655*** (0.0062)	0.0612** (0.0072)	0.6612*** (0.0358)	0.6551*** (0.0061)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Destination country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Age fixed effects	No	No	No	No	No	Yes
Number of observations	22,641	19,664	19,664	9,116	10,548	19,664
Number origin countries	99	99	99	98	96	99
R-squared	0.1154	0.2274	0.2343	0.1906	0.2697	0.2401

Robust standard errors are depicted in parenthesis and are adjusted for clustering at the (origin) country level. Specifications: Model 1 is a normal linear regression that shows the relation between life satisfaction and the origin-country cultural dimensions by Hofstede. Model 2 examines the same relationship as Model 1 does, but several control variables are included. Model 3 depicts a similar model as Model 2, but includes religiosity. In Model 4 and Model 5, the sample was split in two, based on the respondent's age. Model 4 shows the individuals that are younger than 45 and Model 5 depicts the individuals that are 45 years or older. Model 6 depicts a similar regression as Model 3, but it uses fixed effects to control for age. Statistical significance is indicated with asterisks (*=10%, **=5%, ***=1%).

5.1.3. Does the effect of culture weaken over time?

The theoretical reason for studying second-generation immigrants was that parents transmit their cultural values on their children (Fernández, 2011), but, in contrast to first-generation immigrants, second-generation immigrants are not as likely to show deviating behaviour because of the shocks first-generation immigrants are subject to when moving into a new country. However, “portable cultural factors appear to play less of a role for second- and-higher generation immigrants than for first generation immigrants” (Antecol, 2000, p. 421). This is the case, since social groups and the social environment in which someone grows up also determines someone's cultural values to an important extent (Harris, 1995). Therefore, the effect of the parent's culture on the second-generation immigrants is likely to weaken over time, while the transmission of cultural values from other social groups an individual is interacting with increases as an individual becomes older. Therefore, Model 4 and 5 divide the sample into individuals that are younger than 45 and people who are 45 years or older.

Against expectations, the explanatory power of Model 5 (0.2697), which depicts the older part of the sample, exceeds the explanatory power of Model 4 (0.1906), which shows the same regression for the younger part of the sample. Moreover, culture seems to correlate more strongly with SWB for the older half of the sample. In Model 4, which presents the results of the individuals below the age of 45, none of the cultural dimensions show a significant correlation with SWB. However, in Model 5, both Power Distance and Long-term Orientation show a significant correlation. Another noticeable difference is the importance of religiosity. Although being religious seems to raise levels of SWB for both the younger and the older part of the sample, this positive effect is much stronger for the older generations; 0.6612 for the older individuals, compared to 0.0612 for the younger part of the sample.

Perhaps the differences in the cultural variables' levels of significance between Model 4 and 5

are caused by the higher level of globalisation of younger generations. The cultural values of the younger generations might be influenced by norms and values from other cultures more strongly than their parent's culture is. For instance, younger generations watch American TV-shows on streaming services such as Netflix and HBO, listen to Swedish music on platforms such as Spotify or YouTube and get in contact with (likeminded) individuals all across the globe via social media. Their parents did not have those possibilities when they grew up and may still not use these contemporary advancements to the same extent as their children do. Since Model 4 and 5 indicate that age has an important influence on the relation between culture and SWB, Model 6 shows a similar regression as Model 3, only varying in the use of fixed effects to control for age. Although the overall fit of the model slightly increases in comparison to Model 3 (from 0.2343 to 0.2401), the extent to which the cultural variables influence SWB barely changes.

5.2. Robustness checks

To assess the robustness of the results, 'happiness', instead of 'life satisfaction', is used to proxy for SWB in Model 7 and in the subsequent regressions – Model 8 to 12 – Model 2 until 6 are replicated using alternative measures for culture. In these models, Hofstede's measures of cultural dimensions are replaced by the equivalent measurements by House et al. (2004). Although the researchers of GLOBE uncovered nine cultural dimensions, instead of the five Hofstede uncovered, they show large similarities with the cultural dimensions Hofstede developed. The cultural dimensions 'Power Distance' and 'Uncertainty Avoidance' appear in both the framework by Hofstede and the framework by GLOBE. In the cultural framework of GLOBE, there is no measure of Individualism, but there is 'In-group Collectivism' and 'Institutional Collectivism', which are practically the opposite of the measurement by Hofstede (see Figure 3, Appendix 5 for an illustration of the relation of Individualism and In-group collectivism with SWB). Masculinity can be replaced by 'Assertiveness', or by 'Gender Egalitarianism', which can be seen as the equivalent for femininity. However, as Hofstede considered assertiveness just as a trait of masculinity, GLOBE's dimensions of assertiveness might be too narrow to capture Hofstede's Masculinity dimension completely. Gender Egalitarianism might therefore be a better option to replace this dimension. 'Future Orientation' can be considered as the counterpart of Hofstede's Long-term Orientation dimension. In Table 10 and 11 (see Appendix 6) the regression-based response bias corrected scores for societal cultural practises and values scales by GLOBE are presented (this table is derived from Table B.2 in House et al. (2004, p. 742). These scores are corrected for the tendency for people from different cultures to respond to survey questions in a characteristic way. For the analysis, GLOBE's scores for societal cultural practices have been used¹⁷. Table 5 shows the regression results.

¹⁷ The database by GLOBE does not contain all nations Hofstede's dataset provided, which resulted in the omission of 62 (origin) countries – among which the Czech Republic, Estonia and Vietnam. Therefore, the latest five regressions show a substantially lower number of observations as the comparable models in the main analysis.

Table 5: Regression models of the relation between culture and SWB. Dependent variable = Life Satisfaction.
Robustness checks.

Model:	(Model 7: Happy)	(Model 8)	(Model 9)	(Model 10: age < 45)	Model 11: age ≥ 45)	(Model 12)
Power Distance	-0.0038*** (0.0012)	0.0464 (0.0914)	0.0400 (0.0845)	-0.0049 (0.1110)	0.0629 (0.1084)	0.034 (0.0829)
Individualism	-0.0009 (0.0010)	-0.1256** (0.0582)	-0.1848*** (0.0519)	-0.1741** (0.0800)	-0.2066*** (0.0511)	-0.1805*** (0.0511)
Masculinity	0.0016 (0.0010)	-0.0572 (0.0826)	0.0007 (0.0805)	0.0112 (0.1082)	-0.0906 (0.0919)	-0.0096 (0.0805)
Uncertainty Avoidance	-0.0014 (0.0011)	0.1640* (0.0954)	0.01963** (0.0848)	0.2743** (0.1095)	0.0853 (0.0859)	0.2084** (0.0833)
Long-term Orientation	-0.0002 (0.0009)	-0.0743 (0.1260)	-0.1321 (0.1143)	-0.2399 (0.1571)	-0.0498 (0.1255)	-0.1519 (0.1110)
Health	0.5675*** (0.0233)	0.6230*** (0.0364)	0.6153*** (0.0373)	0.5557*** (0.0526)	0.6483*** (0.0511)	0.6125*** (0.0364)
Household's total net income	0.6585*** (0.0590)	0.8261*** (0.0816)	0.8734*** (0.0856)	0.8837*** (0.1046)	0.7992*** (0.1543)	0.8453*** (0.0911)
Controlled for educational background	Yes	Yes	Yes	Yes	Yes	Yes
Controlled for age	Yes	Yes	Yes	Yes	Yes	No
Controlled for gender	Yes	Yes	Yes	Yes	Yes	Yes
Controlled for partner situation	Yes	Yes	Yes	Yes	Yes	Yes
Controlled for main activity	Yes	Yes	Yes	Yes	Yes	Yes
Controlled for religiosity	No	No	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Destination country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Age fixed effects	No	No	No	No	No	Yes
Number of observations	19,788	13,230	13,230	6,152	7,078	13,230
Number of origin countries	99	54	54	54	49	54
R-squared	0.2014	0.2379	0.2446	0.1947	0.2882	0.2511

Robust standard errors are depicted in parenthesis and are adjusted for clustering at the country level. Specifications: Model 7 shows the relation between happiness and Hofstede's cultural dimensions of the country of ancestry. Model 8 and 9 depict a similar regression as model 2 and 3, but use GLOBE's cultural dimensions instead of the dimensions by Hofstede. The five cultural dimensions by GLOBE that replace Hofstede's dimensions are: (1) 'Power Distance', (2) 'In-Group Collectivism', (3) 'Gender Egalitarianism', (4) 'Uncertainty Avoidance', and (5) 'Future Orientation'. Model 10 and 11, just like Model 4 and 5, examine the correlation between life satisfaction and culture making a dichotomy in the sample based on age. Model 12 depicts a similar model as Model 6 does, only differing in the use of GLOBE's cultural dimensions. To proxy for Hofstede's cultural dimensions, the same dimensions as developed by GLOBE are used as were used in Model 5. Statistical significance is indicated with asterisks (*=10%, **=5%, ***=1%).

