Hámori Ádám

# Well-being and Christianity

## Relationship between Contemporary European Religiosity and Subjective Well-Being

Department of Sociology and Social Policy

Supervisor: Gergely Rosta PhD

Corvinus University of Budapest

Doctoral School of Sociology and Communication Science

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Doctoral dissertation

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# Acknowledgements

My interest in religion dates back in 1999 when I completed *El Camino*; eventually I was baptised in the Reformed Church in Hungary five years later. Since then, I have not only attended a major congregation in Budapest but also worked for the office of the General Synod and the university maintained by the Reformed Church in Hungary for many years as well. This provided a special insight on how several levels of a contemporary church work in the present-day society, and many invaluable acquaintances, too. To name but a few, pastors like Tamás Ablonczy, Péter Boros, Gábor Lányi, Balázs Ódor, Tibor Rácz, Ibolya Sánta, Balázs Siba, Zoltán Tarr and, not the least, bishop István Bogárdi Szabó formed my views on the church and religiosity in many regards. During these years, colleagues in the International Confirmation Research lead by Friedrich Schweitzer, and those in the Conference of European Churches, primarily Rüdiger Noll, director of the Church and Society Commission, provided me irreplaceable opportunities to gain professional experience in an international setting. During my undergraduate studies at the Pázmány Péter Catholic University, lectures by Gergely Rosta and Ferenc Gereben, and especially those in the sociology of religion by Miklós Tomka, inspired me greatly to turn to this research area. My tutor Gergely Rosta has proved to be not only a highly prepared scholar but also a great fellow to work with. Several instructors of mine at the Doctoral School of Sociology of the Corvinus University of Budapest, including but not limited to Tamás Bartus, Rita Hegedűs, Gábor Király, György Lengyel, Károly Takács, as well as many fellow PhD students, provided me inspiring reflections and suggestions. I have been enriched with exciting ideas by the friendly and professional conversations with Anna Luxné Prehoda, Bálint Duráczky, Ádám Máté Harkányi and Márton Tamás Csanády during our collaborations. In addition, I appreciate Ágnes Bálint helping me with the standardising of reference formatting. Most importantly, I express my gratitude to my family and especially my wife, Eszter, for their patience, motivation, providing support in the background and showing patience during the most cumbersome times of finalizing this research.

# 1. INTRODUCTION

For more than a thousand years, traditional churches in Europe have been active in several fields of society through managing educational institutions, providing local community spaces, organizing spiritual and cultural life of local communities, contributing to economy, as well as actively participating in the public life on the local, national, European and global level. Thus, churches evidently, though with wavering efficiency, have taken part in the shaping society, also by transferring their particular – faith-related – values (Tomka, 1999). The scope of this intent has not been limited to the preservation of traditional cultural values nor to emphasizing moral and ethical aspects of concurrent problems, but also aimed at having an impact on ongoing changes in the secular world. At the same time, churches have been also pressed to a continuous adaptation to the surrounding social environment (Tomka, 1997).

However, contemporary churches in Europe apparently have not been able to fulfil this role, or if so, only to a limited extent. This is partly because the public expectations towards the churches have changed; that is, in many countries fewer and fewer people turn to the churches for guidance – most probably because of the putative process of secularization. Although some recent empirical trends appear to be contradictory in a cross-country comparison, it is widely held that at least in most of the European countries, the constituency of traditional Christian churches is declining steadily (if not quickly). Secularization thesis and theories derived from that, moreover, assert that religious decline is closely related to modernization and, as a part of that, social development measured by well-being, although one cannot say that there is a full agreement on this relationship (Turner, 2011).

My research aims at empirically scrutinizing the relationship between religiosity and subjective well-being. The diminishing societal role of churches is assumable to be mirrored on the individual level as well. That is, how both the share of religiously committed people in European societies is dropping and the influence of religion is lessening on present-day cultures can be paralleled with the process of how the actual impact of religion on people's everyday life as well as their devoutness is fading. What is the role of religion in people's living a more fulfilling life? Does religiosity make people happier? Is there a special contribution of affiliation with a religious

community to human flourishing? Can praying actually protect from either the unpleasant emotional or the deleterious material consequences of adverse life events? Can the hope of a happy afterlife counterbalance the detrimental experiences of disadvantageous social conditions or their suffer from discrimination? In short, are the promises of religions as conveyed by religious actors still have anything to say to postmodern humanity?

This research aims at a deeper understanding of the assumed causal relationship between religiosity and subjective well-being in contemporary Europe. The research is intended to answer the following general research questions:

**Q1: What kind of relationship exists between personal religiosity and individual happiness?**

**Q2: What kind of relationship exists between societal level religiosity and individual happiness?**

Earlier research suggested a positive link between religiosity and happiness even when controlled for socio-demographic background. It has been empirically evidenced in different contexts, and has been explained by diverse mechanisms from both a theoretical and an empirical point of view: by economical utility, meaning-giving or compensation functions of religion, the significance of group membership and participation in social networks, quiescence found in prayer, personality traits, and so on. The research problem is whether religious and non-religious people in contemporary European countries with diverse religious cultures differ regarding their subjective well-being.

While the relationship between religious commitment and diverse elements of subjective well-being (health, perceived social status, life satisfaction, positive emotions etc.) is an emergent research field, the causality of this relationship and mechanisms that can explain it also need further scrutiny. Large-scale cross-national longitudinal surveys including data on religiosity and well-being provide important data for gaining explanations that are more reliable. Therefore, I build this research on the multivariate statistical secondary analysis of a cross-national quantitative database offering a variety of information on religiosity and well-being.

Consecutive waves of the European Social Survey (ESS) that has been conducted in several European countries since 2002 included comparable indicators of subjective

well-being, social exclusion, religion, social participation and personal values. To answer the outlined research questions, multilevel regression method is applied including indicators of religious identity, religious behaviour, social status and social involvement.

In order to provide an overview of the research, Section 2 below reviews the theoretical background of the research. Its first subsection briefly summarizes the most recent proceedings of the research into well-being and happiness. The next subsection concentrates on the existing and debating social scientific theoretical approaches towards contemporary religious change as well as the suggested influence of religion on the individual behaviour, and their significance from the point of view of the current research problem. Subsection 2.3 reviews a more comprehensive set of theoretical and empirical findings about the assumed, yet sometimes challenged, religiosity-well-being association, and tries to point to a few gaps to be filled. Sections 3 and 4 outline the key research questions and hypotheses and the methodological considerations, respectively. Results of the model building and relevant findings are explicated in Section 5, while Section 6 discusses them.

The highly raised scientific interest in happiness and well-being studies, especially since the turn of the millennium, indicates the growing need within democratic societies to understand what kind of social factors influence happiness, well-being and life-satisfaction. This research is intended to contribute to this debate. By reaching the above presented research goal, it should become clearer if it is worth to promote religiosity by policy measures like, e.g., through state subsidizing or regulating religious education regarding their effect on societal well-being. Furthermore, some underlying factors of contemporary religious change should be revealed helping to target churches' public activities more appropriately.

Through the literature review above, I aimed at embedding the research problem in the wider field of social research as suggested by Hak and Jansma (2013). They argued that sociologists of religion should “subsume their research questions under the main questions, maybe the one and only main question”, i.e. that of social cohesion subsuming both inequality and rationalization as argued by Ganzeboom (2012, cited by Hak and Jansma, 2013, p. 9). Scrutinizing the mutual and complex relationship between religion and well-being, I hope to find a piece of answer.

# 2. CONCEPTUAL FRAMEWORK

Below, a review of the most relevant conceptual approaches and research results within the study of subjective well-being is provided. Without striving to completeness, my aim is to illustrate the variety of social scientific approaches to the issue and the present the conceptual uncertainties that may undermine the validity of any empirical endeavours. By this, I hope to identify some common points in the literature, which can help in locating my methodological choices within the current literature.

Subsequent to these, I give a brief overview on the most important theoretical explanations and some previous empirical findings on religious change. Religious decline in Western societies is a scientific commonplace, even if a much contested one. Understanding the trends effecting the role religiosity plays in society brings the issue of the religiosity-well-being link closer.

Finally, an outline of some explanations on the relationship between religiosity and well-being will be explicated. Besides sketching the ongoing debate on this issue, which corroborate the scientific significance of my research, possible mediating or influencing factors, are to be introduced here which will be also of interest of my future analyses.

## *2.1. Well-Being*

Literature of research into happiness and well-being is vast, representing the huge scientific and societal interest in the subject that raised around the turn of the millennium. Among others, Hegedűs (2001a) has reviewed the role of well-being indicators in monitoring social development and the European integration and the importance of the subjective indicators within that, as well as the most significant scientific advances related to it. The relevance of the field is illustrated by the following approaches as well.

Well-being in general has favourable consequences on both the societal and the individual level. (Diener and Seligman, 2004) Notably, noneconomic factors in the society or in a workplace influence productivity and job satisfaction. While policy interventions focused primarily on economic development so far, it should be

underlined that people with higher well-being have higher-quality relationships and higher salaried jobs.

Well-being can be also conceptualized as a set of desirable positive outcomes on the individual as well as the societal level, e.g. creativity, productivity, and avoiding psychological dysfunction. However, it seems that an excessive level of happiness may have negative consequences. (Diener, Kesebir and Tov, 2009)

The theoretical and research literature reviewed by Helliwell and Barrington-Leigh (2010) show how new measures of well-being fundamentally transform thinking in economics and social policy. At the same time, Bartram (2011) warns against easy conclusions about policy implications in relation with correlates of happiness and how they can contribute to the well-being on the societal level because, according to studies, outward circumstances influence happiness to a lesser extent.

Parallel with the gaining popularity of positive psychology as well as a growing global awareness of policy-makers about the limitations of a financial-materialist approach of well-being, a significant advancement has been observed towards the conceptual and methodological clarification of the issue. Without completeness, I overview some main advances of the recent research into this area below.

### 2.1.1. The concept of well-being

According to scholars, individual well-being is a complex and multi-faceted concept. Diener, Scollon and Lucas (2003) state that "subjective well-being can be defined simply as the way that people evaluate their lives, this simple definition belies the complex and multi-faceted nature of the construct. SWB is not a unitary dimension, and there is no single index that can capture what it means to be happy." (Diener, Scollon and Lucas, 2003, p. 213) As Ryff and Keyes (1995) emphasized, it should be differentiated from psychological well-being consisting of the dimensions of *Autonomy*, *Environmental Mastery*, *Personal Growth*, *Positive Relations With Others*, *Purpose in Life*, and *Self-Acceptance*. As such, subjective well-being is proposed to consist of *positive affect*, *negative affect*, and *life satisfaction* – a definition the methodological implications to which I will return below.

Ryan and Deci (2001) also identified two main strands of research: they understood subjective well-being as the hedonic, whereas psychological functioning and human accomplishment as the eudaimonic the aspect. Differentiation of various aspects or

dimensions is quite typical in the theoretical and empirical literature. Among others, Schimmack, Schupp and Wagner (2008) suggested a cognitive and an evaluative aspect of well-being. Fisher (2009) also construed an understanding of subjective well-being as having affective and cognitive components, the first of which is about emotions and feelings, and the second of which is more an ex-post, reflective assessment of life qualities and satisfaction.

In their review article, Myers and Diener (1995) describe subjective well-being as the combination of frequent positive affect, infrequent negative affect and global satisfaction of life. Summing up earlier literature, they suggest that socio-demographic background is apparently irrelevant for well-being, while relevant correlates for well-being are personality traits (especially self-esteem, self-control, optimism, and extraversion), rewarding social relationships, high level of satisfaction with job, as well as cultural and religious characteristics that provide meaningful goals in life. In an experimental re-analysis, Coles, Sims and Chin (2015) have confirmed their approach.

Multi-dimensionality of the concept has been evidenced by Schimmack, Schupp and Wagner (2008), who concluded that contextual factors like unemployment and region influenced cognitive well-being, whereas personality traits influenced affective well-being more. Multi-dimensionality was also present regarding the levels of well-being: beyond the overall subjective well-being, various domain-specific situations of life were also able to result or terminate, increase or decrease the positive evaluation conceptualized as well-being. However, as Schimmack (2006) found, robust structural relationships exist between components of well-being. Namely, changes in domain satisfaction can lead to change in life satisfaction (bottom-up effect), even though that less consequent evidence was found for the opposite direction (top-down effect). He added that personality traits (neuroticism, extraversion) influenced affective components of well-being stronger, whereas domain satisfaction affected life satisfaction higher. Link between personality traits and cognitive well-being was moderated by affective components of well-being on which people may often rely in momentary evaluative processes of cognitive well-being.

In common thought, well-being and happiness are interchangeable notions. As I will show below through some findings, the differentiation between well-being and happiness is, if necessary at all, more a theoretical than a methodological issue. Costanza et al (2007) supported this approach as long as they proposed an integrative

approach with a research agenda: they suggested that subjective well-being should be understood as a synonym of happiness together with human needs integrated into an extended concept of quality of life. Coles, Sims and Chin (2015) have observed that lay perceptions on happiness were highly in line with scientific theory of well-being. Henderson and Knight (2012) also argued that hedonic well-being (i.e. experiences of pleasure and enjoyment, and associated with experiences of satisfaction, positive affect and happiness) and eudaimonic well-being (i.e. feelings of authenticity, engagement, and interest and associated with experiences of meaning and purpose in life and personal growth) should not be contrasted in the way researchers often tend to do. As they suggest, the integration of the two is often regarded as "flourishing", which, however, has certain methodological limitations (e.g. social desirability bias and recall error).

### 2.1.2. Measuring well-being

Though in psychology and in social research it is a rather new (inter)disciplinary field, measuring well-being has long historical roots. (Angner, 2011) Until recently, methodological more than theoretical development could have been observed; while, interestingly, the opposite is true for the research into the quality of life, in research practice, both have converged and shared conceptual commonalities with happiness. (Camfield and Skevington, 2008)

Satisfaction with life is a measure often applied in the field, the scale with which to measure this dimension has been validated more than two decades ago. Pavot and Diener (1993) stated that the scale tapped more into the rational evaluation of life domains deemed important by the respondent as contrasted to measurements of pleasant emotions, which they suggested to measure separately. Given the fact that the scale showed high temporal stability but proved sensitive to clinical interventions, the authors concluded that life events could be also highly influential on the judgements of the respondents. Others, analysing data from the German Socio-Economic Panel Study, also found that general satisfaction appeared to be an aggregate of satisfaction with different life domains like finance, health, job satisfaction, leisure, housing and environment (van Praag, Frijters and Ferrer-i-Carbonell, 2003).

Some scholars emphasize either conceptual or methodological concerns about measurement of well-being. Forgeard et al (2011), for example, also underlined the

multifaceted and dynamic nature of subjective well-being. Consequently, depending on underlying policy considerations, multiple measures are needed to grab its relevant aspects. Regarding the happiness question, as they suggest, "While directly asking individuals about their happiness certainly has face validity, it remains unclear what information respondents use to determine whether or not they are happy. Happiness is therefore an unwieldy construct for scientific research…" (Forgeard et al, 2011, p. 82). Furthermore, as to satisfaction with life, "respondents may often use how good they feel at the moment they are asked as the basis for the judgment they are making. Measures of life satisfaction may therefore be contaminated by mood… this construct has too often been equated to overall wellbeing, leading researchers to ignore other facets". (Forgeard et al, 2011, p. 86).

Multi-dimensionality, measurement uncertainty because of its conditionality to life circumstances and reliability of self-report scales are central issues of well-being research. In practice, typically, well-being is measured by either a "happiness-question" or a "life-satisfaction-question" or both, which are subject to temporal changes in affective status according to Fischer (2009, pp. 20ff.) who, consequently, expresses her concerns about their reliability. Kahneman et al (2010) also differentiate a momentary-affective (happiness) and a judgemental-evaluative (satisfaction) dimension of well-being, the latter of which, as they conclude, is more affected by objective circumstances like income or marital status. Diener, Inglehart, and Tay (2012) also agree that measures of satisfaction with life are more sensitive to ephemeral circumstances and current mood. (Nevertheless, it must be pointed out here that the question about happiness apparently also inquires about positive affect and current mood, and thus, can be deemed a more valid indicator for the current paper as I will argue for it later.)

Others, however, do not share these concerns about measurement incapability out of multi-dimensionality and contextuality. Kahneman and Krueger (2006), for example, emphasized the obvious advantages of widespread measures of happiness and life satisfaction, that is, being easy to respond and displaying a very low rate of refusal. While they admit the potential problem of contextual fluctuation, they add that these indicators correlate well with other relevant measures of emotional or physical state and thus, these can be deemed valid. Citing earlier empirical findings, they argue for adaptation in most life domains, including marriage, that is, their positive effect is apparently temporal. Krueger and Schkade (2008), furthermore, concluded from a

test-retest study involving 229 working women that net affect and life satisfaction measures proved to be highly reliable. For affective experiences that are more person-specific, they observed that their correlation coefficients were approximately 0.5–0.7 higher than those with general evaluation of well-being that are more situation-specific.

Subjective well-being can be understood as a sequence of four stages that unfold over time, from instigating events and circumstances to global evaluations of life, as Kim-Prieto et al (2005) suggest. To their explanation, one's life circumstances and events (1) elicit affective reactions to those events (2), and memories of one's reactions (3) will form later global evaluative judgment about one's life (4). They assert that measurement of any single stage provides an incomplete picture of subjective well-being. At the same time, the four stages, and the transition processes between them, indicate why people's circumstances are only modestly related to the global judgments they make about their lives. Thus, consequently, it can be argued here that a relative stability and independence of life events is expectable of the last, evaluative stage.

Reviewing earlier scientific advancements in the research into social indicators, Hegedűs (2001a) has concluded that three main types of well-being indicators could be identified: (1) indirect measures of well-being which, however, were not actually asking about an aspect of quality of life or satisfaction, e.g. social status; (2) subjective measures directly assessing certain dimensions of social well-being (e.g. social justice or economic conditions); and (3) those evaluating or emotionally judging the subjective assessments of individual situations or social position. According to Hegedűs, indicators of subjective happiness can be placed under this latter category.

Apart from methodological and measurement problems, it is much more a problem of a conceptual nature if the level of well-being, happiness or life satisfaction can be measured at all by survey methods. That is, whether it is possible to tap into the psychological essence of these notions or personal experiences. However, as I will demonstrate below, the task of the current research is rather to find appropriate means for reliable measurement of differences between the levels of well-being of surveyed individuals. For this aim, the above-described widespread approaches can be considered valid measures or, as Taylor (2015) defines, markers. He proposes the following general definition of markers, or appropriate indicators, of wellbeing for policy-relevant measurement purposes:

"X is a marker of wellbeing if, according to all mainstream theories of wellbeing, either:

1. X is constitutive of wellbeing; or

2. X is something that can be regarded as reliably productive of wellbeing at the individual level; or

3. X is something that can be regarded as a reliable indicator of wellbeing, at the individual level." (Taylor, 2015, p. 77)

Admitting that no indicators can be deemed absolutely accurate, Taylor names a few theoretical approaches all of which can sufficiently be applied to form sufficiently reliable indicators: hedonism (pleasure, happiness); life-satisfactionism, desire/preference-satisfactionism, objective-list theories (i.e. presence of certain prudential goods); and Neo-Aristotelian theories (development of human capacities). From these, happiness is "what is sometimes called 'positive affect' – 'feeling happy', having a positive emotional state or an overall positive balance of pleasure over pain in one's life… Happiness in this sense is constitutive of overall wellbeing for hedonism". (Taylor, 2015, pp. 81-82) He adds, "Life-satisfaction is often measured, in tandem with happiness, as the cognitive or judgemental component of subjective wellbeing, along with happiness as the affective component." (Taylor, 2015, p. 84)

Finally, the issue of cultural contextuality regarding well-being should be raised. Mathews (2012), for example, points at the different cultural understandings of what happiness and well-being is, though this is not to say that the measurement is invalid. He proposes that ethnographic interviews should supplement statistical methods that based on self-reported measures of subjective well-being in cross-cultural comparative research. However, my current research focuses on European countries that can be deemed culturally relatively homogeneous, and in this regard, different mean happiness level of countries and various social and religious groups is less spurious than certain groups of respondents reporting the same well-being level.