5.2.1. Happiness instead of life satisfaction

Despite using the exact same variables while using happiness as a proxy for SWB, the regression coefficients with the cultural dimensions in Model 7 show some differences in comparison to the regression in Model 2 with life satisfaction as a proxy for SWB. For example, the positive correlation between Individualism and SWB became negative and the small, positive correlation between Long-term Orientation and SWB shifted sign as well. These differences might stem from the fact that happiness might be influenced too heavily by recent events and emotions. These temporally reactions on recent situations may have overshadowed the effect of long lasting determinants such as health and income while answering the survey question (e.g. an unemployed person that is overall not very satisfied with his/her life, could report very high happiness because he recently experienced a nice day off with his friends).

5.2.2. Alternative measures of national culture

Model 8 to 12 show a similar regression as were run in Model 2 to 6, only varying in the cultural dimensions that were used to proxy for culture; i.e. the cultural dimensions by Hofstede were replaced by the equivalent dimensions as developed by GLOBE. GLOBE developed nine dimensions¹⁸, each measured twice, as values and as practices. In order to study societal phenomena, practices are considered more relevant than the respective values (Javidan, House, Dorfman, Hanges, & Sully de Luque, 2006), because “values items describe what the respondent feels “should be”, practices items what she or he feels “is” (Hofstede, Neuijen, Ohayv, & Sanders, 1990, p. 294). This leads to the use of the latter (cultural practices) to replace Hofstede’s cultural dimensions in the robustness checks of this thesis.

Despite the similarities between the cultural dimensions in both frameworks, the regression results also show striking differences for some of the independent variables. A reason for these anomalies might be that the dimensions as developed by GLOBE do not measure the exact same thing as Hofstede’s dimensions. As Table 9 (see Appendix 5) shows, the bivariate correlation between the equivalent dimensions is rather low. Although Power Distance showed significant, negative results in the Hofstede regressions, the correlation became (insignificantly) positive in the GLOBE regressions (except for Model 10). In addition, Masculinity shows contradicting results in the GLOBE regressions as well. Although the positive correlation in Model 9 and 10 is in line with H4 – note that GLOBE’s measurement of ‘Gender Egalitarianism’ measures the opposite as Hofstede’s Masculinity dimension – this result is in contrast with the results that followed from the Hofstede regressions.

Individualism shows the predicted sign in almost all models¹⁹, except for Model 5, but it is hard to draw conclusions from these results, since they came out to be statistically insignificant in the main analysis. Contrary to the results in the Hofstede regressions, Uncertainty Avoidance shows to have a positive impact on SWB while using the cultural dimensions as developed by GLOBE as independent variables. Long-term Orientation seems to correlate positively – although not always significantly – with life satisfaction in the main analysis. However, the positive effect of Long-term Orientation is rather small; after including the control variables, the coefficients do not exceed 0.0033. This small, positive correlation is not confirmed in the robustness checks.

¹⁸ The nine cultural dimensions as developed by GLOBE are: Assertiveness, Institutional Collectivism, In-Group Collectivism, Future Orientation, Gender Egalitarianism, Humane Orientation, Performance Orientation, Power Distance and Uncertainty Avoidance (House, Hanges, Javidan, Dorfman, & Gupta, 2004).

¹⁹ Note that the negative correlations in the GLOBE regressions indicate the same as the positive signs in the Hofstede regressions, since GLOBE’s ‘In-Group Collectivism’ measures the opposite as Hofstede’s individualism.

6. Discussion and conclusion

6.1. Findings

The focus of this thesis was to answer the following research question: *How does culture affect subjective well-being?* Overall, the most important finding of this thesis is that cultural preferences and beliefs are likely to exercise influence over individual happiness outcomes, even outside of the environment in which these cultural values originate. For example, Power Distance and Uncertainty Avoidance showed a significant correlation in Model 2 and, while Uncertainty Avoidance lost its significance after controlling for religion in Model 3, Long-term Orientation's positive correlation became significant instead.

However, the exact relation between the cultural dimensions and SWB outcomes turned out to be hard to uncover. Cultural dimensions that showed an expected correlation of statistical significance in the main analysis depicted insignificant or even contradicting results in the robustness checks and, although Individualism showed consistent results in the anticipated direction in both the Hofstede as the GLOBE regressions, these results were all insignificant in the main analysis.

Besides, even while significant, the direct effect of culture on SWB is rather small. While control variables such as health and net income show strong positive correlations (e.g. the coefficients of health are always between 0.55 and 0.65 and net income almost increases SWB by 1 in most of the regressions), the effect of the cultural dimensions is almost exclusively lower than 0.01 in the main analysis. This leads to conclusion that culture, although to a small extent only, is likely to influence SWB, but the ambiguousness of the results makes a clear inference about the precise correlations impossible; e.g., cultural variables might function as a moderator in the relationship between SWB and other variables, instead of having a strong direct effect. Therefore, further research is needed to uncover the exact relation between culture and SWB.

6.1.1. Plausible explanations for the inconclusive findings

Although the epidemiological approach helped to filter out the cultural effects from the effects that stem from economic or institutional parameters, this does not mean that culture is independent from economic and institutional circumstances. This is the case, since institutions are set up and evolve to overcome difficulties faced by the society and they reflect the beliefs and preferences – the culture – from that society (Fernández, 2008). This might play a role in the inconclusiveness in most of the results. In addition, the ambiguous findings could be caused by the fact that this study solely examined cross-national differences and ignored that cultural differences within a country might sometimes be larger than the variation across countries; as Sivakumar and Nakata argue (2001), “it [culture] is heterogeneous within any given country” (p. 557). Therefore, inference on the individual or sub-group level must be taken with certain caution.

Although for many of the independent variables the hypothesized correlation cannot be

concluded from this research, these inconclusive findings do not necessarily mean that the examined cultural dimensions do not play a role in determining SWB. To start with, the regressions could be prone to omitted variable bias, since it was not possible to control for all individual-specific variables that are likely to have an important influence on someone's SWB. Personal characteristics such as people's temperament, personal goals and the extent to which somebody can adapt to changes in their life could not be included in the model, because such characteristics were not asked for in the ESS survey.