### 2.1.3. Correlates of well-being

What influences subjective well-being? Are there sociologically relevant and observable factors that contribute to the level of well-being on a shorter or longer run? There is a wide range of evidence for such influential and measurable factors, even though the extent and significance of these influences is contested. As for example

Diener et al (1999), reviewing a comprehensive set of previous research literature, concluded, instead of socio-demographic and economic circumstances, recent research has turned more to individual characteristics and behaviour.

Some scholars emphasize the relative stability of the level of subjective well-being. Diener et al (2015), for example, assert that because of an evolutionary adaptation, people are generally happy in the lack of life events or circumstances affecting their mood. Lyubomirsky, Sheldon and Schkade (2005) propose a theoretical framework of sustainable happiness on what determines one's chronic, or characteristic, level of happiness. They argue that for an extent of 50%, the level of happiness is genetically determined, forming a set-point level. Outward circumstances relevant to happiness are responsible in an extent of 10%, whereas intentional activities cause 40% of the difference. It is noteworthy for the current research that such latter elements can be hardly detected in large-scale surveys. Still, the theory suggests that unintentional life events may play a subordinated role as compared to activities. Oishi, Diener and Lucas (2007) also observed through data from the World Values Survey that while most people were moderately happy, i.e. above a neutral level of happiness, highest happiness was associated with success in social relations and volunteering. At the same time, only a weaker relationship was present with success in income, participation and education.

Some findings, however, point at the relative importance of outward life conditions. Tay and Diener (2011) suggest that fulfilment of basic needs is important for life satisfaction, and social needs and respect needs are important for positive feelings. On the other hand, poor fulfilment of basic needs, respect needs and autonomy is related to the experience of negative feelings across diverse regions of the world. Moreover, while individual factors are related more with psychosocial needs fulfilment, fulfilment of societal level basic needs has effects independent of an individual's personal need fulfilment.

Even though determinants of life satisfaction reported in previous research appeared not to be robust, in a cross-country comparative analysis using data from the World Value Survey combined with aggregate country measures, Bjørnskov, Dreher and Fischer (2008) found that openness, business climate, postcommunism, the number of chambers in parliament, Christian majority, and infant mortality showed significantly impact on life satisfaction of overall population as well as demographical subpopulations. At the same time, national income, welfare state characteristics,

democracy, unemployment rates, and higher education were largely unrelated with subjective well-being. However, Morrison, Tay and Diener (2011) confirmed a possible intermediary role of individual and national income and wealth on well-being. As they concluded,

> "national satisfaction is a strong predictor of life satisfaction … the relationship between national satisfaction and life satisfaction is strongest in the poorest countries of the world, among individuals with the least income, and among individuals with the fewest household conveniences. The moderating role of GDPPC, income, and conveniences reveals that when individuals have greater trouble meeting their basic needs, external factors such as group evaluations come to have a stronger influence on SWB." (Morrison, Tay and Diener, 2011, p. 169)

Let me now turn to some more specialized findings about certain aspects of demographic and socio-economic as well as personal characteristics that were found to be associated with different levels and aspects of well-being.

#### *2.1.3.1 Age, gender*

According to several earlier research, age is related to well-being. Peiró (2006), for example, confirmed by World Values Survey data from 15 countries in 1995-1996 that age, health, marital status and income was related both to happiness and life satisfaction (however, job status was associated only with life satisfaction). Nevertheless, this is not only to say that elderly people are more likely to suffer from illnesses, lower income, being retired or to loneliness. Some components relevant to psychological well-being, for example, as studied by Ryff and Keyes (1995) changed in different directions: Autonomy, Environmental Mastery, as well as Positive Relations With Others grew by age, whereas Personal Growth and Purpose in Live declined by age. Self-Acceptance, however, showed no age difference. Even if psychological well-being should be differentiated from subjective well-being, these findings evidence that well-being might arguably show variability by age.

On the basis of earlier studies, one can expect a U-shape curve in subjective well-being by age. Clark (2007) confirmed on a British panel study with the General Health Questionnaire that this effect was present, even if flatter than expected, and than that of mental well-being. An explanation is a life-cycle effect and a fixed cohort effect.

At the same time, gender can be also important: Positive Relations With Others scored higher for women than for men as Ryff and Keyes (1995) concluded. Furthermore, Ryff, Keyes and Hughes (2003) found that perceived discrimination affected the eudaimonic (psychological) well-being of women only, both in minority and majority context.

Tesch-Römer, Motel-Klingebiel and Tomasik (2008) observed a gender gap in subjective well-being. As they concluded, the higher was gender inequality in labour, the higher was the gender difference in well-being. However, this relationship apparently depended on the cultural context, namely, the societal attitudes toward gender inequality. Where a higher share of population rejected gender inequality in labour, the positive association was attenuated. Where higher inequality was accepted, a higher female participation in the labour market lead to higher gender differences in subjective well-being because working females in this context were less satisfied with their life. Van der Meer (2014) found a corresponding gender difference through 2004 data from the European Social Survey concerning the effect of unemployment on well-being. While it affected both physical well-being and social approval, insofar as men and women had different ways of achieving social approval, effect of unemployment was more severe for men than for women. Men attached a higher importance to having a job, whereas married women could profit from the employment status of their husband. The opposite direction was not present, however.

#### *2.1.3.2 Socioeconomic status*

That income and subjective well-being are positively correlated has been already confirmed by many (see Peiró, 2006). Van Praag, Frijters and Ferrer-i-Carbonell (2003) found financial situation to be one of the main determinants for individual well-being. Lucas and Schimmack (2009) concluded from data from the German Socio-Economic Panel Study and from the World Values Survey that though the correlation was weak yet significant between income level and life satisfaction, the difference in mean well-being between richest and poorest groups was quite considerable. Kahneman and Deaton (2010) evidenced in USA that low income decreased both emotional and cognitive well-being, and exacerbated the negative impact of stressful life events. At the same time, high income contributed to cognitive well-being but it was unrelated to emotional well-being. As presented by van der Meer (2014), unemployment severely affected both physical well-being and social approval, and

especially subjective income reduced subjective well-being. Clark, D'Ambrosio and Ghislandi (2015), analysing data from the German Socio-Economic Panel study, also showed how poverty reduced happiness evidently and for a longer term.

As observed by Diener et al (1993), this relationship has been present also within and between countries but it has not been so straightforward and strong across than within countries. Helliwell et al (2010) also found strong evidences for income and other social context variables explaining both inter- and intra-national differences in well-being. Helliwell and Barrington-Leigh (2010), on the contrary, found that differences across nations were much higher than within nation in subjective well-being as well as those in income. Clark and D'Angelo (2009) presented how upward mobility contrasted to parental status provided higher life satisfaction.

However, as Easterlin coined the well-known paradoxical phaenomenon, although at a given time those with higher income were on average happier, raising income did not increase the happiness of all, because material norms on which judgements about well-being were based also raised. (Easterlin, 1995) The fact that higher income raised subjective well-being only among those with low income was explained by that more money had less benefit on happiness of the more well-off with higher material desires. (Diener and Biswas-Diener, 2002) While evidencing a positive but modest relationship, Biswas-Diener (2007) asserted that it was more apparent in the case of the poorest. He suggested that this was explained by that a higher income was essential for them in satisfying basic physical needs, but provided only diminishing return in more affluent social contexts, even if with an effect still positive.

Furthermore, Easterlin (2005) suggested an adaptation effect and a social comparison effect present more in the money-related domains. That is, individuals failing to anticipate this tend to allocate too much time on paid activities at the expense of health and family. Consequently, raising income can even be detrimental on individual and societal-level happiness. Hagerty and Veenhoven (2003) also observed a partial adaptation (however, they found no evidence for comparison effect across countries). Stevenson and Wolfers (2008), however, offered a partial falsification of the Easterlin Paradox, showing with large datasets that, with the exception of US, rising income and economic development clearly and consistently raised happiness on an individual and societal level as well. They suggested that potential milder forms of adaptations might be consistent with their findings.

Moreover, material aspirations will grow through life cycle with raising income, which curbs down the effect of raising income on happiness. (Easterlin, 2001) Others also argue that it is not only net income but also relative income that has an effect; therefore, previous studies have suffered from an inappropriate aggregation of underlying identification (i.e. reference group as the basis of income comparison; McBride, 2001). That the effect of the amount of income on subjective well-being was as important as that of the (upwards) reference group was also found by Ferrer-i-Carbonell (2005).

While education on the individual level is often introduced as a key correlate of income, it is even less evident if and how educational attainment contributes to subjective well-being. Inglehart and Klingemann (2000), for example, concludes that societal level average education is unrelated to societal level subjective well-being. Reviewing several empirical findings that pose education as an ambivalent factor in happiness, Dolan, Peasgood and White (2008) underlines that while some report the highest level, others rather a middle level of educational attainment being associated with the highest happiness. However, as argued by Michalos (2008), this relationship depends on the definition of the concepts of "education", "well-being" and "influence", and the relationship is apparently not direct and straightforward and only weak if any, provided that all people have the same chances in all domains of life.

Other findings suggest that the income – well-being relationship is far less evident or straightforward. Malka and Chatman (2003), for example, observed that those with high extrinsic work orientations (highly appreciating extrinsic rewards of work success, i.e. salary, benefits etc.) enjoyed a higher subjective well-being and job satisfaction with higher income on the long run. However, well-being and job satisfaction of those with high intrinsic work orientation was negatively affected by higher income. Admitting that increasing wealth does not necessarily lead to higher subjective well-being, Camfield and Skevington (2008) add that inequality is a better predictor than income. Fischer and Torgler (2006), who presented that a higher status contributed to social capital, but not in a symmetrical manner, have also illustrated the complexity of the effect of income: it was associated with a better tax morale, higher generalized trust and trust in parliament, yet also with a lower participation in voluntary activities.

Easterlin (2013) states that economic growth in itself will not raise societal-level happiness, whereas full employment and safety net policies will arguably do so.

Hayward (2014), testing answers from a relatively small number of disabled respondents in a follow-up study, found that income did not predict subjective well-being, whereas meaning in life strongly correlated with subjective well-being in a cross-sectional study. Okulicz-Kozaryn (2012) pointed at a higher relative importance of the economic environment by showing that including the effect of regional income on happiness into the model turned that of national income insignificant. Personal income mattered less in richer regions, and inequality in life satisfaction between people with high or low income was lower in rich provinces than in poor ones.

*2.1.3.3 Life events*

Undoubtedly, both favourable and unfavourable changes over life course constitute important milestones in how the level of subjective well-being develops. However, the strength and the endurance of this influence is not evident and when turning to certain life events, their significance in shaping well-being is debated. Lyubomirsky, Sheldon and Schkade (2005), for example, propose that one's happiness level is determined only to an extent of 10% by happiness-relevant circumstances. That is, they suggest that unintentional life events may play a subordinated role compared to intentional activities.

Analysing the impact of marriage on happiness, Diener et al (2000) found the effect of marital status on subjective well-being to be similar across nations. Lucas et al (2003) showed that the effect of marriage itself was temporal on average, but significant personal differences existed: those who reacted strongly to marriage experienced higher level of well-being even on a longer run. However, as they concluded, the causal direction was not evident: happy people were more likely to get and stay married, suggesting a selection effect. (Lucas et al, 2003, p. 538) On the contrary, Kahneman and Krueger (2006), citing earlier empirical findings, argued for an adaptation in most life domains, including marriage, that is why they assumed its positive effect to be temporal. Parallel to that, Clark et al (2008) proved by data from the German Socioeconomic Panel study that the highest effect on life satisfaction of life events was right after the event. Later, certain signs of accommodation to the new situation and a return to a baseline happiness level were observable. At the same time, they also found that significant lag and lead effect was present. However, Diener, Lucas and Scollon (2006) argued against adaptation theory. They emphasized the multidimensionality of well-being and happiness, and underlined that different set

points of different people might be present who reacted differently to various life events, and the time needed for adaptation might vary.

As to the variability of the impact of different life events, Luhmann and Eid (2009) observed through data from the German Socioeconomic Panel study that the effect of repeated life events depended on the nature of events. While repeated marriage and divorce made no difference (suggesting a possible adaptation in this case), yet repeated unemployment lead to lower life satisfaction (proving a sensitisation effect). They added that personality traits and gender also accounted for individual differences in changes in life satisfaction. Gomez et al (2009) also stressed that negative life events had a higher negative effect and especially for younger and middle-aged adults compared to the old, whereas no effect of positive events for young adults was apparent. Larsen (2009) pointed at a negative bias as well: the effect of negative life events on well-being was stronger, longer lasting and took more time for assumed adaptation than that of positive life events. In their meta-analysis, Luhmann et al (2012) found the effect of life events to be different on affective and cognitive well-being. Namely, effects of life events on cognitive wellbeing were stronger and more consistent.

However, as Schwarz and Strack (1999) pointed out, underlying cognitive and evaluative-judgemental processes conflated the link between life events and life domains and reported subjective well-being. Either assimilation effect (i.e. subjective well-being reported with a positive or negative life event recalled) or contrast effect (i.e. subjective well-being reported in comparison to other people), or the fact that evaluation was relying simply on the current mood of respondent may have thus caused concerns about measurement. Furthermore, while admitting the advantage of widespread measures of happiness and life satisfaction of being easy to respond and eliciting only a very low rate of refusal, Kahneman and Krueger (2006) pointed at the problem of contextual fluctuation. However, they found these measures to correlate well with other relevant measures of emotional or physical state, and thus, these still appear to be valid.

#### *2.1.3.4 Social capital*

Measures of social ties including family, workmates, civil activity, religious and community participation, and trust are all robustly and independently related to happiness both directly and mediated through a better health status, as Helliwell and

Putnam (2004) evidenced. Gallagher and Vella-Brodrick (2008) also proved that social support, emotional intelligence and their interaction significantly predicted positive affect, negative affect and satisfaction with life as well. Helliwell et al (2010) added that composite measures for social context explained as much of inter- and intra-national differences in well-being as income. Layard et al (2014) who found adult happiness to be explained most by emotional health in childhood and child's prosocial behaviour have proved the importance of social network also.

The complexity of this relationship has made evident by some studies. As coined by Putnam (2000, cited by Pugno and Verme, 2012, p. 5) social capital can be differentiated as a bridging or bonding nexus, the former of which referring to relations and trust across communities, the latter of which having them mainly within groups, thus producing negative externalities for those out of the community. Pugno and Verme (2012) examined data from the World Values Survey and found that while economic research evidenced the higher importance of bridging social capital for economic growth, a more balanced individual approach for them was needed for individual happiness. Namely, those individuals who tended to favour either bridging or bonding social capital more were generally tend to be less happy.

However, Dolan, Peasgood and White (2008) mentioned the problem of endogeneity concerning the relationship between social capital and well-being. Scrutinizing data from the Midlife in US survey from 1995-2005 and the British Household Panel study from 2001-2006, Stavrova and Luhmann (2016) concluded that collective connectedness was stronger related to an enhanced sense of meaning in life than intimate and relational connectedness. At the same time, a higher sense of meaning in life resulted in higher connectedness and predicted the membership in voluntary organisations, being married and marital stability.

#### *2.1.3.5 Personal values and personality traits*

While the majority of the empirical evidence cited above stresses the importance of outward (e.g. socio-economic or demographic) conditions, intentional behaviour or unintended life events in experiencing a certain level of subjective well-being, others assert that the level of well-being or happiness is, to a great extent, influenced by personality traits or even genetically inherited. Steel, Schmidt and Shultz (2008) conclude their meta-analysis of past research findings that a much higher relationship between personality traits and subjective well-being may exist than previously

assumed because of the problem of commensurability. Schimmack, Diener and Oishi (2002), studying a total of 340 students in the US, observed evaluative judgements of life satisfaction to be relatively stable over time, as these were based on the same momentarily accessible, but stable and persistently available resources (relevant life events, memories) that depended on personality traits.

Importance of personality as well as its genetic background and independence of cultural context has been suggested by other scholars, too. By examining a representative sample of 973 twin pairs, the findings of Weiss, Bates and Luciano (2008) showed that a common genetic factor resulted in low Neuroticism and high Extraversion, Openness, Agreeableness, and Conscientiousness which in turn accounted for high subjective well-being; thus, personality may form an "affective reserve" relevant to set-point maintenance and changes in set point over time. Schimmack et al (2002) confirmed as well that extraversion affected positively and neuroticism affected negatively hedonic balance independently of cultural context, which in turn influenced life satisfaction. While this link was stronger for individualistic (USA, Germany) and weaker for collectivistic (Japan, Mexico, Ghana) cultures, they suggested that there was a culture-independent impact of personality traits on emotional well-being and a culture-moderated effect of personality on cognitive well-being.

Contrasting their view, however, Headey et al (2010) cast doubt on the assumed determination of subjective well-being by genetic and personality traits. They assert that genes and other stable traits appear to be basic elements providing a relatively smaller, yet significant place for life goals and other priorities. Testing the relationship with 226 undergraduates, Jovanovic (2011) also comes to the conclusion that

> "…personality traits are a weak predictor of the cognitive component of SWB [subjective well-being]. The association between personality and CWB [cognitive well-being] is lost when AWB [affective well-being] is included in the regression equation. This result does not negate the significance of personality as the determinant of satisfaction with life, but it demonstrates that the relationship is not direct, but mediated through affect… personality traits have different predictive power in explaining the CWB and AWB. Personality is strongly associated with AWB, while the relationship with CWB is quite weak. Differences in structure and strength of association with personality

traits suggest that satisfaction with life and affective well-being represent distinctive aspects of SWB." (Jovanovic, 2011, pp. 633-634)

Other scholars also underline the significance of personal values or life goals, which either have a direct impact on well-being or mediate the effect of personality traits or outward circumstances. Sagiv and Schwartz (2000) measured many types of values to be weakly but directly associated with affective but not with cognitive well-being. As they found, different types of values were relevant to subjective well-being, depending on the value environment. Although no positive association was found between subjective well-being and universalism and benevolence values, at the same time, achievement, stimulation, and self-direction values were correlated positively and tradition values were correlated negatively with general mental health and positive affect. Conformity and security were correlated negatively with the affective aspect of subjective well-being; even though their associations with well-being were weak or inconsistent, suggesting that they were neither a cause nor a product of a poor sense of well-being. However, they also stated that "…values did not relate directly to the cognitive index of subjective well-being… One possibility is that this is because the cognitive aspect of well-being studied here refers to satisfaction. … A positive sense of cognitive well-being may therefore depend not on what people value but on their success in attaining whatever they value." (Sagiv and Schwartz, 2000, p. 193)

That personality traits and values can be linked was evidenced by Haslam, Whelan and Bastian (2009) who surveyed 180 undergraduates, and observed a mediating effect of the big five personality traits on the effect of Schwartz's values on subjective well-being. They showed that the effect of personality traits was much stronger on subjective well-being than that of value orientation. Hietalahti, Rantanen and Kokko (2016) also showed that among women, low neuroticism and high extraversion were positively associated with leisure-related goals (hobbies, relationships and sexuality), which in turn were positively related to emotional well-being. At the same time, leisure-related goals were positively linked to emotional, psychological, and social well-being. In men, extraversion was positively linked to performance-related goals (mental performance, family's welfare, work and economic welfare) which was further positively related to psychological well-being. Moreover, performance-related goals positively predicted psychological and social well-being, and leisure-related goals predicted social well-being.

The complexity of the relationship in question was well illustrated by Lyubomirsky, Tkach and DiMatteo (2006) who, while finding that happiness is related to mood, temperamental traits, global life satisfaction, and social affiliation, also presented that self-esteem, a different, yet strongly correlated concept, was related to agency, optimism and lack of hopelessness.

### 2.1.4. Well-being or happiness? Some notes on terminology

As the above chapter illustrates it, it is far not an easy and straightforward task to distinguish the concepts of happiness and well-being clearly. This is true despite the vast range of recent literature attempting to create a definition for each of them or to use an approach more or less established in certain scientific disciplines (especially in the field of psychology). In the practice of empirical social research, however, an apparent confusion is present because of many scholars using the terms actually like synonyms, and also because of the somewhat limited availability of relevant large datasets applying indicators either joining a tradition of scientific terminology or without any deeper terminological considerations (often closer to ordinary everyday notions).