Furthermore, the variables that have been used to proxy for culture could just be wrongly chosen²⁰. This could be an explanation for the contradicting results of Power Distance and Uncertainty Avoidance. Using Hofstede's measurements, these cultural variables showed (significant) results in the anticipated direction, but while using GLOBE's measurement as a robustness check, the regression coefficients showed the opposite sign. This might be an indication that the two variants of Power Distance and Uncertainty Avoidance, despite sharing the same name, do not measure the exact same thing²¹. While Hofstede's measurement of Uncertainty Avoidance largely depends on people's stress levels, GLOBE's measurement of Uncertainty Avoidance practices measures to what extent steps have been taken to prevent uncertain situations (House, Hanges, Javidan, Dorfman, & Gupta, 2004). As explained earlier, societies use technology and laws to cope with uncertainty (Hofstede, 2001). By measuring the extent in which nations actually cope with uncertainty, the measurement might pick up the quality of institutions. This also explains why developed countries, such as Switzerland, Denmark and Germany, are among the highest scoring nations on this cultural dimension. Moreover, this clarifies the unexpected positive correlation, since individuals from these countries, on average, report higher levels of SWB (i.e. Switzerland ($r = 0.466$, $p = 0.020$), Denmark ($r = 1.067$, $p = 0.000$), Germany ($r = 0.363$, $p = 0.126$)).

Although the results from the main analysis convincingly show a negative correlation between Power Distance and life satisfaction and the consistent negative correlation of Uncertainty Avoidance hint at the expected relation, the lack of validation in the robustness check makes it difficult to reject the null-hypothesis. Therefore, future research should consider using other measurements to validate the findings of correlations between Hofstede's cultural dimensions and SWB.

Additionally, an insignificant correlation, or even an unexpected sign, might be due to the differences between individual- versus group-level correlations. It is, according to both Triandis (2000) and Steel and Ones (2002), not unlikely to find a strongly positive relationship on the group-level, while

²⁰ Scholars such as Sivkumar and Nakata (2001), McSweeney (2002), Kirkman et al. (2006) and Beugelsdijk, Kostova and Roth (2017) raised some criticisms on the cultural framework by Hofstede. McSweeney (2002) for example, points out that "the data used by Hofstede to construct national cultural comparisons were largely limited to responses from marketing-plus-sales employees" (p. 95) within IBM and, according to both Sivkumar and Nakata (2001) and Kirkman et al. (2006), Hofstede ignores cultural differences within a country.

²¹ E.g. Russia, which scores very high on Hofstede's measurement of Uncertainty Avoidance (95 while the highest value is 112), is the lowest scoring country on Uncertainty Avoidance ($UA = 3.09$ on a scale from 1 to 7) using GLOBE's measurement. Switzerland on the contrary, which in Hofstede's measurement of Uncertainty Avoidance just has an average value (58), is the highest scoring on Uncertainty Avoidance in GLOBE's framework ($UA = 5.42$).

the individual level shows insignificant, or even the opposite result. In their study, the last mentioned authors found that group-level analysis on the relation between personality and happiness often results in stronger relationships than a similar analysis on the individual level (Steel & Ones, 2002).

Subsequently, as mentioned earlier, the influence of the culture in the immigrant's country of birth is likely to be reduced by the exposure to the new country's culture. Therefore, their preferences and beliefs might vary substantially in comparison to the preferences and beliefs from the people in their country of ancestry (Fernández, 2008). These varying preferences and beliefs might indicate that these second-generation immigrants may not be a fully representative sample of the origin-country population.

6.1.2. The ambiguousness of the Masculinity dimension

Contrary to Power Distance, Masculinity showed an unexpected positive correlation while using Hofstede's measurement for Masculinity, but when using GLOBE's equivalent measurement – Gender Egalitarianism – the correlation showed the predicted positive sign after controlling for religiosity (Model 9). As argued in chapter 5, the unexpected correlations of the Masculinity dimension might be the result of a higher valuation of egalitarian norms and values by second-generation immigrants that originate from masculine societies. However, this alternative explanation needs further examination in future research. More convincingly, this inconclusive result could be caused by measurement differences between Hofstede and GLOBE. This could be the case since Hofstede considers assertiveness and gender roles to be important traits of Masculinity, while GLOBE separated these traits into two different cultural dimensions.

6.1.3. Individualism and Uncertainty Avoidance

Although both Individualism and Uncertainty Avoidance showed stable results in the expected direction in several models of the main analysis – i.e. a positive correlation between Individualism and SWB and a negative correlation between Uncertainty Avoidance and SWB – these findings were insignificant in most regressions. This makes it difficult to draw direct conclusions from these results about the relationship between those cultural variables and SWB. Moreover, the negative correlation between Uncertainty Avoidance and SWB was not confirmed in the robustness check. The relationship between Long-term Orientation and life satisfaction also shows rather inconclusive results. Despite showing an expected, positive correlation in the main analysis, these results came out to be (statistically insignificantly) negative in the robustness checks.

A reason for Individualism to depict an insignificant relation might be caused by the fact that some people feel a larger feeling of social support in collectivistic countries. Therefore, the strong positive correlation that was expected could have been balanced out a bit. This might be an opportunity for future research to study the correlation between individualism and SWB in non-linear ways as well.

Moreover, the insignificant findings might uncover that the positive correlation that was found between Individualism and SWB in earlier studies (e.g. Fischer & Boer (2011), Schyns (1998) and Diener et al. (1995)) is partly due to a reversed causality. As Fernández (2011) argues, by using the

epidemiological approach, this statistical issue is avoided; the individuals in the sample cannot be more individualistic because they are more satisfied with their life, since this individualism is transmitted from their parents culture without having any influence on it themselves. This might imply that the significant, positive results in earlier research were (partly) found because higher levels of SWB had made the individuals in the sample more individualistic, instead of vice versa.

The idea that the causality works in two directions – i.e. on the one hand, individualistic societies have a positive effect on people's SWB and, on the other hand, higher levels of SWB raises Individualism – is far from unlikely. As theorized in chapter 3, the individualistic environment is likely to positively affect SWB and individualistic people are more likely to value personal well-being and therefore pursue happiness to a larger extent. Contrary, societies might, for example, become more collectivistic because limited financial possibilities and bad institutions 'force' people to live together and depend more on one another. In contrast, developed nations are associated with higher income levels, which enables their citizens to live separately and focus on self-development. Still, further research is necessary to validate this finding and further examine the underlying process.

6.2. Limitations

To begin with, a few critical comments could be made on the chosen method. Despite its popularity in cross-cultural comparisons, cross-cultural value surveys have certain disadvantages. Criticisms are, for example, the risks of using micro-level data to explain macro-level phenomena and the issue whether survey questions succeed in measuring cultural values (Beugelsdijk & Maseland, 2011). Furthermore, one might argue that survey questions might be an unreliable way to measure one's well-being. The answers people provide in the survey might be firmly biased because of a recent argument at home or a stressful workday. Besides, different respondents might interpret the questions about happiness and life satisfaction differently, or, as Abdur Rahman and Veenhoven (2018) argue, people might present themselves more satisfied with their lives than they actually are. However, as Abdur Rahman and Veenhoven (2018) concluded from their review on many validation studies: "a review of these qualms provided no evidence that responses to these questions measure something other than what they are meant to measure" (p. 442). Besides, as Clark and Oswald (2002) argue: "Psychologists have made recent advances . . . showing that those who say that they are happy actually smile more, and are more likely to be described as happy by their friends" (p. 1140). Therefore, I would argue that using a cross-cultural value survey was the most appropriate way to study the relation between culture and SWB.

Another drawback in this thesis could be found in the high reliance on the questions that were asked for in the ESS. Although this large cross-national dataset enabled for a solid number of observations and, furthermore, contained many variables that were arguably important in determining SWB, many other plausible determinants of SWB (e.g. people's temperament, personal goals and the extent to which somebody can adapt to changes in their life) could not be included in the regression

models. Furthermore, a major part of the survey respondents originates from European countries since the ESS was held in European countries only. Therefore, generalizability of the findings might be also a concern. For future research on the relation between culture and SWB, scholars should consider conducting their own survey, held in a larger variety of countries.

6.3. Concluding remarks

In conclusions, the most important finding of this thesis is that culture is likely to affect individual SWB outcomes. Using the epidemiological approach by studying second-generation immigrants, cultural values of the country of ancestry still seem to exercise influence over individual SWB outcomes. Dividing the sample based on the respondent's age, culture seems to correlate more strongly with SWB for the older half of the sample. Possibly, globalisation led to a more amalgamated culture for younger second-generation immigrants, which weakened the cultural values that were transmitted by their parents.

Although culture is likely to have an influence on SWB, the precise relation came out to be difficult to unravel. Not only was the direct effect of culture on SWB small, findings of statistical significance were often not confirmed – or even contradicted – in the robustness checks. However, these often insignificant or contradicting results do not mean that culture is not effecting SWB at all. More likely, differences in measurement between Hofstede and GLOBE might have caused many of the contradictions. Therefore, a further exploration of the relation between culture and SWB might be addressed by further research.

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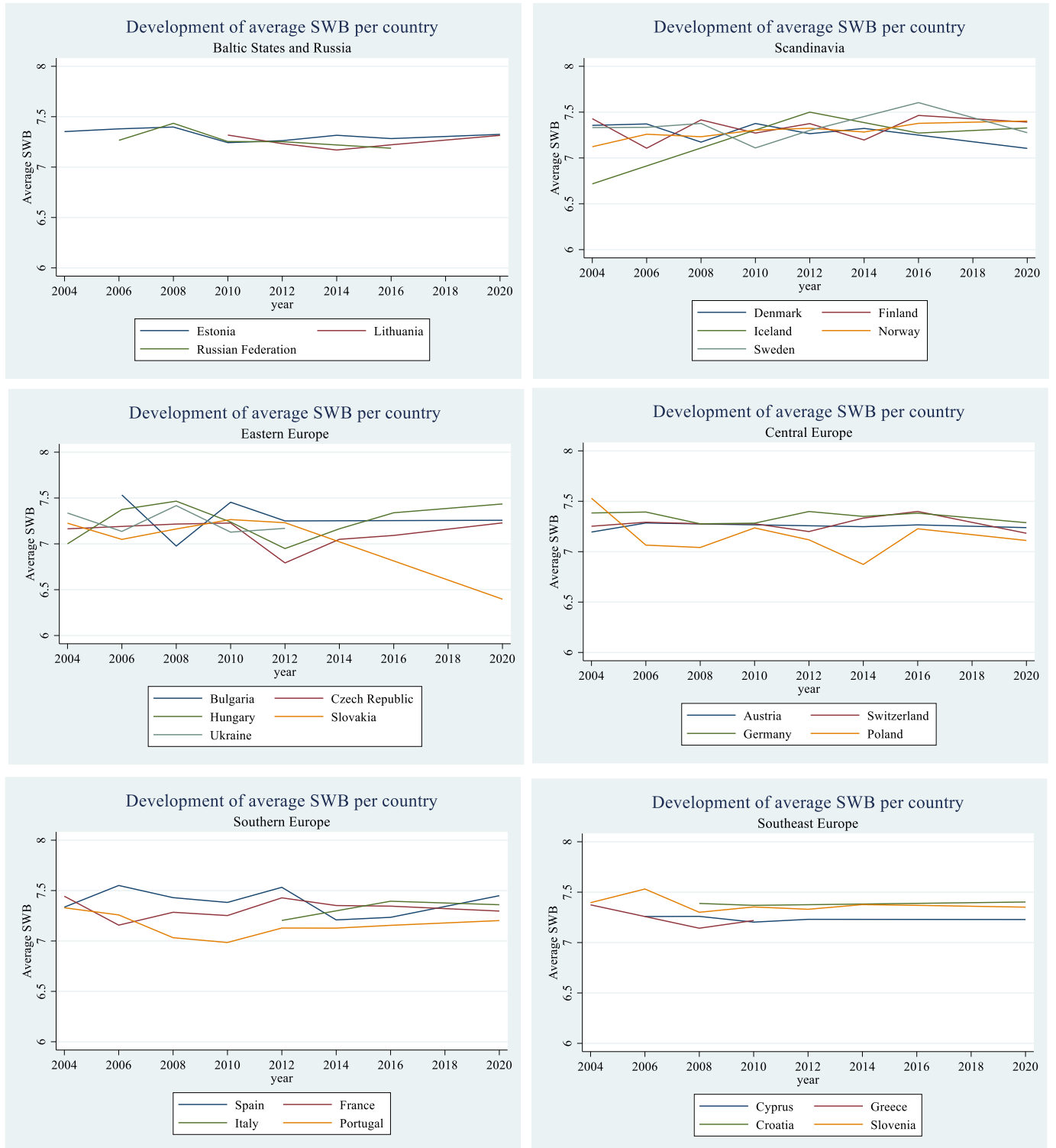
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Appendix 1: Development of average SWB per country

Figure 1 shows the development of average SWB per country. Only countries with three or more rounds in the ESS are depicted in the graphs. Therefore, Latvia, Israel, Turkey and Luxembourg are not displayed in the following graphs.



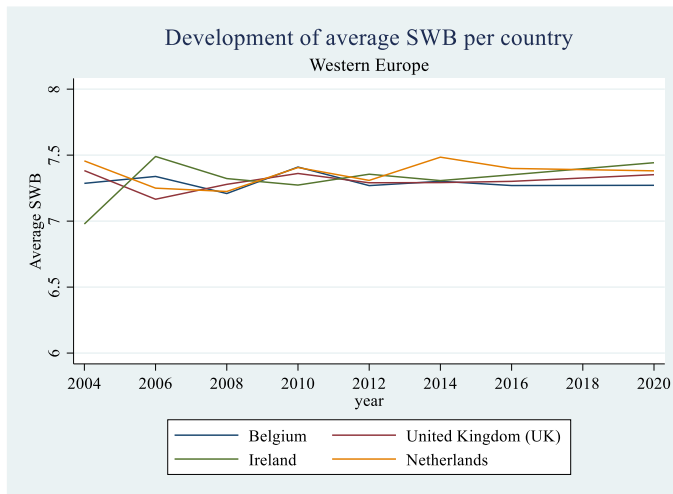


Figure 1: Development of average SWB per country

Appendix 2: Country list and cultural Dimensions

Table 6 shows how each country scores on Hofstede's (2001; 1980) cultural dimensions. The ESS dataset (2020) includes data from the countries that are depicted in the respondents' birth country column 'D', the so-called destination-country. The values represent the number of individuals that is born in that country. 'O' depicts the number of observations in which both parents of an individual are born in a certain country, while their child is born in the destination-country.

Country	PDI	IDV	MAS	UAI	LTO	D	O
Albania	90*	20*	80*	70*	61		247
Algeria	80*	35*	35*	70*	26		386
Angola	83*	18*	20*	60*	15*		85
Argentina	49	46	56	86	20		107
Armenia	85*	22*	50*	88*	61		74
Australia	38	90	61	51	21		21
Austria	11	55	79	70	60	666	195
Azerbaijan	85*	22*	50*	88*	61		58
Bangladesh	80	20	55	60	47		52
Belarus	95*	25*	20*	95*	81		349
Belgium	65	75	54	94	82	1,427	113
Bhutan	94*	52*	32*	28*			0
Bolivia	78*	10*	42*	87*	25*		46
Bosnia	90*	22*	48*	87*	70		903
Brazil	69	38	49	76	44		220
Bulgaria	70	30	40	85	69	86	231
Burkina Faso	70*	15*	50*	55*	27		7
Canada	39	80	52	48	36		23
Cape Verde	75*	20*	15*	40*	12*		83
Chile	63	23	28	86	31		89
China	80	20	66	30	87		121
Colombia	67	13	64	80	13		86
Costa Rica	35	15	21	86			10
Croatia	73	33	40	80	58	353	320
Cyprus						179	0
Czech Republic	57	58	57	74	70	221	225
Denmark	18	74	16	23	35	397	103
Dominican Republic	65*	30*	65*	45*	13		37
Ecuador	78	8	63	67			110
Egypt	80*	37*	55*	55*	7		101
El Salvador	66	19	40	94	20		8
Estonia	40	60	30	60	82	1,392	75
Ethiopia	70*	20*	65*	55*			132
Fiji	78*	14*	46*	48*			0
Finland	33	63	26	59	38	242	345