I acknowledge this present state of art, and I deem the settlement of this dispute either from a theoretical or from a practical point of view somewhat out of scope of the current research. Instead, I simply follow the word usage of the authors referenced throughout the literature review, the chapters on establishing hypotheses and those interpreting the results. When turning to my own research problems and methodological decisions, however, I generally use the term “happiness” as the preferred term. This choice is not to be understood as a commitment to any theoretical trends. Rather, the reason for my choice is partly practical.

Happiness is favoured against well-being and satisfaction with various life dimensions because, as one can expect, this concept is easier to grasp by survey respondents, covers a broad range of emotionally evaluative aspects of individual life situations, assesses a more general range of time and so, it is independent of immediate circumstances. Thus, it is presumably a stable and reliable indicator. Therefore, this concept can be deemed as a proper marker of well-being, following the argumentation of Taylor (2015). Furthermore, it can be added here that “how happy are you”-type of questions also leave evaluative dimensions to the respondents, and the response may

contain a comparative aspect with the immediate social environment. Therefore, it may sufficiently equalize potential cross-cultural variations in understandings of the concept of happiness.

From another point of view, "happiness" can be considered as the main resultant of other components of well-being, representing both affective (emotional) and cognitive (evaluative) aspects. As such, it taps into the core components of well-being, which can presumably relate to personal attitudes to, and experiences with, religious commitment, which also bears conscious and emotional consequences on individuals (see below, section 2.2). Thus, there is a theoretically plausible mechanism of effects from religiosity to happiness on the individual level that can be tackled empirically easily. Finally, from a more technical aspect, in the dataset studied sufficient relevant data on happiness is available which is in the focus of the analyses above, therefore the terminological choice also reflects this methodological decision.

## *2.2. Religion in society: defining a broad concept*

In the subsequent considerations, I turn to the clarification of the conceptual issues concerning religion and religiosity. First, how I conceptualize religiosity as a societal phaenomenon is outlined below.

Religiosity is primarily considered as an individual persuasion about transcendence with possibly, but not necessarily, accompanying practices and behaviour. As a starting point, I take the definition by Pargament and Mahoney, according to which religion is "a search for significance in ways related to the sacred". Regarding significance, they add that it "is both subjective and objective. Subjectively, significance involves the sense of satisfaction, value, and importance that accompanies the pursuit and attainment of goals. Objectively, significance refers to the goals that people strive for in living." (Pargament and Mahoney, 2005, p. 182) This approach is also parallel with that of Pollack and Rosta (2015) linking functional and substantive definitional approaches of religion, inasmuch they regard all social phaenomena religious which provide answers to the questions raised by the problem of contingency (the functional aspect), based on the simultaneity of transcendence and immanence (the substantive aspect).

As a necessary conceptual delimitation, I should add that throughout this research, religion is differentiated from spirituality (on the issue, see Zinnbauer et al, 1997). At

the same time, I highly acknowledge the multidimensional concept of religion, that is, the differentiation of religious persuasion from traditional denominational affiliation, membership and practice. In a European cultural context, for the majority of people in the majority of countries, all these may be embedded or at least more or less consciously related to a religious tradition. Namely, apart from the exceptions of the Czech Republic and Estonia in Eastern Europe, more than two-third of the national populations claim themselves as affiliated with a religious tradition and less than one-fifth of the populations as unaffiliated, agnostics or outward atheists – even if the relative majority of religiously affiliated people do not attach a personal faith, a frequent practice or conscious commitment to their identification. In most countries in this region, more than half of respondents said that religion was somewhat or very important for them. (Pew Research, 2017, pp. 49-63) Among the Western European countries, the vast majority of people currently are baptised and identify themselves as Christian, with the exception of the Netherlands, Sweden and Norway where more than or close to 50% of respondents are not affiliated (or in a smaller ratio, belong to other religious traditions). While religious practice, belief in God and strong commitment is less widespread in this region, upbringing as a Christian is quite common even among the non-practitioners. (Pew Research, 2018, pp. 81-105)

Following Georg Simmel's thought, Montemaggi (2010) argues that

> "…we can grasp at the inner reality of faith, and at faith as a multi-dimensional process, whose dynamics are determined by the individual's personality, but also gender, culture and life history. Accordingly, faith provides an all-encompassing meaning system through which believers understand the world. As a process, it invests life with the sacred, which, in turn, gives it meaning and purpose. Faith expresses the deep human need for the sacred, which requires one to transcend oneself, and to be in relationship with others. Relationships thus become the primary locus for faith's search for wholeness. This inextricable yarn of the I and Thou and, hence, of the individual and the community is where the religious quest for meaning is located.
>
> This conceptualisation of the religious process offers a multi-dimensional understanding of religion and identifies the distinctive character of faith. It enables to identify how faith reframes the believer's individuality and actions within the religious community, and explore the internal meaning-making

processes of individuals with the social reality individuals inhabit." (Montemaggi, 2010, p. 187)

This conceptualization underlines the importance of understanding that while faith is a key component of personal religiosity, its process is embedded in and closely intertwined with other religious and life domains. In sum, this study focuses primarily on religiosity understood as an individual characteristic, which describes a personal multidimensional relationship (identification, commitment, participation, faith etc.) with the transcendence-related cultural tradition commonly known as religion on a societal level, thus differentiated from spirituality. Therefore, this theoretical approach allows to treat personal belief, attendance, rituals and community as well as societal level religious context as separate aspects of religiosity, and to consider the varying effects of religiosity dimensions on individual behaviour and experiences.

### 2.2.1. Changing role of religion in society: theoretical explanations

As to the declining societal and individual importance of religion in Europe, several competing theoretical explanations appear in the field. However, only few of them enjoy the robust support of cross-cultural empirical data. The following parts are trying to reflect only on the most relevant approaches related to these issues.

#### *2.2.1.1 Secularization*

During the past two centuries, the most influential theoretical explanation for the causes of a decline in religiosity as a by-product of modernization has been the so-called secularization thesis. This approach largely suggests that as a necessary consequence of modernization, all irrational, transcendentally based worldview will eventually disappear. With the upsurge of instrumental rationalization, religious attitude gradually disappears, and the ecclesiastical structures simultaneously lose their former power and influence on the political system as well as their impact on daily life in general (Berger, 1967; Casanova, 1994; Dobbelaere, 2002).

Though based on some classical sociological theories by Karl Marx, Max Weber or Émile Durkheim (Inglehart, 2004), this explanatory model has been heavily criticized. Several critics pointed out that, despite the widely used term of 'secularization theory', it remains rather a thesis or a loose set of theses, which have never developed an independent and unified theory (Tomka, 2002). On the other hand, many argued that religious decline did not start with modernization. Moreover, it is

obvious that today – at least in Europe – churches bear a completely different social and political role than in previous centuries, although their political significance has undoubtedly declined in some countries. Nevertheless, the existence of a large number of evidences appears to support the conclusion that secularization is not a necessary consequence of modernization (Stark, 1999). Some scholars, however, rebutted these arguments (Pickel, 2011; Yamane, 1997). Studying British panel data from 1991-2000, Voas and Crockett (2005) found no evidence for a "believing without belonging" proposition; they concluded that decline was clear in religious affiliation, belief, and personal as well as societal significance of religiosity. Based on data from the European Social Survey, Voas (2009), too, concluded that the magnitude of the fall in religiosity during the last century has been remarkably constant across the continent, and while many people were neither regular churchgoers nor self-consciously nonreligious, religion usually played only a minor role in their lives.

It is very important to add that decline itself is far from evident in other parts of the world than in Europe. It is even argued that large-scale insecurities promote overall religious commitment (on "resacralization", see below). Pickel (2011) have debated the relationship between levels of de-churching and emphasized historical and political contextuality in Central and Eastern European countries, whereas Müller (2011) underlined the significance of dominant cultures. Wohlrab-Saar and Burckhardt (2012) introduced the concept of "multiple secularities" in order to stress the significance of cultural determination of the divergent "notions of secular, of secularism and secularity are charged with highly divergent meanings that are linked to different political and cultural contexts and histories of social conflict (Wohlrab-Saar and Burckhardt, 2012, p. 904). Furthermore, socialization in irreligious families may contribute to a higher share of religious "nones" partly independently of a more general economic and religious context as recently observed in Northern American samples (Thiessen and Wilkins-Laflamme, 2017).

#### *2.2.1.2 Individualization and religious privatization*

Several studies have already pointed at the growing discrepancy of different dimensions of religiosity (e.g., religious experience, community commitment, intellectual content of beliefs, religious practices and religious identity) and its diverse effects on value preferences, political and public attitudes etc. To some, this can be considered as a key component of the socio-cultural process generally characterized

as secularization (Tomka, 2010b; 2003; Rosta, 2008; Földvári and Rosta, 1998; Hegedűs, 2005; 2007). My previous analyses – a quantitative survey on protestant youth and especially those based on the secondary analysis of the results of the Hungarian National Youth Research survey – have offered further evidence on this matter (Hámori, 2008; 2011; Hámori and Rosta, 2011).

Using his measurement method for testing religious identity over the past decades, Tomka (1998) observed the decline of religiosity "according to the church" and the spread of religiosity "in one's own way", that is, individual belief without being committed to a church or a denomination. His results support the model of religious individualization (Luckmann, 1991; Hervieu-Léger, 2004; Rosta, 2008), according to which, people satisfy their spiritual needs detached from religious communities in their private life, perceived as a self-developed worldview, often including elements arbitrarily selected from a variety of religious traditions. Religiosity as a community phenomenon becomes an individual phenomenon, reducing the influence of religious communities and the social role of institutionalized religion. Some researchers describe this situation as believing without belonging (Davie, 1994; 1990). On the individual level, this model well describes the process and its important consequences for churches and religious institutions. It says not too much, however, about the causes that generate these processes.

Close to the notion of individualization, the idea of fuzzy fidelity also describes well the gradual detachment of religiosity dimensions. Analysing the dataset of Religious and Moral Pluralism study (1997–99), Storm (2009) identified fuzzy fidelity types through cluster analysis (moderately religious, passive religious, belonging without believing, believing without belonging) and found differing social characteristics in different countries for these groups. Analysing the first wave of the European Social Survey (ESS), Voas (2009) deduced that across the continent, many people were neither regular churchgoers nor self-consciously nonreligious, and this kind of fuzzy fidelity have risen and then fallen over a much-extended period.

However, contrary to these, based on data from the USA, Scheitle, Corcoran and Halligan (2018) concluded that in a USA setting, the decline of religious identification and at the same time, a growing congruence of religious dimensions – identity, prayer, attendance and a traditional view on the Bible – could be observed through the past decades.

*2.2.1.3 Religious markets theory: the economy of religion*

During the nineties, a new theoretical framework has become highly popular in sociological thinking about religion mainly in the US. The theory of religious markets and religious economy describes religious domain as an area of cultural consumption, in which economical laws regulate market mechanisms. Being rooted in the rational choice theory, this concept considers believers, church members and would-be converts as consumers who individually and rationally select from the available supply of churches in order to obtain the best possible profit for the least possible cost (Sherkat and Wilson, 1995). Because of this, the observed level of individual religiosity depends on how effectively the religious market in general can satisfy the needs of consumers. In the case of open religious markets, competition forces churches to provide adequate supply.

Thus, according to this theoretical approach, religious change can be modelled similarly to an economic process. Churches use donations and voluntary service by members as resources, and they offer religious products as commodities for those who are willing to invest. (Iannaccone, Olson and Stark, 1995) Although certain elements of the theory are only rudimentary developed, it makes a large number of problems well understandable and easily measurable. For example, several researchers described the problem of free riders who tried to benefit from the products of a religious community without paying proper investments or expenditures (Iannaccone, 1994; McBride, 2015).

As Sharot (2002) asserts, however, great differences exist in terms of monopolism, pluralism and state regulations between different societies, especially when comparing Western and Eastern religions. Thus, rational-choice-theory-based-explanation fails to account for religious change outside America, and this “perspective ignored 'diffused religion,' especially in its non-official, popular forros which were of great importance in traditional Europe and remain vital today.” (Sharot, 2002, p. 451) At the same time, Voas, Crockett, and Olson (2002) warned against the methodological problem that resulted in a spurious correlation between religious diversity and participation out of measuring them by variables that were necessarily correlated. Krech et al (2013) concluded that although religious diversity, measured by organisational diversity and diversity in adherence, did actually lead to higher religious vitality in some studied European regions, the size of its effect were varied by the contextual cultures and social subgroups. Aarts et al (2010) concluded that although the level of deregulation

of religious markets in European and American countries indeed explained the between-country differences in church attendance, the rivalling secularization thesis gained stronger support. That is, both the corroding effect of modernization on church attendance was quite remarkable and the duration of deregulation did not contribute to religious vitality to an extent that could counterbalance religious decline.

The case in Hungary also shows that this theoretical framework can be applied to the European conditions only with certain limitations (Hámori, 2011) and several scholars have pointed out that the religious revival in some post-socialist Eastern-European countries with clear religious monopolies could be interpreted as a disproof of this theoretical framework (Müller, 2011; Pickel, 2011). Still, this theoretical approach highlights the importance of the in-depth analysis of churches as organizations and believers as economical actors (Iannaccone, 1998).

#### *2.2.1.4 Religious revival in Europe*

A popular yet commonly debated idea has been the apparent religious upsurge in Central and Eastern Europe after the political transitions in 1989. As Tomka (2010a, p. 14) put it,

> "the Central and Eastern European religious changes indicate the strong social role of religion. The religious revival observed in this region and time period can hardly be harmonized with the hypotheses of secularization theory… despite the prophecies of both Marxism and the ruling sociological theories in the first half of the 20th century, religion is an important indicator and one of the factors with crucial importance in the Eastern-Central European transformation".

Some later analysts have questioned religious upsurge, however. Rosta (2007a), for example, tested the applicability of the idea for the case of Hungary by various measures including data from the International Social Survey Program, the European Values Survey, as well as other Hungarian surveys. He has shown that in general, religious decline could be observed also within cohorts, and the rising share of religious but unchurched population can explain the assumed religious growth after the political transitions. As to the causes, based on data from a Hungarian youth context, it can be raised that institutional agents and societal-level change (period effect) are less important than family as a primary socialization agent. (Hámori and Rosta, 2014) Molteni (2017) concluded that the apparent religious revival in Europe

happened mainly because the slight increase in the Orthodox countries (primarily in Russia and Bulgaria), while changing trends in belief and practice should be distinguished from this.

Even if one can rightfully cast doubt on framing recent trends as a clear process of religious revival, still this idea helps to make some qualifications about either a strict use of secularization thesis or the far-fetched application of religious markets theory for a non-US context. Pickel (2011), for example, have debated the relationship between levels of de-churching and emphasized historical and political contextuality in Central and Eastern European countries. Hagevi (2017), disproving the applicability of religious market theory in Europe, suggests that a time lag exists between changes in religious supply and societal level religiosity because of the protracted intergenerational value change.

While no clear trends can be observed in a regional level in the Central and Eastern European countries, a stability of some religious dimensions can be argued for in some regards. As Halman, Pettersson and Verweij (1999) observed through the European Values Survey data from 1981–1990, the effect of religiosity on both individual and public/societal values remained present, and it even became stronger on the personal/individual level (e.g. concerning family). They found no observable relationship, however, between speed and extent of secularization and the change of effect of religiosity. Pollack and Rosta (2015) distanced themselves from existing theoretical viewpoints or taking their substantial assertions for granted. Instead, they offered a multi-paradigmatic approach. The proposed set of theorems – theory of differentiation and de-differentiation, absorption hypothesis, distraction hypothesis, coupling thesis, overpowering thesis, thesis of the simultaneous presence of religion in different levels of society, theorem of the majority confirmation, theorem of internal diversification, conflict hypothesis – all show a relationship between religion and society presumably more complex than the previous theoretical approaches have assumed.

#### *2.2.1.5 Globalization and the significance of religious identity*

While previous theoretical explanations like, e.g., secularization thesis, assumed the dropping social importance of religions, it is often argued that globalization also increases the significance of religiosity. Economic globalization resulted a world in which substantial decisions are made by actors part of global-level (transnational)

information networks, which affect daily life of individuals on the local level (Castells, 2000). Because of this, not only nation states became without means in mitigating large-scale social problems, but individual careers became contingent, unpredictable and insecure, too. Social structures that previously defined life chances and identities became extremely malleable or, as Bauman (2000, pp. 82ff) has put it, "liquid". Facing this contingency and unpredictability, not only economically vulnerable but also better-to-do people are more and more in the need of stable identities and of memberships in real and imagined communities providing them with secure social identity, and reducing insecurity through this. It seems that religions are especially capable of functioning in this role, which can explain the dynamically growing number of religious people worldwide (Karner and Aldridge, 2004).

Based on the conclusions of Norris and Inglehart (2004), Davie (2010) underlined that on the one hand, "virtually all advanced industrial societies have been moving toward more secular orientations in the past 50 years, but on the other the world as a whole now has more people with traditional religious views that ever before". She added that the first statement argued that the need for religiosity varied "systematically with levels of societal modernization, human development, and economic inequality". Nevertheless, insofar modernization, associated with secularization, leads to a declining fertility, this trend is "necessarily self-limiting" (Davie, 2010, p. 171): a growing rate of global population would practice their faith in a traditional manner. At the same time, as Beckford (2010) argues, public significance of religion can become ever stronger also in highly secularized democracies depending on the political choice of ruling elites.

### 2.2.2. Effect of religion on individual behaviour

Observing a religious tradition makes certain behaviour and decisions more likely. According to some recent empirical findings, this appears to be generalizable in diverse contemporary settings, in spite of the large-scale religious decline as observed by several scholars.

Quite unsurprisingly, issues in the scope of religious doctrines are those that can be regarded as fixed points of reference for behavioural alignment. This especially stands for moral issues, primarily, marital and sexual decisions. Holding conservative relationship values, moral conformism and avoiding sexual conduct that deemed

immoral by a religious tradition like pornography among the more devoted has often been evidenced both in the USA and in a European context. (See, e.g., Simons, Burt and Peterson, 2009) In some research contexts, the strength of this association varied by denomination (Cochran and Beeghley, 1991), country-level religiosity (Scheepers, Te Grotenhuis and Van Der Slik, 2002), or sexual orientation (Granger and Price, 2009). Risky health behaviour like, e.g., substance use, has also been negatively influenced by religiosity (Moscati and Mezuk, 2014; Hungerman, 2014a). Patterson and Price (2012) noticed the effect of pornography on happiness to be more negatively among those who regularly attended a denomination providing stronger moral guidance.

As to personal values, studying Dutch EVS data, Sieben and Halman (2014) inferred that parental values were influenced by religious behaviour and commitment, even within a highly secularized society. In particular, affiliated people valued independence lower and obedience higher, and church attendance had a similar effect. Traditional belief in God was associated with lower value of autonomy but also a lower value of obedience. Denominational differences were moderated by belief heterogeneity, and the effect of church attendance on valuing obedience was in turn influenced by denominational affiliation. Parallel to this, Pusztai (2016) concluded that religiosity and religious homogamy of parents effectively contributed to healthy structure and stability of families of Hungarian higher education students, even if controlling for educational attainment and occupational status of parents.

Another area that is known to be affected by religious persuasion is that of social and political values. Owen and Videras (2007) verified that religious belief system on a societal level affected pro-environmental attitudes and behaviour. In Central and Eastern European countries, Lasinska (2013) found increasing Eastern Orthodox affiliation contributed to increased political participation, while, contrary to Western findings, Protestant affiliation decreased participation. Scheepers, Gijsberts and Hello (2002) observed that stronger ethnic prejudice was positively associated with Catholic and Protestant identification, more frequent attendance and religious particularism, but negatively with the saliency of religious belief. Effects proved to be equal across the studied European countries and robust against the tested individual and national-level characteristics. Doebler (2014) also concluded that intolerance against immigrants and Muslims was lower among those confessing traditional or modern fuzzy belief in a Higher Being, and much higher among fundamentalist religious respondents.