France	68	71	43	86	63	1,316	436
Georgia	65*	41*	55*	85*	38		150
Germany	35	67	66	65	83	1,681	925
Ghana	80*	15*	40*	65*	4		56
Greece	60	35	57	112	45	449	184
Guatemala	95	6	37	101			5
Honduras	80*	20*	40*	50*			11
Hong Kong	68	25	57	29	61		6
Hungary	46	80	88	82	58	112	242
Iceland	30*	60*	10*	50*	28	79	27
India	77	48	56	40	51		489
Indonesia	78	14	46	48	62		146
Iran	58	41	43	59	14		339
Iraq	97*	31*	53*	96*	25		493
Ireland	28	70	68	35	24	1,235	210
Israel	13	54	47	81	38	3,712	8
Italy	50	76	70	75	61	209	1043
Jamaica	45	39	68	13			64
Japan	54	46	95	92	88		30
Jordan	70*	30*	45*	65*	16		8
Kazakhstan	88*	20*	50*	88*	85*		88
Kenya	70*	25*	60*	50*			19
Kuwait	90*	25*	40*	80*			2
Latvia	44	70	9	63	69	291	83
Lebanon	62*	43*	48*	57*	22*		62
Libya	100*	35*	66*	67*	15*		116
Lithuania	42	60	19	65	82	203	159
Luxembourg	40	60	50	70	64	341	3
Macedonia Rep	90*	22*	45*	87*	62		141
Malawi	70*	30*	40*	50*			1
Malaysia	104	26	50	36	41		16
Malta	56	59	47	96	47		4
Mexico	81	30	69	82	24		22
Moldova	90*	27*	39*	95*	71		88
Montenegro	88*	24*	48*	90*	75		14
Morocco	70	46	53	68	14		1365
Mozambique	85*	15*	38*	44*	11*		9
Namibia	65*	30*	40*	45*	35*		0
Nepal	65	30*	40*	40*			22
Netherlands (the)	38	80	14	53	67	904	265
New Zealand	22	79	58	49	33		9
Nigeria	80*	30*	60*	55*	13		133
Norway	31	69	8	50	35	579	66
Pakistan	55	14	50	70	50		235
Panama	95	11	44	86			2
Paraguay	70*	12*	40*	85*	20*		18

Peru	64	16	42	87	25		84
Philippines (the)	94	32	64	44	27		139
Poland	68	60	64	93	38	120	1,341
Portugal	63	27	31	104	28	289	603
Puerto Rico	68*	27*	56*	38*	0		1
Qatar	93*	25*	55*	80*			0
Romania	90	30	42	90	52		905
Russian Federation (the)	93	39	36	95	81	262	2,809
Sao Tome and Principe	75*	37*	24*	70*	32*		11
Saudi Arabia	72*	48*	43*	64*	36		2
Senegal	70*	25*	45*	55*	24*		53
Serbia	86	25	43	92	52		238
Sierra Leone	70*	20*	40*	50*			7
Singapore	74	20	48	8	72		7
Slovakia	104	52	110	51	77	69	209
Slovenia	71	27	19	88	49	742	437
South Africa	49*	65*	63*	49*	34		46
South Korea	60	18	39	85	100		12
Spain	57	51	42	86	48	862	291
Sri Lanka	80*	35*	10*	45*	45*		108
Suriname	85	47	37	92			142
Sweden	31	71	5	29	53	1,391	166
Switzerland	34	68	70	58	74	2,286	29
Syria	80*	35*	52*	60*	30*		173
Taiwan	58	17	45	69	93		2
Tanzania	70*	25*	40*	50*	34		23
Thailand	64	20	34	64	32		70
Trinidad and Tobago	47	16	58	55	13		5
Tunisia	70*	40*	40*	75*			277
Turkey	66	37	45	85	46	67	1,178
U.S.A.	40	91	62	46	26		178
UK	35	89	66	35	51	1,202	499
Ukraine	92*	25*	27*	95*	86	372	778
United Arab Emirates	74*	36*	52*	66*	22*		0
Uruguay	61	36	38	100	26		26
Venezuela	81	12	73	76	16		27
Vietnam	70	20	40	30	57		89
Zambia	60*	35*	40*	50*	30		5

Table 6: Country scores on Hofstede's cultural dimensions. The last two columns show the number of observations from each country.* depicts added values based on estimations on Hofstede's official website <https://www.hofstede-insights.com/fi/product/compare-countries/>. Observations from Andorra, Cyprus, Kyrgyz Rep., Mali, Rwanda, Uganda and Zimbabwe have been omitted from the sample. Hofstede's cultural dimensions are abbreviated as follows: Power Distance (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance (UAI) and Long-term Orientation (LTO).

Appendix 3: Country alterations

At the ESS questions in which was asked for the country of birth for the father and mother, some respondents answered with countries that, nowadays, ceased to exist or complete regions. In order to include these observations in the sample, these answers where altered into the most likely option. Table 7 shows what alterations where made and for how many observations.

	ESS response		Alteration
Countries that ceased to exist	DDR	→	Germany (6)
	USSR	→	Russian Federation (434)
	Czechoslovakia	→	Czech Republic (110)
	Yugoslavia	→	Slovenia (794)
	Serbia Montenegro	→	Serbia (28)
	East Timor	→	Indonesia (2)
Regions	Africa	→	Nigeria (2)
	Central Africa	→	Togo (4)
	Western Africa	→	Senegal (22)
	Southern Africa	→	South Africa (2)
	Eastern Africa	→	Tanzania (34)
	Middle Africa	→	Nigeria (4)
	North Africa	→	Egypt (4)
	Central Asia	→	Kazakhstan (10)
	South-East Asia	→	Thailand (8)
	East Asia	→	China (22)
	South Asia	→	India (54)
	West Asia	→	Turkey (88)
	Australia/New Zealand	→	Australia (2)
	Caribbean	→	Costa Rica (18)
	Southern Europe	→	Italy (46)
	Western Europe	→	Netherlands (44)
	Eastern Europe	→	Romania (64)
	Northern Europe	→	Sweden (122)
	Americas	→	Brazil (6)
	Northern America	→	USA (2)
	Southern America	→	Argentina (26)

Table 7: Country alteration in the dataset.

Appendix 4: Misspecification tests

According to Studenmund (2017), it is crucial to check whether the Classical Assumptions of the Gauss-Markow Theorem hold for the used equation. Violations of the theorem might lead to incorrect inference and hypothesis tests on the dependent variable. In the used dataset, the fifth Classical Assumption, which states that “observations of the error term are drawn from a distribution that has a constant variance” (Studenmund, 2017, p. 306) is likely to be violated. This is the case, since the individual survey answers are probably clustered based on the nationality of the respondent. This means that there are actually less observations in the sample (just as many as there are countries and not as many as there are respondents). Using the individual respondents as observations will imply that there are many more observations and therefore, the regression will show higher t-values, and thus more significant results. To formally test for this violation, referred to as heteroskedasticity, the Breusch-Pagan test (Breusch & Pagan, 1979) was conducted. As expected, this test showed that there is heteroskedasticity in the data. In order to solve this violation, robust standard errors were used in the regression model to correct for clustering at the origin country-level.

Afterwards, the model was checked for serial correlation. Serial correlation, also called autocorrelation, means that the error terms are correlated across time (Studenmund, 2017; Wooldridge, 2012). Since the survey respondents differ across the several ESS-rounds, it is unlikely that the model suffers from this statistical issue. In order to formally test whether the different observations of the error term are uncorrelated, both the Breusch-Godfrey test – often called the Lagrange Multiplier (LM) test – and the Durbin-Watson statistic were used. As expected, both tests indicate that there is no serial correlation in the model.

Appendix 5: Additional descriptive statics

Table 8 shows further details on the descriptive statics of the control variables. Figure 2 displays the distributions of the control variable 'age' and Table 9 shows the bivariate correlation between the cultural dimensions and its equivalents by GLOBE.

<i>Variable</i>	<i>Male (12,722)</i>	<i>Female (11,014)</i>	<i>Total (23.736)</i>	<i>% of total</i>
<u>Education</u>				
<i>Not possible to harmonise into ES-ISCED</i>	1,263	1,436	2,699	11,37%
<i>ES-ISCED I</i>	929	1,241	2,170	9,14%
<i>ES-ISCED II</i>	1,577	1,762	3,339	14,07%
<i>ES-ISCED IIIb</i>	1,904	1,687	3,591	15,13%
<i>ES-ISCED IIIa</i>	1,649	1,971	3,620	15,25%
<i>ES-ISCED IV</i>	1,349	1,625	2,974	12,53%
<i>ES-ISCED V1</i>	891	1,336	2,227	9,38%
<i>ES-ISCED V2</i>	1,452	1,664	3,116	13,13%
<u>Living with partner</u>				
<i>Living with partner</i>	6,545	6,541	13,086	63,60%
<i>Not living with partner</i>	2,985	4,419	7,404	35,98%
<i>Cohabitation situation unknown</i>	48	39	87	0,42%
<u>Main daily activity</u>				
<i>Paid Work</i>	6,605	5,952	12,557	52,90%
<i>Student</i>	638	705	1,343	5,66%
<i>Unemployed, looking for a job</i>	683	603	1,286	5,42%
<i>Unemployed, not looking for a job</i>	225	255	480	2,02%
<i>Permanently sick or disabled</i>	377	381	758	3,19%
<i>Retired</i>	2,209	2,751	4,960	20,90%
<i>Community/military service</i>	22	11	33	0,14%
<i>Housework</i>	132	1,929	2,061	8,68%
<i>Other activities</i>	123	135	258	1,09%
<u>Income</u>				
<i>J – 1st decile</i>	803	1,394	2,197	9,26%
<i>R – 2nd decile</i>	1,128	1,720	2,848	12,00%
<i>C – 3rd decile</i>	1,287	1,564	2,851	12,01%
<i>M – 4th decile</i>	1,465	1,520	2,985	12,58%
<i>F – 5th decile</i>	1,330	1,457	2,787	11,74%
<i>S – 6th decile</i>	1,222	1,301	2,523	10,63%
<i>K – 7th decile</i>	1,104	1,108	2,212	9,32%
<i>P – 8th decile</i>	933	946	1,879	7,92%
<i>D – 9th decile</i>	902	937	1,839	7,75%
<i>H – 10th decile</i>	840	775	1,615	6,80%

Table 8: Distribution of the indicator-variables

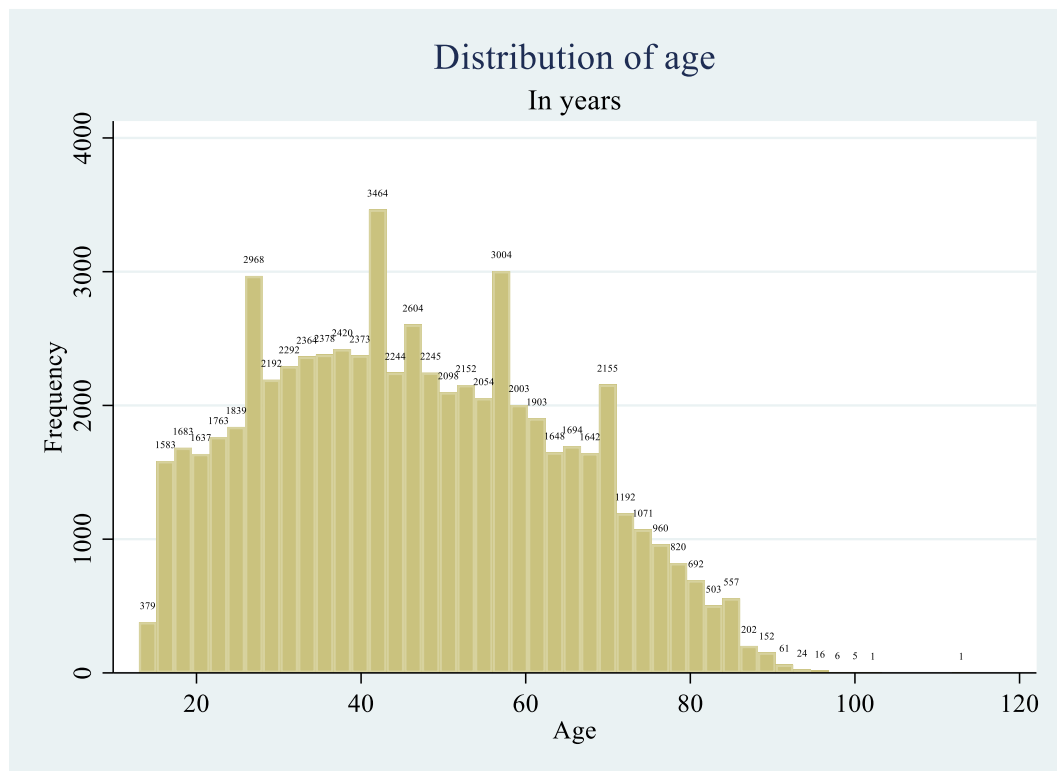
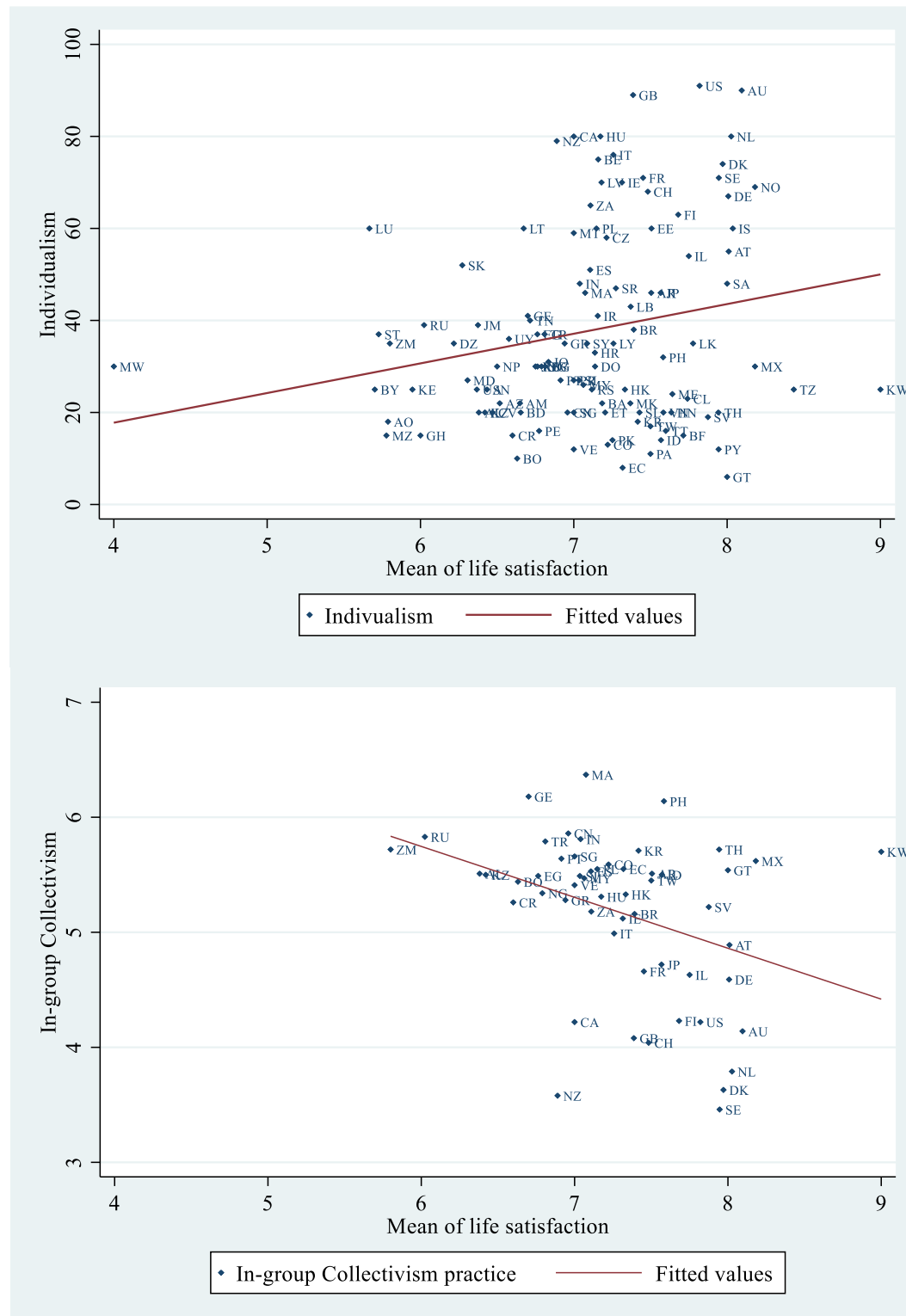