Members of any denominations were not more intolerant than non-affiliated, with the exception of non-practicing Protestants. This effect was evidenced in a USA context, by, among many others, Glazier (2017), who observed that religiosity measured as providentiality (i.e. agreeing that God has a plan that one can help to fulfil) affected party voting. However, in the USA again, Schwadel (2002) showed that although church community participation indeed contributed to earning civic skills, this rewarding active participation was to a high extent limited to middle and upper class members. Moreover, in a Hungarian context, Bognár and Kmetty (2020) recently observed a clearly diminishing impact of religiosity on value choices.

Consumption habits and choices are also apparently influenced by the value preferences conveyed by observing certain religious traditions. For example, Cohen-Zada and Sander (2011) concluded that in the USA, repealing blue laws (i.e. the abolishment of the Sunday shopping prohibition) increased church participation costs, resulting in lower church attendance rates for both men and women and lower happiness level for women only. In an example from Taiwan, Chai and Chen (2009) observed that intrinsically religious people were more keen on buying products from sustainable sources, but they found no such relationship with extrinsic religiosity, suggesting that this preference is more like an internal value orientation and not a mere external conformism. Coşgel and Minkler (2004a) formulized that commitments and preferences in choices like consumption and other behaviour patterns originated from a need of identity integrity. Coşgel and Minkler (2004b) further added that consumption could act as expression of one's religious identity in a non-incentive-based form. This idea challenges the assumed independence of beliefs and preferences, rather suggesting a complex relationship between the two.

As to the underlying mechanisms of the religiosity–behaviour link, McCullough and Willoughby (2009), reviewing psychological empirical evidence, concluded that religiosity was positively related to self-control as well as to certain personality traits contributing to self-control. Furthermore, religion influenced selection and attainment of goals, and certain religious rituals, like meditation, prayer, religious imagery, and scripture reading, promoted self-regulation. All these partly explained the positive association between religion and health or well-being. However, they found only mixed evidence for the contribution of religion to self-monitoring. As McCullough and Carter (2013) argue, self-regulation and self-control are key concepts in

understanding how religion affected human behaviour. Due to their approach, self-control as promoted by religion is an effective way in answering the modern problem of waiting, tolerating and cooperating, and as such, it can be deemed an evolutionary adaptation. According to their reasoning, religion encourages people to select specific goals (e.g. by sanctifying them), and self-regulation and religiosity are, in turn, associated empirically, however, causal links cannot be established in the lack of longitudinal studies. They suggest that

> "[a]wareness of an evaluative audience increases people's self-awareness. When made self-aware, people then compare their behavior to relevant behavioral standards … Such effects could conceivably be mediated by religious cognition's effects on self-monitoring, although this remains an open question." (McCullough and Carter, 2013, p. 129)

### 2.2.3. Effect of religion on social interactions: religious prosociality

Religious persuasion affects, according to empirical findings, not only individual values and choices but also decisions and actions pertaining group participation or social relationships. Torgler (2006), for example, came to the conclusion that several measures of religiosity, like church attendance, religious education, being an active member of a church or a religious organization, perceived religiosity, religious guidance and trust in the church, were significantly and positively associated with tax morale and other indicators of cheat avoidance. Not all denominational belongings showed such significant relationships, however. At the same time, the findings based on a research with Israeli kibbutz respondents by Ruffle and Sosis (2007) evidencing that frequent participation in costly rituals predicted cooperational attitudes suggest a generalizability of this result.

Offerings and donations are but one typical example of religiously motivated altruistic behaviour. As found by Reitsma, Scheepers and Te Grotenhuis (2006) in seven European countries, the frequency of church attendance, religious conviction, dogmatism, and importance of religion in everyday life and religiosity of one's social network influenced positively while the religious homogeneity of one's network affected negatively the intention to donate. At the same time, prayer and religious experiences were associated positively with donating, but these effects were supressed by other variables in the complex models. Abreu (2016) observed that religiosity partly

determined positively prosocial donation in different country contexts, although interfering with social background, and with only small difference in motivations of religious and non-religious people.

Another type of prosocial behaviour that is often coupled with religiosity is volunteering. As van Tienen et al (2011) showed in a Dutch study, religious as well as secular formal volunteering were predicted by religious attendance. However, individual religious characteristics were found to be unrelated with formal volunteering, and having a more religious worldview decreased the likelihood of formal volunteering. Informal volunteering was the most strongly predicted by spirituality, but no other aspects of religiosity increased the likelihood of informal volunteering, including also the integration into a religious community. As to the probable underlying mechanisms, Son and Wilson (2012) investigated in the context of the USA that the feeling of being obliged to volunteering originated from childhood home religiosity as "absorbed" in individual adult religiosity and directly from education. Van Cappellen, Saroglou and Toth-Gauthier (2016) proved that among the more religious participants, prosociality (i.e. spontaneous generosity toward others and charity) was promoted more by the social rather than cognitive and emotional aspects of the Catholic Mass; furthermore, emotion of love significantly mediated the relation between religion and higher prosociality. The overall effect might be contingent on cultural context according to Stavrova and Siegers (2014). As they summarized,

> "…on average, religious individuals were more likely to be members of charitable organizations, less likely to justify lying in their own interest, and less likely to have committed insurance fraud or traffic offenses compared with non-religious peers. However, there are cultural contexts in which these prosocial effects of religiosity are considerably weaker or even absent, i.e., countries with strong social enforcement of religiosity… the prosocial effects of individuals' religiosity were consistently stronger in countries in which religious behavior is a matter of personal choice compared with countries in which religious behavior is imposed by social norms." (Stavrova and Siegers, 2014, p. 327)

Some, however, questioned the existence of such a commonly proposed link. In trust game experimental settings, Anderson and Mellor (2009) found no difference between the contribution levels of religious and non-religious participants, although the level

observed was more stable for religious participants. Moreover, Anderson, Mellor and Milyo (2010) observed no relationship at all between behaviour and self-reported religiosity but some weak relationship with regular active participation in religious services.

Galen (2012) criticised research on whether religious prosociality exists at all, and he posed conceptual and methodological problems against empirical evidence, like, e.g., the inappropriate selection of comparison groups or social desirability bias of self-reported data. He suggested that in most cases, prosociality is driven potentially not by religious motives but mere in-group bias, and thus, it can be explained on a purely psychological basis. Opposing Galen's critiques, Myers (2012) argued that in-group bias could also be deemed a prosocial phaenomenon, and that the internalised norms promoted behaviour at least to some extent. He underlined that "irreligious places (nations, states) and highly religious individuals tend to exhibit high levels of health, wellbeing, and prosociality. Religious engagement correlates negatively with prosociality and well-being across aggregate levels (countries and American states), and positively across individuals (especially, as noted earlier, in more religious countries)." (Myers, 2012, p. 915) Saroglou (2012) further refuted Galen's critical propositions on the basis of empirical evidence. As he argued, "self-reported prosociality of religious people is not a simple reflection of social desirability; and peers that are blind with respect to the religious status of the target confirm the religiosity–prosociality link. Moreover, although not consistently, when results are significant, studies using behavioral measures confirm the religiosity–prosociality link, except when the target is an outgroup member. The links between religiosity and prosocial behavior become clearer after religious norms are made salient or relevant positive emotions are induced." (Saroglou, 2012, p. 910)

Also relevant to my research focus is that Athota (2013) suggests the positive contribution of compassion or other virtuous activities, and that Aknin et al (2013) observed prosocial spending positively affecting individual happiness across different counties with differing cultures and economic conditions.

## *2.3. Religion and Well-Being*

Many of the theories on the influence of religiosity on contemporary societies described above in section 2.1 have referred to the significance of economy, especially

secularization thesis and rivalling explanations (through linking economical swift trends with societal transformation and religious decline) as well as the theories on religious globalization (through pointing at the varying significance of religion as a consequence of economical differences). Thus, it is essential at this point to get an insight into some of the pertaining macro- and micro-level hypotheses and explanations of this relationship. Later on, I narrow the focus on the subjective aspect of well-being, also known as happiness.

### 2.3.1. Religion and economic development on the societal level

Since at least as early as Weber's famous thesis on the Protestant ethic (Weber, 2005), the effect of religion on societal well-being and economy has been a highly inspiring idea for sociological imagination. As a somewhat more recent thread, Pacione (1990) argues that several religious communities around the world are concerned with, and efficiently got involved in, mitigating poverty and deprivation especially where national, local or market-based social policies have remained ineffective. In this regard, it is important that churches "seek to redistribute self-generated resources, including staff and income, from affluent to needy parishes and individuals". (Pacione, 1990, p. 201) Moreover, churches strive to promote ethical business activities by, for example, creation of enterprise boards, identification of socially useful production, welfare-rights schemes, and promotion of community businesses, all these not independently from constant efforts to reconceptualise modern capitalism as a whole in terms of aims, priorities and means. What makes these efforts more efficient is that churches as interest communities are like grass-root lobbying organizations, capable of developing close links with political authorities while remaining independent in terms of party affiliations and economic interests, advocating the needy on a moral ground. (Pacione, 1990) Looking into a wider context more recently, Offutt, Probasco and Vaidyanathan (2016) reviews a range of literature on the role of religion in development policies.

Glaeser and Glendon (1998) partially evidenced a long-lasting effect of Protestant Reformation on economic development: among Presbyterians, they observed a greater coherence between worldly success (measured by educational attainment) and church attendance as well as between individual and group behaviour. Guiso, Sapienza and Zingales (2003), too, confirmed that religion in general favoured economic

competition and free-market attitudes, but it was true more for Christian religions, especially in countries with a Christian majority. At the same time, differences between Catholics and Protestants were not remarkable and not always conformed the Weberian theory. In a later paper, they added that religion, like ethnicity, could have been deemed a measurable part of culture insofar as being inherited and changing on the long run only, and it could have been proven that it affected economical values and output, too. (Guiso, Sapienza and Zingales, 2006)

Based on a Swiss household panel data, Steiner, Leinert and Frey (2010) found a positive impact of religiosity on economic output. The relationship has been apparently present in different contexts as well. A positive correlation, yet no robust relationship is cross-culturally observable between major religions and economic development as Noland (2005), too, concludes; he adds that Islam also favours economic growth, contrary to the popular notions. A research focusing on the Muslim Ramadan fasting (Campante and Yanagizawa-Drott, 2013) also found that a longer Ramadan period decreased economic output of Muslim countries. The authors concluded that religious activity has primarily influenced economic performance not directly but through at least partly by promoting beliefs and values fostering certain work ethic and thus affecting labour supply, but, at the same time, it promoted subjective well-being of believers. Stam, Verbakel and De Graaf (2013) who, analysing 2008 data from the European Values Study, also evidenced this mediating role of work ethics promoted by religion, argued that religious heritage explained the highest share of variation across countries in work ethic. According to Ortiz (2009), the relationship was apparent in Latin America, too, where religion mildly influenced aggregate economic output. However, contrary to the Weberian theory, Catholic religion affected economy the most, while the rate of affiliation was far less important.

Some findings, however, show that a direct link from religion to economic development is not evident. According to Young (2009), country level religiosity's effect on economic performance measured by the gross domestic product is weak, inconsistent, and not robust in time and for the West. Jacob and Osang (2010) described a non-linear relationship between religiosity and economic development: countries with either extremely low or high level of religiosity performed below those in the middle of the continuum. Dima, Preda and Dima (2014) stressed the importance of democracy in contributing to economic development, yet they argued that the

contribution of high-level religiosity to democracy was ambivalent and path-dependent.

Regarding the opposite link, I have already briefly reviewed the widely debated argumentation of secularization, which relates economic development with religious decline. Some research findings are in line with this. For example, according to Becsi (2010), wealth promotes longer life expectancy and secularization. Paldam and Gundlach (2013), too, asserts that with societal level economic development (rising incomes), religiosity falls in countries (robustly measured by importance of religion in different domains of life) on the long run. As Binet and Facchini (2011) shows, a higher economic output is associated with higher religious freedom. While Inglehart and Baker (2000) admitted that economic modernization might lead to the decline of institutionalized religion, yet they underlined that traditional values were apparently more persistent in forming societal level value systems. They argued that secularization theory reflected tendencies mainly from the period of the industrial revolution; in the postmodern era, however, search for meaning and purpose in life have become more prominent and have contributed to the survival of traditional belief. In line with this, Karner and Aldridge (2004, cited above) noted that globalization is often argued to increase the significance of religiosity. According to their explanation, economic globalization resulted a world in which individual careers became insecure, and consequently, not only the economically vulnerable but also the better-to-do people were more and more in the need of stable identities and of memberships in real and imagined communities providing them with secure social identity, and thus, reducing the perceived insecurity.

This apparent contradiction may be resolved by, as Opfinger (2014) argues, that demand-side models explain national level religiosity in less developed nations. That is, a higher religious diversity there contributes to lower level of religiosity. In economically modernised nations, however, with higher level of education and migration, higher religious diversity is associated with higher overall religiosity, supporting a supply-side theoretical model of religiosity.

McCleary and Barro (2006a) argue that religion is in a two-way interaction with economy. As an independent variable, religion affects economy through promoting values and behavioural patterns, such as work ethic, honesty, thrift, charity, hospitality etc. as theorised by, among others, Max Weber. Religion as a dependent variable is often viewed as inversely correlated with modernization and hence advances in

education and science and to movements toward the greater economic security. Other theories referred emphasize the significance of time devoted to religious activity and thus the probability of reduction in religious activity parallel with the growth in real wages or economical productivity. The cross-country quantitative analysis of McCleary and Barro (2006a) based on a long time frame dataset from 81 countries has interestingly verified both this two-way interaction and many of these hypotheses. As they conclude, "one striking result … is that per capita GDP has a significantly negative effect on all of the religiosity indicators. This finding supports the secularization view as well as the rational-choice perspective … One observation that boosted the arguments of the nonsecularists is that the rich United States has maintained high levels of religiosity over time … the United States is a substantial outlier". (McCleary and Barro, 2006a, p. 62) At the same time, the significance of the political context has been brought in light by the finding that having a state religion in a given country had been positively related to attendance at religious services and with belief, while government regulation on the religious sphere had been negatively related to religiosity. As to the opposite causal direction, their model suggested that belief had a significantly positive effect, whereas religious practice had a significantly negative effect on economic performance. (McCleary and Barro, 2006a) The authors try to explain this apparent contradiction by suggesting, "growth is enhanced when the religion sector is unusually productive in the sense that output (belief related to an afterlife) is high compared to input (attendance). Given beliefs, more time and resources spent on formal religion can be viewed as a drain on resources, which detracts from market output (GDP)." (McCleary and Barro, 2006a, p. 68)

However, in their other analysis on country-level aggregate data from international surveys (the International Sociological Survey Programme, the World Values Survey, Gallup polls), McCleary and Barro (2006b) rather state that increasing gross domestic product per capita leads to decrease in inspected religiosity measures. Their instrumental estimation suggests that the causal direction leads from economy to religion and not from religion to economy. Moreover, as they conclude, "The measures of religiosity were positively related to education and negatively related to urbanization. Participation in religious services was positively related to the fraction of the population under age 15 and negatively related to life expectancy. When these detailed aspects of economic development were held fixed, religiosity was virtually unrelated to per capita GDP. Although the fits improve by including multiple

dimensions of economic development, the causal interpretations become more difficult." (McCleary and Barro, 2006b, p. 171)

Scheve and Stasavage (2006) deem religiosity and social insurance as two competing mechanisms that help people to cope with psychically costly adverse life events. Thus in societies two states are present: high religiosity with low social spending, and low religiosity with high social spending. Gaskins, Golder and Siegel (2013), too, finds that the effect of religiosity on economic attitude is present but it also depends on social redistribution characteristics and income level. Consequently, religious participation declines with economic and individual development and with state regulations on religion, but increases with inequality.

### 2.3.2. Religion and socio-economic status on the individual level

To clarify the complex issue of the relationship between religion and well-being further, I now turn to the problem of how religion interacts with social structural positions and with material well-being.

The relationship has been evidenced in various contexts. In the USA, Sander (2002) found a positive correlation between educational attainment and religious attendance; however, he could not evidence a causal relationship between rising education and growing religious attendance when treating education as an exogenous variable. On the contrary, Darnell and Sherkat (1997) observed that the affiliation with protestant fundamentalism cut back educational attainment. They also found that among protestant fundamentalists in the USA, religious values of parents passed on to children influenced educational attainment of youth (Sherkat and Darnell, 1999). Later, Sherkat also noticed that higher educational attainment decreased certainty in the belief in God, while income was not associated with any particular religious belief. (Sherkat, 2008) Interestingly, Glaeser and Sacerdote (2008) identified a dual effect in this context: on the one hand, with higher educational attainment, individual religious attendance raised; on the other hand, across denominations, attendance decreased with rising education. They explained the first one with the promotion of social connections by education, whereas the second with emphasizing secular values which conflicted religious belief. Analysing Canadian census data, Hungerman (2014b) also found that a higher educational attainment lead to lower religiosity.

That adult wealth accumulation and religious upbringing shows patterns of denominational differences in the USA was already evidenced by Keister (2003) who showed that Jews attained a relatively higher whereas conservative Protestants (i.e. Mormons) a lower status in the USA compared to the average population. At the same time, Catholics and mainstream Protestants could not be distinguished. In two samples from the USA of 3,521 in 2005, Schieman (2010) found that a higher socioeconomic status (measured by household income and educational attainment) was associated with lower level of belief in God's involvement in, and influence on, everyday life. At the same time, he suggested that a higher religious involvement (measured by subjective religiosity, frequency of attendance and prayer, and reading religious texts) weakened this negative association. Looking to a Central-Eastern European example, Hegedűs (2001b) presented characteristic generational differences in the Hungarian population of the late 90s: people in lower social status were more religious only among the elderly population. However, among members of the younger generation, both the less well-to-do and those in the highest status were more religious. Among the youth, the relationship between social status and religiosity was dissolving. Analysing data from the Hungarian national youth study in 2004, Rosta (2007b) experienced that religious youth showed higher-than-average social status especially in major settlements and cities, whereas this association was mediated by parental educational attainment. Using various data sources on Hungary (e.g. European Values Study, International Social Survey Programme, Aufbruch) from the period of 1990-2008, Tomka (2010b) evidenced a diminishing gap between the social status of religious and non-religious population and vanishing majority of marginalized social groups among the religious because of the more well-to-do and higher educated people becoming more religious.

This relationship might be explained by a direct effect of religiosity on economically relevant decisions, that is, observing a religious tradition makes certain behaviour more likely. As it has been proven on data from the USA (Keister, 2008, p. 1264), "low educational attainment, early fertility, large family size, and low rates of female labor force participation reduce[d] wealth for CPs [i.e. Conservative Protestants]". The research also proposed that there was a direct effect of religion on wealth (Keister, 2008, p. 1256). The significance of religion in perpetuating value assets has been also emphasized by the fact that the direct effect of religion on wealth remained after controlling for a large number of other influences. A cause of this effect

may be that “CPs consider money to belong to God and, as a result, they seek divine guidance in managing money and avoid accumulation.” Results also suggest that “CPs value sacrificial giving, and they report giving more to religious causes at all levels of income” (Keister, 2008, p. 1264).

What is more, Lipford and Tollison (2003) suggest a bicausal relationship between religion and income. As they assume, “religious membership is in part determined by economic factors, primarily the opportunity cost associated with high earnings potential, and that economic welfare is in part determined by religious membership, which may discourage the accumulation of material wealth and also require commitments of time and money that directly inhibit the pursuit of material wealth.” (Lipford and Tollison, 2003, p. 257) However, it is noteworthy, that Bettendorf and Dijkgraaf (2011) rejected the bicausal relationship. They found that religion affected income negatively, in the same direction as income affected religion, but they became insignificant when equating simultaneously, with no change in the effect of socioeconomic background variables. However, the authors admitted this probably being a speciality to the Dutch case only.

Another, more indirect explanation is the significance of religion in forming individual values underlying economically relevant decisions what was evidenced in several European countries by Davis and Robinson (2001) who, analysing data from the International Sociological Survey Programme, concluded that individualism and preference of libertarian economic attitudes were more typical of those with modernist and not orthodox religious views. While concluding the analysis of data from the German Socioeconomic Panel study that neither differences in human capital acquisition nor institutional factors could explain the observed variability in economic growth and development, Spenkuch (2017) asserted that Protestantism affected individual values resulting in longer work hours but not higher wages per hour, thus contributing to a higher income earned. Jagodzinski (2009) also found that religion affected values, including that of work ethics and behaviour.

The generalizability of this explanation beyond a Christian context is supported by Parboteeah, Paik and Cullen (2009) who analysed data from the World Values Survey from 1981-1997 and found that all four studied world religions – except for orthodox Christianity – were positively associated with intrinsic and – except for Christianity – with extrinsic values, but also those with no religion saw work values positively. Hui et al (2014) examined responses from 604 college students in 12 colleges in Taiwan,

and concluded that students with a higher level of spirituality developed more certain career decision-making, and observed that the higher score for spirituality lead to higher overall score for work value.

Furthermore, inequalities may be perpetuated or aggravated by religious differences according to some other explanations that stress the relevance of social networks. Wuthnow (2003), for example observed in a USA context that religious involvement measured by church attendance and membership did not associate with higher number of friends of a lower status. Stewart (2008) advocated the reconsideration of the importance of social structural position in denominational affiliation assumed by classical sociologists (Marx or Weber) as well as some modern theologians (like Tröltsch and Niebuhr) and rejected by post-modern scholars who emphasized the individual agency instead. Stewart recalled the notion of "socially habituated subjectivity" coined by Sean McCloud, who, based on the Bourdieusian term of habitus, insisted that for different social groups, different beliefs, practices, attitudes, assumptions and gestures were becoming available through socialization process. Thus, when approaching religious communities, social groups would have different mapping tools. Based on McCloud, Stewart added that members of upper social classes have a capability to develop a wider social network, and thus to get access to a wider scale of religious practices. Keister (2011) also suggests that religion can affect economic attainment through various mechanisms. First, religiosity influences intergenerational and demographic behaviours, like value transmission, race, family patterns (marriage and divorce decisions, homogamy, timing, and fertility), human capital and work values. Second, religion contributes to shaping values and orientations toward work and occupation, budgeting, consumption, charitable giving, debt, saving, and asset accumulation, time allocation and family commitment. Third, religious belonging provides individuals with a network structure, which is especially important in conveying information that influence perspectives on education and work, attitudes toward jobs, saving and investing and the like. Conducting 44 in-depth interviews in the USA, Sullivan (2006) also confirmed that for low-income working mothers, faith helped in work in coping with work-related stress and contributed to higher job performance.

Migration in contemporary societies is a particular case where religious differences are coupled with social inequalities. Here, both a beneficent and a harmful impact on social status of religion have been empirically demonstrated. Wuthnow and Hackett

(2003) found adherents of non-Western religions in the USA to exhibit higher level of human and social capital in education, trust, social contacts, interreligious ties and socioeconomic status. Hirschman (2007) observed that migrants' churches in the USA provided refuge (against trauma), respectability (i.e. social recognition) and resources (social support) for migrants, thus contributing to a prospected higher social status. At the same time, Saroglou and Mathijsen (2007) found a negative relationship between high level of (Muslim) religiosity and low acculturation among French and Belgian immigrants. Foner and Alba (2008) stressed that immigrant integration depended on country context. They pointed out that religious background of immigrants, religious traditions of the majority population and church-state relationships in the host society all influenced the outcome of the integration process.

### 2.3.3. Religion and subjective well-being

Faith and happiness are, according to several studies, closely linked. As Francis (2011), reviewing relevant theoretical literature and some empirical findings, concludes, "a clear and consistent positive association exists between religion and happiness", despite the lack of clarity and consistency in the conceptualization of the two (Francis, 2011, p. 113).

Even the definition by Pargament and Mahoney emphasized that significance searched for by religious ways subjectively involves the sense of satisfaction, value, and importance that accompanies the pursuit and attainment of goals. (Pargament and Mahoney, 2005, p. 182) This paper also reviews theoretical implications of sanctification of life objects and domains through which this significance is attained and the sanctification–well-being link can be explained, in particular, investment in as well as protection and preservation of sacred aspects of life, experiencing spiritual emotions, and relying on sacred resources. (Pargament and Mahoney, ibid.)

Research into this relationship goes back as early as the 70s. In his reanalysis of some findings based on The Quality of American Life survey, Hadaway (1978) suggested that people claiming to be religious showed a higher level of life satisfaction compared to non-religious population. As Hadaway (1978) argues, religion is not so much a compensation to those for suffering various sorts of deprivation, but a real resource contributing to happiness and the quality of life. Nevertheless, some studies demonstrate that religion truly can act as a compensation for suffer even in the harshest

situations, too. Kennedy, Davis and Taylor (1998), for example, stress the prevention function of religion against adverse life events. In a minor convenience sample, they found a buffering effect of spirituality against trauma suffered through sexual assault: interviewed women with increased spirituality showed higher subjective well-being after the dreadful event.

Diener et al (1999) also admitted that religion might have had a positive effect on subjective well-being. Sherkat and Ellison (1999) reviewed several domains and mechanisms evidenced by earlier research which suggested a causal effect from religiosity to well-being and mental health. Among others, religiosity affected health behaviours and individual lifestyles, social integration and support, psychological resources, coping behaviours and resources, and various positive emotions and healthy beliefs. Reviewing recent developments in the study of the psychology of religion, Emmons and Paloutzian (2003) also mentioned several directions where measuring religion was indicative to study personal (psychological or existential) well-being. Dolan, Peasgood and White (2008), too, reviewed several studies that showed a strong association between either religious activity or religious belief and belonging and happiness, regardless of with which tradition one was affiliated. According to Myers (2008), a positive correlation is observable between religiosity and happiness, coping with loss, charitable giving and volunteering, as well as moral and virtuous behaviour e.g. gratitude or forgiveness. Moreover, it provides social support, meaning in life and managing with trauma, and promotes healthy behaviour.

Studying the youth in the USA, Smith (2003) listed several theoretical factors of the effect of religiosity. The first factor he identified was Moral Order. That is, religiosity provides moral directives of self-control and moral virtue; spiritual experiences which can help to solidify moral commitments and constructive life practices; and role models that provide examples of life practices and offering positive relationships. Second, practicing a religion and belonging to a faith community offers learned competencies, namely, community and leadership skills transposable for constructive uses beyond religious activities; skills to cope with the stress of difficult situations, to process difficult emotions, and to resolve interpersonal conflicts; as well as increased and alternative opportunities to appropriate more and distinct kinds of cultural capital. Finally, community membership means also social and organizational ties or social capital. That is, a church community goes along with cross-generational network ties with the potential to provide extra-familial, trusting relationships;

network closure involving people who pay attention to the lives of youth, and who can provide oversight of and information about youth to their parents to discourage negative and encourage positive life practices; and extra-community skills with connections to positive experiences and events well beyond their local communities.

As I demonstrated above, several of these factors (e.g., relationship with others, community membership) have been evidenced to contribute positively to subjective well-being. Theorizing special positive functions of religion that can contribute to well-being during aging, Woźniak (2015) similarly argues that this includes a source of coherence, provision of meaning and coping with stressful life events, a source of positive self-perception and a sense of personal control, and social ties and social support through religious community as well.

The relationship has been observed in non-USA context as well. For example, Rosta (2011) found that in Hungary, religious attendance and life satisfaction were weakly but positively associated. Fidrmuc and Tunalı (2015) analysed data of the European Social Survey from 2000 to 2008 and concluded that belief generally raised happiness, however, belonging to an organised religion had more adverse effect for women. The link has been evidenced in a non-European and in a non-Christian setting as well. Although only in the case of Protestant women, more frequent attendance had a buffering effect on the negative impact of stress on happiness in South Korea (Jung, 2014). A significant positive relationship has existed between religious adherence and subjective well-being in the case of Eastern religions observed in Taiwan, too (Chang, 2009). Although some life-domains were apparently positively related with religious attendance both in the case of Christians and followers of Eastern religions, an interesting difference could be revealed between the previously studied Western and the analysed Eastern traditions: “For the believers of Eastern religions, religious attendance is positively associated with the level of satisfaction in one’s health condition, but is not significantly related to the satisfaction with interpersonal relationships. By contrast, for the adherents of Western religions, individuals who attend church more frequently appear to have a higher level of satisfaction with interpersonal relationships, but church attendance has no significant relationship with one’s health condition.” (Chang, 2009, p. 13) As to the author's argumentation, this might have been explained by the different level and role of institutionalization within these two cultural settings. Moreover, satisfaction with personal financial status has not been significantly related with religious affiliation in the case of any traditions,

suggesting a difference in cultural values here. As to Islam, Ismail and Desmukh (2012) found that in a minor higher-educated Pakistani Muslim sample the salience of religious beliefs, the frequency of prayer and attendance reduced loneliness and anxiety, and thus promoted life satisfaction. Among 180 university students in Iran the higher level of religiosity was correlated with higher happiness (Samifar and Shakerinejad, 2014).

However, some scholars debate the positive association between religiousness and happiness. For example, Argyle and Hills (2000) found no significant correlation between average happiness of church members versus non-members, of those experiencing religious or mystical encounters versus non-experiencers, and of those whose experiences were intense versus those whose experiences were mild. As they argued, there was no significant relation between happiness and overall religious affect, but there was a modest association between happiness and the Immanent Factor 1 (which included items with a specifically religious connotation, such as "being at peace with God"). At the same time, this association between this factor and happiness was suggested to be more apparent than real. Examining a German student sample of 331, Francis, Ziebertz and Lewis (2003) similarly found no significant relationship between happiness (measured by Oxford happiness inventory) and religiosity (measured by Francis' scale of attitude toward Christianity) after controlling for personality.

Stolz (2009) analysed data from a Swiss phone interview study of 1562 adults and the Swiss data of the International Social Survey Programme from 1999 and concluded that when controlled for individual and canton-level background variables, although structural deprivation (i.e. low income and low education) was related positively to religiosity, subjective deprivation (unhappiness, social class identification) was not. Another study by Sillick, Stevens and Cathcart (2016) based on an online survey of a convenience sample of 124 adult respondents found no difference between the happiness levels of believer and non-believer groups.

Based on World Values Survey data from Denmark, the Netherlands and the USA in 2000, only an insignificant weak correlation was found in European samples between religiosity and life satisfaction by Snoep (2008). As she argued, while usually the positive effect of religiosity on happiness was implied universal, the wider social, cultural and institutional context should have been accounted for cross-national differences, as long as most studies evidencing the positive relationship were

conducted in the USA. She also stressed that the differences in the share of religiously committed people and in the significance of the social role of churches as well as in the level of geographical mobility should have been taken into account. Diener, Tay and Myers (2011), too, suggested that the link was present only in less well-to-do nations. In line with this, Cohen and Johnson (2017) also urges that diversity of religious contexts should be taken into account, which may influence how well-being, human flourishing or goals defined. They underline that in this regard, cultures and religious (sub)groups are heterogeneous.

Some scholars also qualify this assumed link by identifying either underlying factors or different dimensions of religiosity and well-being. Ross et al (2009) argue for the significance of the style of religious coping, i.e., self-directive, deferring, collaborative, or turning to religion. They assert that these influence the link between religiosity and psychological adjustment to adverse events, and consequently, those with high religiosity and high in self-directive coping (i.e. excluding God from coping and taking personal religiosity) will show lower life satisfaction and higher maladjustment.

Based on data from a non-representative large-scale online panel sample in the USA, Mochon, Norton and Ariely (2011) analysed the role of the strength of religiosity and religious group affiliation. Although positive relationship with several measures on well-being (and an even stronger one with control variables added) was present, in general they found no significant effect for most religious groups. As they concluded, only those with strong religious belief enjoyed higher subjective well-being, whereas the weaker faith negatively influenced well-being. As they argue, "the non-linear relation between religiosity and well-being suggests that many moderate believers would benefit from reducing their level of religiosity rather than increasing it. More generally, these results suggest that group memberships—even in groups offering clear benefits to members—can have psychological costs: When commitment wanes, individuals may be better off seeking new affiliations." (Mochon, Norton and Ariely, 2011, p. 12) Parallel to that, Monnot and Stolz (2016) also found that in Switzerland, positive effect of religious affiliation on well-being, even if slowly vanishing, was still present; however, it was available only for those closely related to religion and deeming it important, and for the needy (through its social services) and migrant population as well (through its importance in providing social connectedness).

Several scholars of the psychology of religion assert the significance of personality traits and emotions as mediating factors in the relationship between religion and subjective well-being. Van Cappellen et al (2016), for example, found empirical evidence suggesting the mediating role of self-transcendent positive emotions (awe, gratitude, love, and peace) experienced during religious service in a Belgian sample of church attending adults, and also that of meditation in a sample of university employees interested in meditation in the USA. No effect of other positive emotions (amusement and pride) were observed, however.

When looking into the empirical testing of the actual causal mechanism between religion and well-being worldwide using cross-sectional data from the Gallup World Poll, Graham and Crown (2014) found that different dimensions affected differing aspects of well-being, namely, hedonic and evaluative. Attending services affected both aspects positively, whereas importance of religion was significant only for the hedonic dimension. Its importance varied across countries of different levels of development (measured by income): those with higher income and education relied less on religion. In countries with higher income level, religion was important for experiencing happiness but insignificant for evaluating life. Social aspect of religion was an important positive contribution for the happiness of respondents with weak social network. Attending religious services had a modest negative effect to those with active social life. Christians (Catholics and Protestants alike) scored higher in happiness when living in Christian-majority societies. Muslims and Jews, in contrast, were happier in non-Christian majority countries. According to their argumentation, "the happiest are most likely to seek social purpose in religion, the poorest are most likely to seek social insurance in religion, and the least social are the most likely to seek social time in religion" (Graham and Crown, 2014, p. 24) In line with these, when examining the connection between depression and religiosity through data from the European Social Survey in 2012-2014, Van de Velde, Van der Bracht and Buffel (2017) experienced that depression was positively associated with frequency of prayer, negatively with frequency of service attendance, and negatively with religious salience (how religious are you) in regions with higher religiosity, but positively in regions with lower religiosity. At the same time, no effect of overall religious saliency on frequency of depressive symptoms was found.

### 2.3.4. Some explanations for the relationship between religion and subjective well-being

As a few of the already cited researchers has also pointed it out, many aspects of religiosity or, to put is so, several components of religious belief and practice can be assumed to contribute to subjective well-being. Below, I briefly review some relevant earlier research findings that, while evidence this link, also scrutinize the underlying mechanisms by focusing on particular dimensions of an assumed direct influence which provide plausible explanations.

#### *2.3.4.1 Religious content*

An already classical example of a proposed explanation that is based on the content of belief has been offered by Azzi and Ehrenberg (1975) who suggested that it was an expected afterlife reward gained through church attendance through which religious people gained a higher level of happiness compared to the non-believers. Contrary to their argumentation, Ferriss (2002) found by examining data from the General Social Survey in USA that happiness was associated with belief in the world being evil or good but not with the belief in afterlife. As Ferris asserted, community involvement was but one of the factors promoting quality of life and life satisfaction. According to this thought, to a degree, existing religious values in a culture determine what counts a "good life". However, he added that several elements of religiosity like praying, church service attendance and certain beliefs (belief in after-life or belief that world is good) also contributed to individual life satisfaction.

Based on the analysis of two large-scale European datasets, Clark and Lelkes (2006) concluded that religious people showed lower variation in life satisfaction, as belonging to all major denominations insured against stress from adverse life events like divorce or unemployment. Consequently, religious people both enjoyed a higher level of life-satisfaction and were somewhat protected against stressful events in life-course. In the case of divorce, however, Catholics were apparently less insured against depressing impacts insofar Catholic teaching considered believers to be punished rather than comforted. As to the reverse causality, at the same time, they did not find considerable evidence, however: data showed that adverse life events like widowhood or divorce affected religiosity (i.e. importance of belief and frequency of church attendance) to a little extent only, while unemployment had no significant impact on

that. Dehejia, DeLeire and Luttmer (2007) also evidenced that religious participation partly insured consumption and happiness against income shocks. Beard et al (2011) confirmed this insurance-like behaviour. Bruce et al (2005) added that especially those with exclusivist religiosity tended to view their religion more like a coping device.

As to certain elements of some particular religious teachings, some of them have also been proven to enhance well-being. For example, McCullough and Worthington (1999) observed that forgiveness, which was both a psychological construct and a transcendental religious concept, might promote mental, physical, and relational well-being. In a minor sample of university students in different countries, Fisher (2013) found that relationship with God positively accounted for variations in happiness measures. Hui et al (2014) scrutinized experiences deemed religious, and they found that the experience of unusual joy and peace during prayer and meditation improved the quality of life. However, tongue speaking or having prayers answered resulted no change in the quality of life, whereas being healed from serious physical illness could even have had negative consequences.

Studying elders and members of the Presbyterian Church in the USA, Bradshaw, Ellison and Marcum (2010) experienced that a secure attachment to God was inversely associated with distress, and at the same time, the insecure attachment was positively related to that. As to this latter, opposite direction, Ellison et al (2013) asserted that a troubled relationship with God or faith-related doubts led to worsened psychological health, especially among those with stronger belief. Wilt et al (2017) found that past and present religious and spiritual struggles negatively affected subjective well-being dimensions even with personality traits controlled. At the same time, while Janssen et al (2005) observed that religious persons having a symbolic attitude towards religion scored higher on positive aspects of mental health (well-being), they found no significant results for negative mental health (psychological distress).

This observed effect of religious content is apparently not limited to Christianity. In a minor convenience sample, Kennedy and Kanthamani (1995b) confirmed that experiencing paranormal and spiritual phaenomena positively affected well-being and the interest in spirituality. Berg (2008), too, suggested the apparent validity of this relationship in other religious teachings including new age. Ellison et al (2009) further identified a positive link between the spirituality of personal goals and subjective well-being. In a sample of secular Israeli Jews of 112 research participants, Lazar (2009) found significant relations between total life coherency, intrinsic values, and

experiential aspects of spirituality to be related to both depression and life satisfaction after controlling for religiousness. According to the research by Farooqi and Tariq (2012) among Muslim cardiac patients, faith in Allah was the strongest and only predictor of life satisfaction with a significant positive correlation.

Hall (2002) examined a particular aspect of well-being, namely spiritual well-being. He found a significant relationship between awareness of God and spiritual well-being, especially satisfaction and meaning in relationship with God. His results suggest that the quality of one's relationship with God is relatively independent of spiritual well-being or satisfaction with one's relationship with God and with life.

Opposing these findings, however, as Kennedy (1999) pointed out, feelings of guilt and fear of God supressed positive effect of importance of religiosity on happiness, as he observed it in a minor convenience sample. Schuurmans-Stekhoven (2011) surveyed 265 adult participants via a mailbox drop in two mid-size rural cities in Australia in 2007 and identified a direct negative effect of spirituality on psychological well-being. At the same time, only weak indirect effect was found using character strengths as moderators, but belief-as-benefit hypothesis was not supported.

What might partly explain these contradictions is a complexity of belief and faith. As for example Martos, Kézdy and Horváth-Szabó (2011) concluded, transcendental religious motivation (e.g. striving for spiritual communion with the transcendent) predicted indices of well-being positively, whereas normative religious motivation (e.g. following church norms) predicted well-being negatively.

#### *2.3.4.2 Purpose in life, meaning in life*

Role of meaning in life as an important contributor to well-being has been empirically justified convincingly. For example, among college students in the USA, Oishi, Diener, Suh and Lucas (1999) observed individuals differing in what kind of activities they found the most satisfying and what domains in life they valued success the highest. Related to that, it was highly varied across individuals which domain influenced their global life satisfaction the most. At the same time, Oishi, Diener, Lucas and Suh (1999) also pointed out that across cultures, needs and values both influenced which domain was most important in affecting life satisfaction. Namely, in nations with lower national income, effect of financial satisfaction was the most important, whereas nations with higher income, home life satisfaction had the strongest effects. Furthermore, esteem needs (as coined by Maslow) were the more

influential in individualistic than collectivistic nations. Oishi and Diener (2001) have also underlined importance of the national cultural context. They concluded that "independent goal pursuit did not enhance the positive effect of goal attainment on the well-being of Asians while amplifying the benefit of goal attainment on the well-being of European Americans … interdependent goal pursuit tended to increase the benefit of goal progress among Asians while diminishing the effect of goal progress among European Americans." (Oishi and Diener, 2001, p. 1680) In their validation study for the short form of the Meaning in Life Questionnaire in Chile, tested with 1997 participants, Steger and Samman (2012) experienced that meaning in life was medium to high correlated with general and domain life satisfaction and satisfaction of psychological needs (Relatedness, Autonomy, Competence).