Figure 2: Distribution of age

Cultural Dimension		r
Hofstede	GLOBE	
Power Distance	Power Distance	0.231
Individualism	In-Group Collectivism	-0.692
Masculinity	Gender Egalitarianism	-0.119
Uncertainty Avoidance	Uncertainty Avoidance	-0.639
Long-term Orientation	Future Orientation	0.190

Table 9: The bivariate correlation between the Hofstede and GLOBE cultural dimensions measured with Pearson's correlation.

Figure 3: the opposite correlation with SWB between Individualism and In-Group collectivism.



Appendix 6: GLOBE's cultural dimensions

On the next page, the response bias corrected scores for societal cultural scales for all the cultural dimensions as developed by GLOBE are depicted in Table 10 and Table 11. The practice scales, as depicted in Table 10 are used in the robustness checks.

Regression Predicted Scores for Societal Cultural Practices Scales									
Country	Assertiveness	Institutional Collectivism	In-Group Collectivism	Future Orientation	Gender Egalitarianism	Humane Orientation	Performance Orientation	Power Distance	Uncertainty Avoidance
<i>Albania</i>	4,57	4,28	5,51	3,69	3,48	4,4	4,57	4,44	4,45
<i>Argentina</i>	4,18	3,66	5,51	3,1	3,44	3,9	3,63	5,56	3,63
<i>Australia</i>	4,29	4,31	4,14	4,09	3,41	4,3	4,37	4,81	4,4
<i>Austria</i>	4,59	4,34	4,89	4,47	3,18	3,8	4,47	5	5,1
<i>Bolivia</i>	3,78	3,96	5,44	3,55	3,45	4	3,57	4,46	3,32
<i>Brazil</i>	4,25	3,94	5,16	3,9	3,44	3,8	4,11	5,24	3,74
<i>Canada (English speaking)</i>	4,09	4,36	4,22	4,4	3,66	4,51	4,46	4,85	4,54
<i>China</i>	3,77	4,67	5,86	3,68	3,03	4,3	4,37	5,02	4,81
<i>Taiwan</i>	3,7	4,3	5,45	3,65	2,92	3,8	4,27	5	4,04
<i>Colombia</i>	4,16	3,84	5,59	3,35	3,64	3,7	3,93	5,37	3,62
<i>Costa Rica</i>	3,83	3,95	5,26	3,64	3,56	4,4	4,1	4,7	3,84
<i>Denmark</i>	4,04	4,93	3,63	4,59	4,02	4,7	4,4	4,14	5,32
<i>Ecuador</i>	3,98	3,82	5,55	3,66	3,09	4,5	4,06	5,29	3,63
<i>El Salvador</i>	4,49	3,74	5,22	3,73	3,23	3,7	3,72	5,56	3,69
<i>Finland</i>	4,05	4,77	4,23	4,39	3,55	4,2	4,02	5,08	5,11
<i>France</i>	4,44	4,2	4,66	3,74	3,81	3,6	4,43	5,68	4,66
<i>Georgia</i>	4,15	4,03	6,18	3,45	3,52	4,2	3,85	5,15	3,54
<i>Germany (former East)</i>	4,77	3,67	4,59	4,04	3,17	3,5	4,16	5,7	5,19
<i>Germany (former West)</i>	4,66	3,97	4,16	4,41	3,25	3,3	4,42	5,48	5,35
<i>Greece</i>	4,55	3,41	5,28	3,53	3,53	3,4	3,34	5,35	3,52
<i>Guatemala</i>	3,96	3,78	5,54	3,35	3,14	3,9	3,85	5,47	3,44
<i>Hong Kong</i>	4,53	4,03	5,33	3,88	3,26	3,7	4,69	4,94	4,17
<i>Hungary</i>	4,71	3,63	5,31	3,31	4,02	3,4	3,5	5,57	3,26
<i>India</i>	3,7	4,25	5,81	4,04	2,89	4,5	4,11	5,29	4,02
<i>Indonesia</i>	3,7	4,27	5,5	3,61	3,04	4,5	4,14	4,93	3,92
<i>Ireland</i>	3,93	4,57	5,12	3,93	3,19	5	4,3	5,13	4,25

Israel	4,19	4,4	4,63	3,82	3,21	4,1	4,03	4,71	3,97
Italy	4,12	3,75	4,99	3,34	3,3	3,7	3,66	5,45	3,85
Japan	3,69	5,23	4,72	4,29	3,17	4,3	4,22	5,23	4,07
Kazakhstan	4,51	4,38	5,5	3,72	3,87	4,4	3,72	5,4	3,76
South Korea	4,36	5,2	5,71	3,9	2,45	3,7	4,53	5,69	3,52
Kuwait	3,56	4,32	5,7	3,18	2,59	4,4	3,79	4,97	4,02
Malaysia	3,77	4,45	5,47	4,39	3,31	4,8	4,16	5,09	4,59
Mexico	4,31	3,95	5,62	3,75	3,5	3,8	3,97	5,07	4,06
Morocco	4,72	4,18	6,37	3,5	3,08	4,5	4,31	6,14	3,95
Namibia	3,81	4,02	4,39	3,32	3,69	3,8	3,52	5,29	4,09
Netherlands (the)	4,46	4,62	3,79	4,72	3,62	4	4,46	4,32	4,81
New Zealand	3,47	4,96	3,58	3,46	3,18	4,4	4,86	5,12	4,86
Nigeria	4,53	4	5,34	3,95	3,04	4	3,79	5,32	4,14
Philippines (the)	3,85	4,37	6,14	3,92	3,42	4,9	4,21	5,15	3,69
Poland	4,11	4,51	5,55	3,23	3,94	3,7	3,96	5,09	3,71
Portugal	3,75	4,02	5,64	3,77	3,69	4	3,65	5,5	3,96
Qatar	4,39	4,78	5,07	4,08	3,86	4,8	3,76	5,05	4,26
Russian Federation (the)	3,86	4,57	5,83	3,06	4,07	4	3,53	5,61	3,09
Singapore	4,06	4,77	5,66	4,88	3,52	3,3	4,81	4,92	5,16
Slovenia	4,01	4,09	5,49	3,56	3,84	3,8	3,62	5,32	3,76
Zimbabwe	4,04	4,08	5,53	3,76	3,09	4,4	4,2	5,54	4,12
South Africa	4,43	4,47	5,18	4,66	3,78	4,46	4,72	4,31	4,64
Spain	4,39	3,87	5,53	3,52	3,06	3,3	4	5,53	3,95
Sweden	3,41	5,26	3,46	4,37	3,72	4,1	3,67	4,94	5,36
Switzerland	4,58	4,2	4,04	4,8	3,12	3,7	5,04	5,05	5,42
Thailand	3,58	3,88	5,72	3,27	3,26	4,9	3,84	5,62	3,79
Turkey	4,42	4,02	5,79	3,74	3,02	3,9	3,82	5,43	3,67
Egypt	3,91	4,36	5,49	3,8	2,9	4,6	4,15	4,76	3,97
United Kingdom	4,23	4,31	4,08	4,31	3,67	3,7	4,16	5,26	4,7
United States of America (the)	4,5	4,21	4,22	4,13	3,36	4,2	4,45	4,92	4,15