As many researchers have confirmed, religion and meaning in life are associated. In an early study on the relationship between religious experiences and well-being, Kennedy and Kanthamani (1995a) found empirical evidence in a minor convenience sample for a theoretical model according to which transcendent experiences affected religious commitment, which then influenced meaning in life and well-being. That is, even though the causal direction remained unclear, meaning in life was a mediating factor between transcendent experiences, religious commitment, and subjective well-being. Steger and Frazier (2005), too, evidenced that meaning in life has been an important mediating factor in the relationship between religious behaviour and well-being, the latter being measured with life-satisfaction, self-esteem and optimism, probably because religious people, attending services, meditating, or reading about religious issues, gained a deeper understanding about the meaning in life.

Outcome of several studies suggest that within this link, life purposes or meaning in life, particularly those gained through religious practice or belief, are playing a key role as mediating factors in enhancing subjective well-being. For example, results based on German panel data by Headey et al (2010) confirmed the importance of consciously chosen long-term-set life goals in happiness, including goals of a religious nature. In this regard, genes and other stable traits appear to be basic elements providing a relatively smaller, yet significant place for life goals and other priorities. As they suggest, that is why people increasing their religious activities or choosing pro-social aims show a higher level of happiness. Diener, Tay and Myers (2011) found as well that, besides feeling respected and social support provided, religion contributed to happiness through purpose in life. In addition, Aghababaei and Błachnio (2014)

concluded that positive effect of religiosity on happiness was conveyed by purpose in life in a sample of Polish students. Even if with only a small number of disabled respondents in a follow-up study, Hayward (2014) observed that while income did not predict subjective well-being, meaning in life strongly correlated with it also controlling for religiosity. Grouden and Jose (2015) found, too, that presence of meaning was positively predicted by family and interpersonal relations, whereas search for meaning was positively predicted by personal growth and by religiosity or spirituality. Furthermore, meaning from family, interpersonal relationships, health, religiosity/spirituality and in life in general buffered against impoverished well-being when searching for meaning.

This relationship is by no means straightforward, however. Examining 18 social groups of older adults in the USA, Ardelt (2003) described that extrinsic religious orientation had a positive effect on fear of death and death avoidance, and intrinsic religious orientation was positively related to approach acceptance of death. However, the frequency of shared spiritual activities and religious affiliation were unrelated to subjective well-being but positively related to death avoidance and fear of death, and purpose in life rather than extrinsic or intrinsic religious orientation was positively related to elders' subjective well-being and negatively associated with fear of death and death avoidance. As the results by Francis, Jewell and Robbins (2010) from an older Methodist sample suggest, intrinsic religious orientation is linked whereas extrinsic and quest religiosity are unrelated with sense of purpose in life. Affrime (2011) confirmed that religiosity affected happiness through meaning of life and purpose in life, but no relationship between religiosity and other happiness dimensions was found among college students. Halama, Martos and Adamovová (2010) found no support for an overall positive effect of religiosity across nations: studying a Slovak and a Hungarian sample, religiosity was significantly related with meaning in life in both samples. At the same time, satisfaction with life and happiness were positively affected by higher religiosity in the Hungarian sample only, and no overall effect of personality traits was evidenced. Furthermore, in a Hungarian representative sample, Martos and Kopp (2012) evidenced that the positive effects of meaning in life and intrinsic life goals and negative effect of extrinsic life goals on subjective well-being were present in all social strata measured by income and subjective assessment of income status. However, higher religiosity was negatively related with subjective well-being and turned to be non-significant when control variables were also included.

At the same time, higher religiosity was positively related with meaning in life and intrinsic life goals and negatively with extrinsic life goals. Interestingly, in a study on adolescents from France, Germany, Poland and the USA by Sabatier et al (2011), it was found that the positive relationship between religiosity and life satisfaction was mediated by family orientation (measured by scales on harmony within the family, children's obligations and family interdependence).

To conclude, as it has been demonstrated in the review sections above regarding the effect of religiosity on material well-being, in some cases it has been proven that differing religious teachings promoted and perpetuated social differences. Moreover, as to the effect of religiosity on subjective well-being, it has been made clear that religious commitment contributed to subjective well-being either directly or indirectly through (1) belonging, thus preventing isolation and promoting personal agency; (2) compensating the experience of unfavourable social situation like poverty or unemployment; and (3) giving meaning and purpose of life. Although a strong correlation of religion and well-being is frequently assumed in the theoretical—and often evidenced in the empirical—literature, the question should be raised if there is a robust causal relationship between these two.

On the one hand, some features of religious practice apparently constitute a basis of a possible complex explanation. To name but a few, leading a life that is made meaningful by the teachings of one's religion or belonging to a community of like-minded fellows evidently raise the level of one's happiness or, at least, contributes to a higher level of subjective well-being when contrasted to that of the non-religious. Religions probably promote a healthier life-style and morally preferable decisions.

On the other hand, classical sociological theorists assumed religiosity to decline with modernization and thus a higher living standard and suggested that people with a higher-level education tend to be less religious. Some scholars have also added that network and group processes, together with previous socialization influences, make the religious phaenomenon a matter of social status, too. Thus, the question to be answered is whether a robust relationship can be evidenced in the contemporary European society even if the differing social and cultural settings are considered.

# 3. RESEARCH QUESTIONS AND HYPOTHESES

A sufficient length of overview has been provided above of both theoretical and empirical literature that there is an evident relationship between subjective and societal well-being and religiosity. This paper is focusing on the research problem whether religious and non-religious people in contemporary European countries differ regarding their subjective well-being. This general research problem can be itemized through the following research questions that this paper is intended to answer:

**Q1: What kind of relationship exists between personal religiosity and individual happiness?**
**Q2: What kind of relationship exists between societal level religiosity and individual happiness?**

It should be also asked whether diverse aspects of individual and societal-level religiosity (being affiliated with denominational groups, religious practice and congregational belonging) make people happier than unchurched respondents and whether social background and social involvement are equally important for the happiness of religious and non-religious people. To answer these, multi-variate statistical method is applied including indicators of religious identity, religious behaviour, social status and social involvement. I aim at testing the hypotheses as follows below.

## *3.1. Hypotheses about individual religiosity and happiness*

A positive relationship between personal religious commitment and subjectively experienced well-being has been observed in multiple contexts as also many of the above-cited studies have pointed it out. In their extensive literature review and statistical reanalysis of findings, Eger and Maridal (2015) concluded that religious engagement (mostly measured by community participation) found to be a significant correlate of higher well-being on the individual level. Colón-Bacó (2010) observed that both happiness and life satisfaction were positively related to attendance and prayer, and added he that the importance of religion in one's everyday life measured

by the frequency of prayer appeared to be such an important factor that in a regression model it even reduced the effect of the frequency of religious service attendance. As to non-Christian contexts, Campante and Yanagizawa-Drott (2005) found that while longer Ramadan lowered economic output, but, at the same time, promoted subjective well-being of Muslim believers. Aghili and Kumar (2008) found also positive relationship between religiosity and happiness of Iranian and Indian professionals, and a significant, yet weaker correlation between happiness and formal religious practice.

Based on these, it can be assumed that personal religiosity affects happiness positively. However, as Voas and Day (2010), studying secular Christians (i.e. those having a confessional identity without religious commitment and practice) underline, the actual strength of religious persuasion, identity and practice should be differentiated and may have separately identifiable effect. Furthermore, as Finke, Bader and Polson (2010) argue, different religiosity items can be deemed as measures of different aspects of religiosity and thus, they actually provide a more accurate and reliable result when measured together at the same time.

Following their argumentation, it can be added here, too, that as the variety of the previously reviewed literature (especially in Section 2.3.) illustrate, each aspects of religiosity have an impact on well-being in certain contexts – while, in other contexts sometimes, this effect is either non-significant or shows an opposite sign. Thus, in the following hypotheses I turn to the assumed influence of various aspects of religiosity. I should underline that throughout this research, these religiosity dimensions are assumed to have an individual influence on well-being even if related with each other and in practice, often being present together.

Ellison (1991) already evidenced the direct effect of the strength of belief. Studying a youth sample aged 13-15, Francis (2013) asserted that "implicit religion", i.e. belief in elements of Christian faith without explicit practice, contributed to purpose in life (which latter has been demonstrated above to enhance subjective well-being). In a non-Christian context, Francis, Yablon and Robbins (2014) found a more positive affect towards religiosity related with higher level of happiness among Israeli students even after personality differences controlled. The weak but positive correlation between religious attitudes and happiness was partially mediated by personality traits.

However, contrary to these, Bechert (2013) identifies only weak, but mainly positive relationship between religiosity and happiness and suggests a minor importance of belief compared to practice in most of the countries participating in the

International Social Survey Programme in 1991, 1998, and 2008. As argued, "in the majority of countries, it is rather religious involvement that is associated with happiness than pure, self-assessed religiosity. Being part of a religious community and taking part in their activities, be it religious services or other events, seems to be a more important factor for happiness than the existence or non-existence of pure faith. … The data outcomes support the thesis that very religious people are happier than nonreligious people in predominantly religious societies. However, in six out of eight secular countries, the religious minorities are happier as well." (Bechert, 2013, p. 70) Van de Velde, Van der Bracht and Buffel (2017) found no effect of overall religious saliency on frequency of depressive symptoms, and they presented that depression was positively associated with religious salience (how religious are you), in countries with lower religiosity. While in a Swiss household panel data the belonging to the Protestant denomination as well as churchgoing strongly and positively affected happiness, an ambiguous association was present between happiness and internal religiosity according to Steiner, Leinert and Frey (2010).

Thus, the link between faith and happiness cannot be deemed evident and it is worth testing. Based on the above findings, this hypothesis can be formulated:

**H1.1: The higher degree of religiosity contributes to happiness.**

Ellison (1991) observed a denominational variation in life satisfaction but not in happiness. Ferriss (2002) also found that observing different traditions significantly correlated with general happiness, varying by denomination. Steiner, Leinert and Frey (2010) also pointed out that belonging to the Protestant denomination strongly and positively affected happiness. Ngamaba and Soni (2018) also supported the importance of religious denominations as they experienced a significant variation in the level of subjective well-being across religions, with Buddhist and Protestant respondents exhibiting the highest level of happiness and Roman Catholic, Protestant and Buddhist people the highest satisfaction with life. As to an opposite direction, Fenelon and Danielsen (2016) described that disaffiliation lead to lower level of subjective well-being and worse health.

Based on these, this hypothesis can be formulated:

**H1.2: The belonging to a religious denomination is associated with a higher level of happiness.**

Another important aspect of religiosity is that of community which, in most of the traditional religions, can be experienced obviously by participating in communally organised religious occasions. On the one hand, Ellison (1991) suggested only an indirect effect of participation on happiness, that is, only through strengthening religious belief, and Bankston III (2002), too, was on the view that the consumption of religious goods meant the affiliation with a social network of people producing them, arguing that "Involvements in social interactions create reasons for beliefs that respond to demands." (Bankston III, 2002, p. 320) On the other hand, several researchers confirmed an individual effect of participating in a religious community on happiness. For a contemporary social setting, this impact has been theorized by Karner and Aldridge (2004) who argued as follows: "In the contemporary era of economic globalization, however, the disempowerment of the nation state and the disintegration of welfare systems have granted renewed relevance and urgency to the social and psychological "work" traditionally done by religion—including the provision of networks of sociality, solidarity, and meaning and of anxiety-coping mechanisms." (Karner and Aldridge, 2004, p. 23)

Ferriss (2002) observed that attendance was significantly associated with happiness. Steiner, Leinert and Frey (2010), too, found that churchgoing strongly and positively affected happiness. Petts (2014) proved that attending religious services with parents in late childhood effectively provided higher psychological well-being. Greenfield and Marks (2007) added that the effect of participation on psychological well-being was mediated by the strength of religious social identity, that is, how closely the respondent identified with being a member of a religious group.

Even though Colón-Bacó (2010) suggested that the frequency of prayer appeared to be such an important factor that in a regression model it even reduced the effect of the frequency of religious service attendance, VanderWeele (2017) showed that participation in religious communities was causally and positively associated with human flourishing, happiness and life satisfaction, mental and physical health, meaning and purpose, character and virtue, and close social relationships. There were stronger associations with flourishing for communal religious participation than for spiritual-religious identity or for private practices. According to Van de Velde, Van

der Bracht and Buffel (2017), the frequency of depressive symptoms was associated negatively with frequency of service attendance.

Based on these, this hypothesis can be formulated:

**H1.3: The higher frequency of attending religious occasions brings a higher level of happiness.**

For most traditional religions, a particular kind of personal devotion, most typically individual prayer, is among the central tenets, and it can be assumed to contribute to subjective well-being. However, evidence for this effect appears to be more mixed. Ellison (1991), for example, suggested only an indirect effect of personal devotion on happiness only through strengthening religious belief. While, according to Ferriss (2002), prayer was not significantly correlated with general happiness, Francis and Robbins (2009), studying English adolescents aged 13-15, observed that a more frequent prayer was associated with greater sense of purpose in life. Even though Colón-Bacó (2010) suggested that the frequency of prayer appeared to be such an important factor that in a regression model it even reduced the effect of the frequency of religious service attendance, Van de Velde, Van der Bracht and Buffel (2017) concluded that depression was positively associated with frequency of prayer.

Based on these, this hypothesis can be formulated:

**H1.4: The higher frequency of individual prayer brings a higher level of happiness.**

## *3.2. Hypotheses about societal religiosity and happiness*

Above I reviewed several findings about the significance of the personal importance of religiosity and the strength of faith. I turn now to the effect of overall religiosity of a country on individual happiness as, provided that individual religiosity contributes to individual happiness, it can be assumed that more religious – and thus, happier – people in a given social context will positively impact the happiness of all members of that society. Along this, Clark and Lelkes (2009), who assumed a local interaction of religious and non-religious people, diagnosed such a spillover effect of religiosity. Based on pooled European Social Survey data from 2003-2007, they concluded that,

regardless of the country, religious people were more satisfied with their life even when controlling for other socio-economic factors. The observed regional spillover effect resulted a higher level of life satisfaction of both religious and non-religious people in regions with a higher share of people religiously affiliated or praying more frequently. At the same time, the regional presence of a higher share of atheist of non-affiliated people affected the life-satisfaction of people negatively, and in the case again, that of believers and of non-believers likewise. The impact of the regional composition of denominations was less straightforward. They added that an intriguing aspect of the results "is that they avoid the typical endogeneity problems that plague estimation of subjective well-being equations. While my own happiness might lead me to go to church (to give thanks perhaps), my own happiness is far less likely to affect others' religious decisions." (Clark and Lelkes, 2009, p. 17) Traunmüller (2011) observed a similar effect with social trust as dependent variable by analysing data from the German Socioeconomic Panel study. In particular, a higher level of trust could be found among Protestants than Catholics, Muslims, members of minor Christian denominations, and non-affiliated, as well as residents of regions with Protestant majority regardless of individual affiliation. In a different context of a Facebook-experiment with Israeli participants, Ruffle and Sosis (2020) observed that both religious and non-religious respondents showed higher trust, altruism and prosocial behaviour towards members of a religious group than towards those of a secular one.

Furthermore, as is has been shown above in section 2.2.3, religious people tend to be more prosocial, and as a consequence, if more people are religious in a society, its positive consequence can be enjoyed by the non-religious members of that society, too. Stavrova and Siegers (2014) found that in societies where cultural norms enforced religiosity, religious orientation was related more to prosocial behaviour. This effect proved to be stronger in countries where religiosity was more a matter of personal choice.

Because of these, it can be assumed that the higher level of religiosity of a society affects individual happiness positively. Therefore, within this general hypothesis, first the following hypothesis can be formulated:

> **H2.1: The higher average level of religiosity within a society is associated with a higher level of individual happiness.**

Moreover, some scholars suggest that not only religious persuasion, belief or any particular religious practice but also denominational belonging itself contribute to happiness of also those out of any confessional communities. For example, Bjørnskov, Dreher and Fischer (2008) conclude as follows: "the results show that there is some significant impact of having a large group of a particular denomination in society on some groups. This result is particularly noteworthy as individual religious denominations have already controlled for, and regional dummies are included in the regressions. For this reason, at the societal level it is probably more suitable to think of these as 'aggregate religious denominations' in the form of specific 'cultural traits and norms' generated by the share of persons linked to a particular religious tradition." (Bjørnskov, Dreher and Fischer, 2008, p. 158)

Furthermore, it can be assumed that if in a society a larger share of people belongs to a particular confession, it creates a value community that might influence society in a wider context. Sagiv and Schwartz (2001), for example, argue as follows:

> „Congruity between people's values and their environment promotes well-being regardless of the particular values to which people ascribe importance. People are likely to experience a positive sense of well-being when they emphasize the same values that prevail in their environment, when they inhabit an environment that allows them to attain the goals to which their values are directed. Subjective well-being is likely to be undermined when there is low value congruence between person and environment. This applied to the cognitive as well as to the affective aspects of subjective well-being. … the impact of value environments on subjective well-being probably depends upon the relevance of the environments for a person's self-identity. The more important a given environment is for the person's self-identity, the stronger the impact that congruity with this environment will have on the person's well-being." (Sagiv and Schwartz, 2001, pp. 194-195)

A high presence of religion may take a form of having a higher share of religious people, that is, more religiously committed fellows in one's immediate social environment (like, e.g., family members). Petts (2014) also points out that attending religious services with parents in late childhood is proven to provide higher psychological well-being effectively, and thus, a more religious society can contribute to the well-being of non-religious people as well. In a study on Hungarian higher education students, Pusztai (2016) observed that religiosity and religious homogamy

of parents effectively contributed to a healthy structure and stability of families. At the same time, a higher positive influence on child-rearing activities could be observed as contrasted to that of educational attainment and occupational status of parents.

Based on these, these hypotheses can be formulated:

**H2.2: The higher rate of those belonging to a religious denomination within a society is associated with a higher level of individual happiness.**
**H2.3: The higher average societal frequency of church attendance contributes to a higher level of individual happiness.**
**H2.4: The higher average societal frequency of prayer contributes to a higher level of individual happiness.**

## *3.3. Hypotheses about the impact of individual and societal background on the effect of religiosity on happiness*

While assuming a robust effect of religiosity dimensions on subjective well-being, it should be taken into account that religiosity shows a variability across social groups defined by demographic and socioeconomic characteristics and by cultural contexts. These differences not only affect the shares of religious people in the groups examined may also influence how much religiosity in general is valued in a society and also the level of effect that religiosity bears on well-being.

Thus, the above hypotheses should be supplemented with the assumption that the effect of religiosity is depending on cultural context and social status. Below, therefore, I briefly review some further relevant earlier literature on these issues and articulate two hypotheses on them of a horizontal nature.

### 3.3.1. Individual demographic and socio-economic characteristics

Social status and demographic background are both evidenced in the literature to impact, and often to interplay with, personal religiosity. What is more, they can alter the effect of religion on subjective well-being. Below, I overview some of the important findings on these issues as a foundation of a relevant sub-hypothesis.