Venezuela	4,25	3,96	5,41	3,43	3,6	4,2	3,41	5,22	3,55
Zambia	4	4,41	5,72	3,55	2,88	5,1	4,01	5,23	3,92
Table 10: Response Biased Corrected Scores for Societal Cultural Practises Scales (Based on Table B.2 from House et al. (2004, p. 742)									

Regression Predicted Scores for Societal Cultural Values Scales									
Country	Assertiveness	Institutional Collectivism	In-Group Collectivism	Future Orientation	Gender Egalitarianism	Humane Orientation	Performance Orientation	Power Distance	Uncertainty Avoidance
<i>Albania</i>	4,39	4,3	4,98	5,17	4,04	5,16	5,47	3,47	5,17
<i>Argentina</i>	3,18	5,3	6,07	5,73	4,89	5,5	6,28	2,3	4,62
<i>Australia</i>	3,83	4,5	5,82	5,21	5,02	5,6	5,99	2,77	3,99
<i>Austria</i>	2,85	4,8	5,32	5,15	4,83	5,68	6,12	2,52	3,65
<i>Bolivia</i>	3,68	5	5,91	5,56	4,65	5,11	5,98	3,31	4,64
<i>Brazil</i>	3,06	5,6	5,17	5,6	4,91	5,52	5,98	2,59	5
<i>Canada</i>	4,15	4,2	5,94	5,35	5,04	5,58	6,13	2,73	3,73
<i>China</i>	5,52	4,5	5,12	4,7	3,73	5,34	5,72	3,01	5,34
<i>Taiwan</i>	2,91	5	5,3	4,94	3,88	5,15	5,58	2,77	5,14
<i>Colombia</i>	3,45	5,3	5,99	5,52	4,85	5,43	6,15	2,21	4,92
<i>Costa Rica</i>	4,04	5,1	5,94	5,1	4,59	5,08	5,78	2,66	4,58
<i>Denmark</i>	3,59	4,4	5,71	4,49	5,2	5,59	5,82	2,96	4,01
<i>Ecuador</i>	3,57	5,2	5,81	5,62	4,42	5,13	5,95	2,36	4,95
<i>El Salvador</i>	3,67	5,6	6,28	5,89	4,66	5,38	6,37	2,76	5,27
<i>Finland</i>	3,91	4,3	5,6	5,24	4,47	5,8	6,23	2,46	4,04
<i>France</i>	3,57	5,3	5,88	5,35	4,71	5,91	6,1	2,96	4,65
<i>Georgia</i>	4,29	3,8	5,58	5,45	3,83	5,48	5,63	2,86	5,23
<i>Germany</i>	3,24	4,9	5,38	5,36	4,97	5,56	6,24	2,74	4,02
<i>Germany</i>	3,21	5,1	5,46	5,06	5,06	5,63	6,27	2,66	3,38
<i>Greece</i>	3,05	5,4	5,47	5,17	4,84	5,28	5,79	2,57	5,16
<i>Guatemala</i>	3,65	5,2	5,95	5,78	4,49	5,24	5,96	2,49	4,85
<i>Hong Kong</i>	4,8	4,3	5,11	5,52	4,27	5,38	5,71	3	4,52
<i>Hungary</i>	3,42	4,6	5,58	5,74	4,65	5,48	5,97	2,59	4,74
<i>India</i>	4,65	4,6	5,22	5,43	4,4	5,2	5,87	2,58	4,58
<i>Indonesia</i>	4,5	5	5,46	5,48	3,71	5,06	5,54	2,38	5,04
<i>Ireland</i>	4	4,5	5,72	5,18	5,07	5,45	5,99	2,66	3,94

Israel	3,74	4,3	5,69	5,17	4,66	5,51	5,71	2,72	4,34
Italy	3,87	5,2	5,76	6,01	4,88	5,57	6,11	2,51	4,52
Japan	5,84	4	5,44	5,42	4,41	5,53	5,37	2,76	4,4
Kazakhstan	3,88	4,2	5,62	5,22	4,85	5,66	5,57	3,19	4,52
South Korea	3,69	3,8	5,5	5,83	4,23	5,61	5,41	2,39	4,74
Kuwait	3,61	5	5,32	5,62	3,5	5,06	5,89	3,02	4,65
Malaysia	4,73	4,8	5,77	5,84	3,72	5,43	5,96	2,75	4,81
Mexico	3,67	4,8	5,78	5,74	4,57	5,1	6	2,75	5,18
Morocco	3,68	5,3	6,03	6,33	4,07	5,73	6,12	3,3	5,77
Namibia	3,76	4,3	6,13	6,3	4,2	5,47	6,52	2,59	5,19
Netherlands (the)	3,13	4,8	5,39	5,24	5,1	5,41	5,71	2,61	3,34
New Zealand	3,52	4,3	6,54	5,9	4,32	4,85	6,24	3,56	4,17
Nigeria	3,14	4,9	5,31	5,8	4,16	5,71	5,99	2,66	5,45
Philippines (the)	4,93	4,5	5,86	5,66	4,36	5,19	6	2,54	4,92
Poland	3,95	4,2	5,69	5,17	4,53	5,32	6,06	3,19	4,75
Portugal	3,61	5,4	5,97	5,5	5,12	5,4	6,41	2,45	4,5
Qatar	3,72	5,1	5,55	5,92	3,49	5,31	5,94	3,18	4,82
Russian Federation (the)	2,9	4	5,9	5,6	4,34	5,62	5,68	2,73	5,26
Singapore	4,28	4,4	5,46	5,46	4,43	5,66	5,7	2,84	4,08
Slovenia	4,61	4,4	5,71	5,43	4,78	5,31	6,41	2,5	5,03
Zimbabwe	4,6	4,8	5,74	6,01	4,4	5,2	6,33	2,65	4,68
South Africa	3,97	4,46	5,14	5,25	4,43	5,23	5,09	3,8	4,92
Spain	4,01	5,3	5,82	5,66	4,82	5,63	5,85	2,23	4,8
Sweden	3,49	3,9	6,25	4,96	5,19	5,72	6,01	2,49	3,45
Switzerland	3,31	4,9	5,16	4,93	5,01	5,63	6	2,54	3,2
Thailand	3,43	5,1	5,73	6,26	4,12	5,05	5,76	2,74	5,71
Turkey	2,68	5,2	5,63	5,71	4,46	5,4	5,34	2,52	4,61
Egypt	3,22	4,7	5,39	5,6	3,34	5,13	5,71	3,2	5,24
United Kingdom	3,76	4,4	5,66	5,15	5,2	5,52	6,03	2,82	4,17
United States of America (the)	4,36	4,2	5,79	5,34	5,03	5,51	6,14	2,88	3,99

Venezuela	3,34	5,3	5,92	5,61	4,7	5,24	6,11	2,43	5,19
Zambia	4,24	4,5	5,64	5,76	4,27	5,37	6,08	2,37	4,45
Table 11: Response Biased Corrected Scores for Societal Cultural Values Scales (Based on Table B.2 from House et al. (2004, p. 742)									