#### *3.3.1.1. Age, gender*

Even though it can be debated whether macro-level religious change is a consequence of between-cohort or within-life-course differences (age effect or cohort effect), still

variability of religiosity of diverse age groups is frequently observed. Voas and Doebler (2011) is on the opinion that personal religiosity shows a high degree of stability during life-course, and thus, secularization in Western Europe is a result of generational replacement processes. Contrary to that, Idler, Kasl and Hays (2001) asserted that religiosity showed stability or even increase by age, and although the frequency of church attendance declined, religious feelings, and strength and comfort gained from religion grew. In line with this, Hayward and Krause (2013) also found in a random sample of older adults in the USA tracked between 2001-2008 that frequency of, content of and belief about prayer changed by age. Relying on Hungarian panel data, Hegedűs (2008) observed both intra- and intergenerational change in the frequency of church attendance, where younger generations appeared to be somewhat more religious and by time passing, considerable shares of some cohorts became more actively religious, while a religious decline happened among members of the youngest and the oldest cohorts with a significant level of fluctuation in the mid-generations. Analysing data from an intergenerational longitudinal study in the USA spanning from early and older adulthood (in their early 30s and late 60s or mid-70s), Wink and Dillon (2002) concluded that spirituality increased significantly between late middle (i.e. mid-50s and early 60s) and older adulthood. They added that this was predicted by religious involvement and personality characteristics in early adulthood and subsequent experiences of negative life events. Based on a longitudinal study of adolescent health, Uecker, Regnerus and Vaaler (2007) observed a decreasing frequency of religious practice during early adulthood and a diminished importance of religion and disaffiliation from religion. They found that those who avoided college exhibited the most extensive patterns of religious decline, which was further accelerated by cohabitation, non-marital sex, drugs and alcohol use, but slowed down by marriage.

Nevertheless, using data from the 1970 and 2012 waves of the British Cohort Study, Voas (2015a) pointed out the large uncertainty in measurement, which made it hard to detect any genuine change. He also emphasized that there was a considerable unreliability in reported past and present affiliation. At the same time, he observed that a substantial proportion of teenagers who reported that religion was an important part of their lives became relatively unreligious adults. In another account of analysing the same data (Voas 2015b), he described that many individuals fluctuated back and forth between the religious and non-religious categories, making thus the boundaries

between them fuzzy. He added that the most evident changes were between age 16 and early adulthood. Also, as the results of a qualitative study on intergenerational change in religiosity in Hungarian context showed recently, life-course religious change, whether multidirectional or fluctuating, was more the norm than the exception. (Luxné Prehoda and Hámori, 2020)

In sum, religiosity is in an apparent interaction with age that in turn is related to happiness level. Therefore, it is necessary to control for its effect. Moreover, the differing religiosity by gender is also commonly observed in a Wester and Christian context, even if the explanation of this is still not evident. Miller and Stark (2002), for example, did not find support for the popular hypothesis that different gender socialization was underlying the gender differences in religiosity; however, the different risk-taking attitudes still apparently explained it. The inclusion of gender in the analysis also is therefore necessary.

#### *3.3.1.2. Socioeconomic status*

A wide range of literature has been presented above on the issue whether and how socioeconomic status might be linked with subjective well-being. Similarly, a number of research findings focus on the issue how religious persuasion or belonging are related with social status, and how this influences happiness.

Lelkes (2002), for example, reported religious people to have a consistently higher level of satisfaction: they seemed to have been less affected by the changes of their financial circumstances. For the religious, income appeared to be less of a source of satisfaction. The relationship between labour market status and subjective well-being was also very weak among the religious group. The coefficient on unemployment, for example, was not significant. People who were actively involved in religious activities showed higher levels of experienced utility, less influenced by the money they had, and less affected by economic change. In a Hungarian youth context, Gyorgyovich and Pillók (2014) observed, too, that while there was no difference between the incomes of religious and non-religious respondents' households, members of the former group were more satisfied and rated themselves higher in a social comparison.

Bradshaw and Ellison (2010), as well, suggested that while objective and subjectively experienced financial deprivation caused psychological distress, several aspects of religiosity acted in the opposite direction, thus providing a protective buffer against the deleterious impact of low socio-economic status. Within the studied adult

sample in the USA, this was the case with frequency of attendance and belief, but no clear relationship with prayer and meditation was found. Hoverd and Sibley (2013) have also suggested a buffering role of religiosity. Analysing data from New Zealand, they concluded that religious belonging produced no difference in happiness when respondents asked were living in better-to-do neighbourhood, whereas those having a religious persuasion and living among hard circumstances showed a much higher level of well-being compared to non-religious neighbours.

Gundlach and Opfinger (2013) found that market income and non-market income had a positive effect on happiness, whereas religiosity was negatively correlated with other factors of happiness for a constant level of happiness. At the same time, religiosity was positively correlated with happiness for constant levels of the other factors of happiness. Happiness was positively correlated both with religiosity and with income, but income and religiosity were negatively correlated. The authors thus suggested that the negative correlation between income and religiosity was due to a substitution effect. Moreover, this observed negative link could be empirically supported in many contexts: for example, higher educational attainment led to lower religiosity according to Canadian census data (Hungerman, 2014b). The assumed positive effect of religion can be conditional on either education or social status, as Ansari (2015) described, who observed that religiosity had an impact on the happiness on literate individuals but not on illiterate ones.

It also makes it necessary to consider social status that, as it has been explicated above in section 2.3.2., material well-being showed a variability across religions and denominations. Among others, Davis and Robinson (2001), Spenkuch (2017) or Jagodzinski (2009) observed that different denominations contributed to the persistence of various work values or ethics. Furthermore, Malka and Chatman (2003) evidenced that differing work orientations affected higher subjective well-being, job satisfaction and income on the long run differently.

#### *3.3.1.3. Physical health*

As Deaton (2008) underlines, “Without health, there is very little that people can do, and without income, health alone does little to enable people to lead a good life.” (Deaton, 2008, p. 69). Lama and Olsen (2016) also pointed out that while the most powerful effect on happiness was from social relations, the second most important was health, the latter of which was more important among those with lower subjective

well-being. These well justify the importance to account with subjective general health when scrutinizing subjective well-being. However, it is worth to review some of the relevant empirical findings about the link between health and religiosity as well.

By a metaanalysis of 42 studies, McCullough et al (2000) concluded that religious involvement was related with lower mortality. Ellison and Levin (1998) reviewed several studies on empirical findings and theoretical explanations and concluded that although methodological issues have needed to be solved, a large volume of research had evidenced religion as contributed to health through, e.g., promoting healthy behaviour, enhancing self-esteem, providing social support and raising well-being. McIntosh et al (2011) evidenced that spirituality and religion both independently predicted a higher health status after a collective trauma (attacks on 9 September 2001 in the USA) controlling for pre-event status. Hritcu (2015), analysing data of Eurobarometer from Central and Eastern Europe in 2011, observed that beyond age, gender and marital status, satisfaction with health status also affected life satisfaction. This effect was not varied significantly randomly by country, only the fixed effect was significant. George, Ellison and Larson (2002) explained this effect by potential psychosocial mechanisms like health behaviour, support gained through social relationships, self-esteem and self-efficacy as psychosocial resources, and belief structures such as sense of coherence. Sirven and Debrand (2008) analysed individual cross-section and panel data of Europeans aged 50 years old and over and living in 11 countries from the two waves of the Survey on Health, Ageing, and Retirement in Europe (SHARE) in 2004 and 2006. They found that social participation highly and positively influenced self-rated health, and a lagged effect was high on self-rated health and mental functioning. The literature reviewed by Koenig (2012) largely agree that people who are more religious or spiritual have better mental health and adapt more quickly to health problems compared to those who are less religious; both psychological and social factors as well as promoting health behaviour contribute to this relationship as previous scholarship concluded. Moreover, religiosity apparently buffers the impact of health problems on well-being. As Kirby, Coleman and Daley (2004) summarized their research, negative effect of worsened health on psychological well-being was moderated by spirituality among older adults.

Some evidence, however, suggest that the link can be assumed somewhat ambiguous. As Ferraro and Albrecht-Jensen (1991) point out, “religion’s effect may be both positive and negative, depending upon the aspects of religion considered.

Practice, in particular, is associated with better health status for younger and older adults alike, despite the fact that a conservative religious affiliation is negatively related to health. While neither of these effects is very strong, the religiosity effect is the stronger of the two". (Ferraro and Albrecht-Jensen, 1991, p. 199) Furthermore, Powell, Shahabi and Thoresen (2003) neither found evidence for a depth of religiosity and health link nor for that between religiosity or spirituality and faster recovery, but they added that for healthy people, church attendance was associated with lower mortality, and a lower risk of certain diseases was observed as well. Hall, Meador and Koenig (2008) demonstrated a weak and inconsistent relationship between religiosity measures and health outcomes. They warned against oversimplification and overgeneralization coming from theoretically unfounded and context-dependent measures of religiosity. In addition, they emphasized their concerns about mediating factors such as interpersonal relationship and social embeddedness, and that of causal direction. Analysing longitudinal data from a midlife survey in the USA from 1995 and 2005, Son and Wilson (2011) concluded that the relationship was not as robust as earlier studies suggested, and the association between family religiosity during childhood and health outcomes was mediated through individual psychological resources. In the outcome of their research, no evidence was found for a link between religious community support and physical health. At the same time, psychological and emotional well-being mediated the influence of home religiosity on physical and self-rated health. Psychological resources and religiosity did not affect chronic medical problems and health-related limitations in daily activities.

A possible interaction between the effect of religiosity and health can also be present. Based on panel analysis of African Americans, Levin and Taylor (1998) showed a strong and significant relationship between various measures of religiosity and well-being with a significant longitudinal bivariate relationship, which disappeared, however, when they controlled for lagged religious involvement, health or baseline well-being. Religion apparently contributes to well-being of people struggling with health problems as the study on a minor convenience sample by Kennedy, Abbott and Rosenberg (2002) shows: among cardiac patients, increased spirituality was associated with higher well-being. Also, as Kennedy et al (2003) concluded, among participants of a healthy diet program (non-randomly assigned to spirituality-related classes), those with increased spirituality showed higher level of subjective well-being. What is more, the religion—health link can be assumed to

impact also in the opposite causal direction. For example, Benjamins et al (2003) found that within aging population, more chronic physical health problems were associated with lower church attendance.

*3.3.1.4. Mental health*

Religion can be assumed to contribute not only to physical but psychological health as well. Levin (2010), for example, provides a massive empirical evidence present in literature on religion–mental health connection, which has proven statistically significant, replicated, and modest in magnitude. Joshi, Kumari and Jain (2008) reviews a substantial range of literature that confirms the religiosity-psychological health link in non-Christian cultures as well.

To name but a few research examples, Levin and Chatters (1998) found a significant, yet moderate positive effect of different religiosity measures on psychological well-being and physical health, even if controlled for sociodemographic background. Structural links were, however, somewhat inconsistent across different studied samples. Studying elderly Mexican Americans, Hill et al (2006) observed that a more frequent church attendance was associated with a slower decline in cognitive functioning. Hank and Schaan (2008) noticed that the frequency of prayer negatively correlated with several health measures like general physical health, mental health, self-perceived general health and functional limitations. Moreover, only minor cross-national variations were observed.

This link has been confirmed in other contexts as well. According to Vilchinsky and Kravetz (2005), among the religious and secular respondents (but not those having a traditional identity) within a Jewish Israeli student sample of 668, a weak but positive association was found between religious belief and psychological and mental health and a negative relationship with psychological distress, mediated by meaning in life but not mediated by social support from religious community. Also, as concluded by Momtaz et al (2011), belonging to a religious community or, more generally, being affiliated to a certain tradition effectively and significantly reduced the negative effect of isolation on psychological well-being of members of a Malaysian Muslim elderly sample.

The observed link can be explained by several functions of religiosity. Looking at a wider context, in their editorial reviewing articles within a special issue, Haslam et al (2009) outline some most important theoretical directions on how social identity

can affect (mental) health, through affecting attitudes and reactions to health syndromes and symptoms, health behaviour, providing social support, coping resources and clinical outcomes.

Some findings, however, suggest an ambiguity of this relationship. Janssen et al (2005), for example, concluded that although religious persons who had a symbolic attitude towards religion scored higher on positive aspects of mental health (well-being), but they found no significant results for negative mental health (psychological distress). In a sample of 565 respondents from a Canadian Jewish community, Rosmarin, Pargament, and Mahoney (2009) observed that global religiousness (i.e. affiliation, prayer and attendance) was unrelated to mental health functioning or lower anxiety, even though those with higher trust or lower mistrust in God reported lower depression and higher happiness. Ellison et al (2009) showed how negative interaction (criticism or high demands) in a congregation lead to higher level of psychological dysfunction. Schwadel and Falci (2012) conducted a phone survey in the USA with 1849 respondents, which revealed that overall, attendance was unrelated to mental health, but this relationship varied across denominations. At the same time, positive affect was not associated with attendance in any of the groups.

*3.3.1.5. Social relations and network participation*

While above, in section 2.1.3.4., I have presented a brief review of empirical evidence for social network participation affecting subjective well-being, it should be underlined here that community membership and participation in activities of faith-based communities is an important dimension of individual religious practice. As, for example, Brehm, Eisenhauer and Krannich (2004) point out, religious affiliation is strongly associated with social attachment. Ahuvia et al (2015) emphasize the need of integrating the collectivistic aspect of individual happiness through applying an interactionist perspective that explicitly takes the importance of social interactions into account besides internal (e.g. attitudinal) and external factors of individual happiness. Lamu and Olsen (2016) assert that the most powerful effect on happiness is from social relations. It is even more important that, according to the findings of Diener and Seligman (2002), the happiest 10% of examined people among university students in the USA had more social connections and romantic relationships, whereas higher religiosity was not typical. They add that social relationship is of key importance in

satisfaction with life, and at the same time, happier people tend to have more rewarding relationships with others. (Diener, Seligman, 2004)

Hill and Pargament (2003), reviewing advancements in the measurement of religion and spirituality in relation with psychical and physical health research, concluded that some measures like social support received from other fellows in the congregation were themselves psychological constructs and conceptually imply relationship with psychological well-being. Helliwell and Putnam (2004) presented that measures of social relations including family, workmates, civil activity, religious and community ties, as well as trust were all robustly and independently related to happiness both directly and mediated through a better health status. Moreover, as it is noticed by van Oorschot, Arts and Gelissen (2006), while social capital (measured by networks, trust and civism) across Europe is relatively homogeneously distributed, patterns of simultaneous accumulation of human, economic and social capital as well as socio-economic, gender-related and religious stratification can be observed. As they assert, "frequent churchgoers have more social capital … than people who attend church less, or not at all". (Oorschot, Arts and Gelissen, 2006, p. 165) This link is apparently conditional on time spent on activities within the religious group, as Emyr (2008), studying 720 cathedral congregation members in the United Kingdom, found. That is, those who invest more time in community participation enjoy higher religious social capital. As to an effect of the opposite direction, Fenelon and Danielsen (2016) proved that disaffiliation lead to lower level of happiness through losing community contacts.

Based on panel data from the USA in 2007—2008, Lim and Putnam (2010) suggested that religious community affiliation significantly affected happiness, regardless of denominational differences. They examined this relationship through ordinal logistic regression models, and concluded that it was not the religious content or private religious practice which proved to be the most important but the frequency of church attendance as a mediator of the influence of having like-minded close friends in the congregation. Religious identity measured by the importance of religion in one's life acted also as an intermediary effect: significance of having close friends from the congregation was higher for those having a strong religious identity. The underlying causes, as Lim and Putnam (2010) suggested, might be that congregational networks provided a plausibility structure for the religious content, and gave a wider societal meaning for one's religiously based moral and behavioural commitments, linking faith

members to a community wider that one's intimate relations. At the same time, religious occasions filled the friendly connections with shared experiences and meaning, while offering on the other hand a network of mutual support and communal security.

To explain this relationship between religiosity and social capital further, Graham and Haidt (2010) suggests that religion binds individuals into tightly bound moral communities, thus promoting social giving, integrating them as being religious and protecting them from threats. Krause, Ironson and Hill (2018) adds that higher frequency of attendance is associated with higher commitment, which in turn is associated with higher compassion, thus promoting helping others, which latter one is associated with happiness, as they observed in a nationwide sample in the USA. Lim (2016) asserts that, as noticed in the USA, religious people spend more time on Sundays with more pleasant activities, including being together with relatives and non-relative friends. At the same time, positive affect is higher among them also on other days. However, the difference in positive affect compared to the non-religious is not fully explained by differences in activities, thus, their feelings toward the activities done is probably also different.

Belonging to a faith-based community also contributes to a certain homogeneity of one's social network. As Scheitle and Adamczyk (2009) found, individuals as well as members in congregations holding exclusivist theological views tended to have more friends having the same religious persuasion. Olson and Perl (2011) also confirmed that religious homophily was present, yet the denominational composition of one's close friends, especially affecting that of non-congregational relationships, was affected by the religious composition of the geographical area.

At the same time, as Driskell, Lyon and Embry (2008) describes, there is an apparent trade-off between religious and civic activity, which may turn the religiosity – well-being link somewhat ambiguous. They assert that while religiosity's effect on civic participation depends on denominational belonging in the USA, in general, the frequency of church attendance reduces it, while other forms of participation promote it. Overall, the above presented empirical evidence justifies the inclusion of relevant measures of religious and non-religious social network in the analysis.

*3.3.1.6. Social capital: trust*

Helliwell and Putnam (2004) evidenced that among other measures of social ties, trust was related to happiness. Morrone, Tontoranelli and Ranuzzi (2009), regard trust "as a key component of social capital … Most definitions of trust are based on the concept of individual expectations and, in particular, on the confidence that others will act as we expect." (Morrone, Tontoranelli and Ranuzzi, 2009, p. 8) Reviewing previous empirical findings and testing survey data on a country-level aggregate, they conclude that trust is strongly and positively correlated with subjective well-being, health and mortality, and negatively correlated with income inequality. Freitag and Traunmüller (2009) differentiated particularised trust (i.e. trust in those close to individual) and generalised trust (i.e. in all other unknown strangers), adding that there was no clear-cut distinction between them in psychological dispositional and experiential foundations. Rather, there were certain domain-specific experiences and dispositions that could have taken a major role in the formation of them.

In relation with that, it should be pointed out here that religion provides experiences in both domains. Trust and religious community membership, by any means, is confirmed to be linked in the literature, even if the extent of this relationship is apparently conditional on denominational or sociocultural context. Analysing data from the German Socioeconomic Panel study, Traunmüller (2011) concluded that a higher trust could be observed among Protestants than Catholics, Muslims, members of minor Christian denominations, and non-affiliated, as well as residents of regions with Protestant majority regardless of individual affiliation. More frequent church attendance also enhances trust. Schnabel and Groetsch (2014), analysing data of the International Sociological Survey Programme in 2008, showed a significant cross-country variation in how religion affected social cohesion measured by individual horizontal and vertical trust. They observed that although church-state relationship mattered, regardless of denomination, community activity positively contributed to the level of trust. In Latin America, Brañas-Garza, Rossi and Zaclicever (2009) found that observance of a religion and Catholic affiliation were positively related with trust in people and in institutions. As to the interpersonal interactions, Tan and Vogel (2008) experienced through a trust game experiment that trusters trusted the more religious trustees, especially in the case of more religious trusters. Moreover, more religious trustees were found to be more trustworthy. As already cited above, in a Facebook-experiment with Israeli participants, Ruffle and Sosis (2020) observed that both

religious and non-religious respondents showed higher trust, altruism and prosocial behaviour towards members of a religious group than towards those of a secular one.

However, Sosis (2005) debates the overarching primacy of trust in religious communities, and argues that especially in isolating communities, those are rather structural measures of institutions like the effective punishment of cheaters or promotion of the value of trustworthy reputation than a high-level intra-group trust that contribute to the facilitation of collective action. Still, apart from this particular case, trust appears to be inherent in faith-based communities.

Because of all the aspects reviewed above, this hypothesis can be formulated:

**H3.1: The positive effect of religiosity dimensions on happiness varies by one's gender, age, education, income and health as well as social network participation on the individual and societal level.**

### 3.3.2. Country-level economic and socio-cultural context

According to earlier findings, between-country variation in well-being levels can be explained by societal level differences. For example, analysing data from the World Values Survey, Inglehart and Klingeman (2000) found a strong and significant connection between country-level subjective well-being and GNP. This relationship was confirmed by Lengyel and Hegedűs (2004) using GDP as an explanatory factor, even if not one of a linear nature, as between-country variance was different between countries grouped by Western European context or the post-socialist past.

According to Hritcu (2015), data from Eurobarometer in 2011 mirrored significant between-country differences in average life satisfaction. Fischer (2010), among others, emphasized that time-invariant country differences accounted for variability in well-being. Tov and Diener (2007) also observed cross-cultural differences in content and in correlates of subjective well-being (i.e. positive affect, negative affect, and life satisfaction) and concluded that attainment of culturally valued goals universally highly influenced well-being. Interestingly, although Burger et al (2015) asserted that 8,4% of between-country variance in happiness level was explained by genetic distance, but after controlling for geographical, economic, institutional and cultural conditions, the share of variance explained was significantly reduced.

That happiness and the level of economic development of a country are related has been lengthy explicated above in section 2.1.3.2. Easterlin (2013) suggested that full

employment and safety net policies raised societal-level happiness, and therefore, country context should be taken into consideration. Moreover, as Spruk and Kešeljević (2016) stated, economic freedom, measured by security of property rights, open markets and more limited government, resulted in higher happiness on the national level after controlling for income, inequality, unemployment, and life satisfaction. They also asserted that while national differences should be taken into account, institutional context could be deemed to be relatively stable through the analysed period. Contrary to this, however, Brulé and Veenhoven (2014) found that difference between rich nations' happiness level could have been explained more by individual attitudes (psychological freedom) than by actual freedom.

Ahuvia (2002) demonstrates a high level of between-country differences in happiness but low level of individual (within-country) differences in the income–happiness relationship. He adds that it can be explained by existing differences in consumption culture, and suggests that economic development brings about a more individualistic culture. The impact of economic development is, at the same time, intertwined with cultural characteristics: for example, as Budiman and O'Cass (2007) noticed, an excessive materialism lowered subjective well-being, whereas religiosity positively contributed to it in Indonesia. Stam, Verbakel and De Graaf (2013) also emphasized the role of the country cultural context. As they argued, the institutional features and modernisation characteristics were interlinked which may have interfered with the link between religiosity and work ethics. According to their findings, "within groups of countries with the same religious heritage, variation in the level of modernisation does not matter". (Stam, Verbakel and De Graaf, 2013, p. 285) Steel et al (2018) observed as well that in a society with cultural values emphasizing the importance of relationships, these features predicted happiness better than salary.

Cultural context of a country is also important in how religiosity contributes to subjective well-being and social processes in a wider sense. Lengyel and Hegedűs (2004) observed a direct positive impact of the Protestant dominance and the country-level average share of frequent church attendants on the average subjective well-being of a country, the latter one bearing the stronger effect. They also suggested that apart from the more religious part of a population showing a higher level of well-being, a more religious culture and a higher overall intensity of the religious practice affected the well-being of the society as a whole positively.

Kogan et al (2013) found that faith was positively related to subjective well-being particularly in nations characterized by the highest levels of uncertainty avoidance, which evidently played a role in determining faith's importance in psychological functioning. However, in nations where uncertainty avoidance was low, religion not necessarily played a role in explaining uncertainty to provide a peace of mind. Scheepers, Te Grotenhuis and Van Der Slik (2002) studied moral attitudes concerning abortion, homosexuality and non-marital sexual intercourses based on data from the International Sociological Survey Programme in 1991. They observed that respondents who were more religious and those having a more religious upbringing showed more conservative moral attitudes, but this association was contingent on the country context. Namely, influence of religiosity was stronger in more religious and weaker in more secularized cultures. As Hayward and Elliott (2014) concluded, positive effect on health and well-being was evident only in countries with high level of religious freedom, and even more so in countries where religiosity was culturally normative. Thus, positive association between religion, health and well-being was not universal but contextual on the societal position of being religious.

Apparently, not only culture, but also economic development, and even a different religious composition can influence this kind of role of religiosity. Diener, Tay and Myers (2011) proved that in more affluent nations, role of religion was lower, that is, religious people there did not enjoy higher subjective well-being than the non-religious. As Sabatier et al (2011) found, the positive association between religiosity, family orientation and life satisfaction was stronger in countries with higher religiosity and family orientation. According to Stavrova and Siegers (2014), moreover, in societies where cultural norms enforce religiosity, religious orientation is related more with prosocial behaviour, while this effect is diminishing or disappearing in countries with cultural obligation for religiosity. Notably, Edling, Rydgren and Bohman (2014) observed in a Swedish context that in a country with low individual religiosity, religiousness did not count much in happiness among the studied young groups.

Remarkably, the level, the situation and the composition of religiosity is also varying across countries. The theoretical and empirical literature on this issue is vast and way beyond the scope of this current research; section 2.2.1. provided only an outline of the most relevant directions of the research. While, based on a research into the religiosity of Central-and Eastern-European countries, Pickel (2011) has debated the relationship between levels of de-churching and emphasized historical and

political contextuality, Müller (2011) evidenced that cross-country variations in social and economic trajectories might at least partly explain differences in trends of religiosity in Europe. Analysing data from the Religious and Moral Pluralism study, Storm (2009) identified types of fuzzy fidelity through cluster analysis, namely, the moderately religious, passive religious, belonging without believing, and believing without belonging types. She concluded that national differences in the share of different religious groups existed. Lasinska (2013) observed that while in Central- and Eastern-Europe an increasing Eastern Orthodox affiliation contributed to increased political participation, contrary to Western findings, Protestant affiliation decreased participation, underlining importance of taking country context in account. As Molteni (2017) suggested, the background of such a variety probably is that a country's religious tradition determines how the society's culture and its relation to religiosity develops. Because of these, this hypothesis can be formulated:

**H3.2: The positive effect of religiosity dimensions on happiness time-invariantly varies in different country-level religious and economic contexts.**

### 3.3.3. Some notes on the problem of endogeneity and causal direction

As it has been summarized above regarding the effect of religiosity on well-being, in some cases it has been proven that differing religious teachings promoted or perpetuated social differences and religious commitment contributed to subjective well-being. It is unclear if a relationship in the opposite direction exists and if so, what kind it is. Lyubomirsky, King and Diener (2005), for example, already raised the issue that not only success and favourable life conditions lead to happiness, but happiness also lead to success in life. Dolan, Peasgood and White (2008) have admitted that this issue needs further research. Lim and Putnam (2010) has underlined that the direction of the causal relationship between happiness and participation in a religious community was not self-evident. Kogan et al (2013) have also admitted that this issue needed further scrutiny: faith was positively related to subjective well-being, however, the direction and mechanism of an assumed causal relationship remained unclear. To put it in other way, it is still unclear if religious communities have a priority in providing more happiness for believers or if there is a kind of positive selection for religious communities among those who tend to expect more happiness in life anyway.

However, as to the individual-level endogeneity problem, Sander (2002) has already proven the presence of causal relationship between religiosity and the level of education and the lack of the opposite causal relationship. Headey et al (2010) showed on German panel data that people becoming more religious over time gained long-term growth in life satisfaction, whereas those becoming less religious have become less happy on the long run. Based on panel data from the National Survey of Families and Households in the USA, Childs (2010) evidenced by using structural equating that church attendance had a greater effect on happiness than happiness on church attendance. Studying elderly people in 11 different countries, Sirven and Debrand (2008) found that social capital correlates of religiosity positively affected self-rated health, while, using instrumental variable method, the opposite relationship could not be evidenced. Analysing data from the German Socioeconomic Panel study, Spenkuch (2017) found that Protestantism affected individual values, resulting longer work hours but not higher wages per hour, and thus, contributing to a higher income earned; an instrumental variable approach made it clear that the assumed causality was real.

As to the reverse causality, Clark and Lelkes (2006) did not find considerable evidence. Schnabel and Groetsch (2014) suggested that, because of observed denominational differences, it was religion that contributed to trust and not to the opposite direction. Hungerman (2014a) tested if religious proscriptions influence behaviour or vice versa, and clearly confirmed the causal direction. Graham and Crown (2014) scrutinized if religious people were happier or happier people were more religious. By quantile regression, they concluded that the opposite causality was true only for the happiest people, but at the same time, denominational affiliation had a negative sign for them. Thus, apparently they were religious more in a spiritual and emotional sense besides a possible denominational affiliation. However, religion had an evident positive effect among all other segments of studied populations. Bryukhanov and Fedotenkov (2021), too, evidenced a positive effect of religiosity in their study on a Russian household panel using an instrumental variable approach, and in this way, they excluded the potential endogeneity issue. Furthermore, based on a time-lagged multilevel regression of a combined dataset from the European Values Study and the World Values Survey, Ruck, Bentley and Lawson (2018) proved on a societal level that secularization preceded economic change in the end of the 20$^{th}$ century. Thus, building on both these empirical results and the theoretical tradition, in the present research I focus on this more evidenced side of relationship.

# 4. METHODOLOGY

Below, I provide some details on the method of analysis. First, I briefly present the model building strategy and argue for the benefits of a systematically built multilevel regression modelling. Then I turn to the dataset examined and the variables included in the analysis in sections 4.2 to 4.3. Finally, I return to the analytical strategy, which is to be expounded in more details in section 4.4.

## *4.1. Overview of the method*

The research is aimed at carrying out a multivariate secondary analysis of a cross-national longitudinal database including variables of contemporary European religiosity and well-being. Database, indicators and analytical strategies are to be introduced below, and in more details throughout sections 4.2 to 4.4.

The models to be presented in the following are composed with subjective happiness as the dependent variable and degree of personal religiosity as the primary independent variable included. Later on, other religiosity variables are added to the model to see if other religiosity measures than the subjective degree of religiosity have a significant impact on subjective happiness. After adding the key independent variables of religiosity to the baseline model, individual level socio-demographic control variables are added to check whether religiosity remains a significant explanatory variable. Scheepers, Te Grotenhuis, and Van Der Slik (2002) apply a similar systematic model building approach. Dolan, Peasgood and White (2008), too, propose to introduce variables systematically in different models: "Different findings may also arise due to the inclusion of different control variables, e.g. both coefficient size and significance levels are often not robust to the inclusion of health. Moreover, many papers only include a full model without showing the impact of including different variables upon the relationship between the main independent and dependent variables. A greater understanding of the robustness of relationships could be gained if variables are systematically introduced into different models." (Dolan, Peasgood and White, 2008, p. 111)

A considerable range of earlier research with similar methodological approach – i.e. the effect of religion as a multidimensional concept on well-being, controlling for individual and societal-level background factors and country context – has been reviewed already in the above sections. Here, only the most relevant ones are listed to illustrate their variety.

Ellison et al (2001), studying the influence of religiosity measures on psychological well-being, applied ordinary least square regression introducing variables in a similar, systematic manner. A similar direction with somewhat different approach is that by Clark and Lelkes (2009), who analysed the first three waves of the European Social Survey focusing on the three major denominations, and by an ordered logit regression, examined the relationship between individual and regional religiosity and life satisfaction, controlling for a range of sociodemographic background variables.

As religion influences both on the micro- and macro-level, Jagodzinski (2009) proposes to apply multilevel analysis. Thus, contrary to the above-cited solutions, in the present analysis, multilevel linear regression modelling is applied. Again, a set of relevant empirical papers have been reviewed above, therefore, the following part is limited only to some important ones with considerably relevant methodological insights.

Haller and Hadler (2006), showing how inspected factors, including gender, age, income, health, satisfaction and income and religious attendance were related with life satisfaction and happiness based on World Value Survey data from 1995-7, conducted a multilevel regression analysis to appropriately distinguish the individual and country level effects. Using data from the same study in a different period (1997-2002) to scrutinize the effect of different religiosity dimensions on life satisfaction, Okulicz-Kozaryn (2010) also applied multilevel method to account for the fact that individuals were nested within countries, although the random effect was not tested or communicated, only cross-level interaction was included in the models. He used this approach in a similar manner in some later, developed versions of this research with a slightly altered focus (Okulicz-Kozaryn, 2011; 2012), however, neither cross-level interaction, nor random slope was tested, nor denominations distinguished. Furthermore, the author left the time dimension uncontrolled, and several further religious measures available were not tested. Two-level hierarchical regression (people nested within countries) is used in a similar manner on a combined dataset from the World Values Survey and the European Values Study by Stavrova,

Fetchenhauer and Schlösser (2013) and van Hoorn and Maseland (2013) as well to reveal the effect of the country-level context.

Analysing 2008 data from the European Values Study, Stam, Verbakel and De Graaf (2013) conducted a multilevel analysis in order to explain country differences and distinguish between composition effects and effects of country characteristics. Based on data from Eurobarometer in 2011, Hritcu (2015) presents significant between-country differences in average life satisfaction by two-level multilevel method. Van de Velde, Van der Bracht and Buffel (2017) examined data from the European Social Survey in 2012-2014 applying a three-level multilevel model to see the influence of country-level and regional level characteristics on the connection between depression and religiosity.

In the grouping of cases, I follow a method similar to that of Aarts et al (2010). Grouping variables are country and year of survey (i.e. year of respective ESS round). Data of individual respondents are nested within study (ESS round in studied country) and studies are nested within countries.

## *4.2. Database*

For the analysis, the aggregated database of the first seven waves of the European Social Survey (ESS) is used. It measures the attitudes, beliefs and value patterns of diverse populations in more than thirty nations, and includes religiosity and subjective well-being measures in its core module surveyed within all rounds. As this survey has been conducted in every 2 years since 2002, it provides a good basis for time series comparison. All consecutive waves of this cross-national longitudinal survey contain relevant information on religiosity and subjective well-being. A detailed overview of the design, contents and methodological underpinnings of the ESS with a focus on questionnaire design and development, sampling procedures, and data collection can be found in Schnaudt et al (2014).

For this analysis, the pooled dataset of the first seven rounds are examined from 2002 to 2014. Altogether, 25 surveyed countries are included where data from at least four waves are available. Germany is included with separating the samples from the old and new federal states. Unweighted number of respondents in samples by ESS rounds are presented in *Table 1*.

Even though more recent data of later ESS rounds, i.e. round 8 from 2016 and round 9 from 2018 has become already available, these have become fully public only after finalizing the current analyses. As long as already a sufficiently long time period (more than a decade) has been covered by the present research, and as it cannot be expected that apparent and significant changes would happen concerning the primarily scrutinized relationships (partially evidenced by my results, too), I deemed it unnecessary to recalculate the full analysis with the inclusion of more recent data. However, it will be worth in future research to check how more recent global events like, e.g., the COVID-19 pandemic, affect my findings of a primary concern.

***Table 1*: Unweighted number of respondents in samples by ESS rounds**

| | **ESS round 1** | **ESS round 2** | **ESS round 3** | **ESS round 4** | **ESS round 5** | **ESS round 6** | **ESS round 7** |
|---|---|---|---|---|---|---|---|
| Austria | 2257 | 2256 | 2405 | | | | 1795 |
| Belgium | 1899 | 1778 | 1798 | 1760 | 1704 | 1869 | 1769 |
| Bulgaria | | | 1400 | 2230 | 2434 | 2260 | |
| Cyprus | | | 995 | 1215 | 1083 | 1116 | |
| Czech Republic | 1360 | 3026 | | 2018 | 2386 | 2009 | 2148 |
| Denmark | 1506 | 1487 | 1505 | 1610 | 1576 | 1650 | 1502 |
| Estonia | | 1989 | 1517 | 1661 | 1793 | 2380 | 2051 |
| Finland | 2000 | 2022 | 1896 | 2195 | 1878 | 2197 | 2087 |
| France | 1503 | 1806 | 1986 | 2073 | 1728 | 1968 | 1917 |
| Germany (Eastern part incl. Berlin) | 1098 | 1019 | 1040 | 967 | 1056 | 1010 | 1001 |
| Germany (Western part without Berlin) | 1821 | 1851 | 1876 | 1784 | 1975 | 1948 | 2044 |
| Greece | 2566 | 2406 | | 2072 | 2715 | | |
| Hungary | 1685 | 1498 | 1518 | 1544 | 1561 | 2014 | 1698 |
| Ireland | 2046 | 2286 | 1800 | 1764 | 2576 | 2628 | 2390 |
| Netherlands | 2364 | 1881 | 1889 | 1778 | 1829 | 1845 | 1919 |
| Norway | 2036 | 1760 | 1750 | 1549 | 1548 | 1624 | 1436 |
| Poland | 2110 | 1716 | 1721 | 1619 | 1751 | 1898 | 1615 |
| Portugal | 1511 | 2052 | 2222 | 2367 | 2150 | 2151 | 1265 |
| Russia | | | 2437 | 2512 | 2595 | 2484 | |
| Slovakia | | 1512 | 1766 | 1810 | 1856 | 1847 | |

| | ESS round 1 | ESS round 2 | ESS round 3 | ESS round 4 | ESS round 5 | ESS round 6 | ESS round 7 |
|---|---|---|---|---|---|---|---|
| Slovenia | 1519 | 1442 | 1476 | 1286 | 1403 | 1257 | 1224 |
| Spain | 1729 | 1663 | 1876 | 2576 | 1885 | 1889 | 1925 |
| Sweden | 1999 | 1948 | 1927 | 1830 | 1497 | 1847 | 1791 |
| Switzerland | 2040 | 2141 | 1804 | 1819 | 1506 | 1493 | 1532 |
| Ukraine | | 2031 | 2002 | 1845 | 1931 | 2178 | |
| United Kingdom | 2052 | 1897 | 2394 | 2352 | 2422 | 2286 | 2264 |
| ESS rounds total | 37101 | 43467 | 43000 | 46236 | 46838 | 45848 | 35373 |

## *4.3. Variables*

The key variables of the analysis are summarized in *Table 2* below. Control variables included social-demographical background (gender, age, subjective perception of income status, and school attainment) in seven waves included in the research. See Rydland, Arnesen and Ostensen (2007) for guidelines and data sources on this issue.

***Table 2*: ESS variables in the examined models**

| *Dimension* | *Indicator* |
|---|---|
| ***Subjective well-being*** | How happy are you |
| | Subjective general health |
| ***Religiosity*** | Belonging to particular religion or denomination |
| | Religion or denomination belonging to at present |
| | Ever belonging to particular religion or denomination |
| | How religious are you |
| | How often attend religious services apart from special occasions |
| | How often pray apart from at religious services |
| ***Social participation*** | How often socially meet with friends, relatives or colleagues |
| | Most people can be trusted or you can't be too careful |
| ***Socio-demographic background*** | Gender |
| | Age of respondent, calculated |
| | Years of full-time education completed |
| | Feeling about household's income nowadays |
| ***Technical variables*** | Country |
| | Place of interview: East, West Germany |
| | ESS round |
| | Post-stratification weight including design weight |

### 4.3.1. Dependent (outcome) variable: measure of well-being

As to subjective well-being measures, a sufficiently close theoretical designation of what constitutes well-being and how its diverse understandings can be categorized has been lengthily presented in the literature review section 2.1.2. It seems suffice to follow here the argumentation of Taylor (2015) in considering the indicator used as reliable marker of well-being. As I argued in section 2.1.4, happiness is a proper indicator for the present purpose and it has been included as a core variable in all analysed waves of ESS. Thus, as a dependent variable, subjective well-being is measured by the response given to the question "How happy are you?". The variable is an 11-point scale scored between 0 and 10, 0 meaning "Not at all happy" and 10 "Very happy". Weighted score averages, standard deviances and numbers of valid cases by country and time are summarized in *Appendix 1*.

Heine et al (2002) point to the problem that cross-cultural studies using subjective Likert-scales might bias results because of social comparison effect – people of different cultures, even if living in the same countries, regard different groups as references when expressing opinions. Contrary to that, however, it can be argued that the current study is scrutinizing a rather similar cultural context within Europe. Moreover, it is doubtful if there is any more objective scale available measuring the level of happiness. Thus, for the current study it is sufficient to test if religious people deem themselves happier than their reference group. Notably, Helliwell et al (2010) evidenced that cross-national differences in self-reported well-being were due to differences in the socio-economic differences and not due to different well-being concepts.

It is remarkable that, according to Kroh (2006), the 11-point satisfaction scale improved the quality of subjective well-being data as experimental results from the German Socioeconomic Panel study showed. Furthermore, Ferrer-i-Carbonell and Frijters (2004) confirmed that assuming cardinality or ordinality of a happiness measure made no statistical difference; thus, it seems justifiable to use this item as a variable of a higher measurement level.

*Figure 1* and *Figure 2* below present weighted country average happiness scores by ESS round for comparison (for the sake of transparency, I present Western European countries and Eastern European countries with Greece and Cyprus on two separate graphs). As it can be observed, average happiness shows an apparent variability between both countries and ESS rounds. Univariate ANOVA Tests of

Between-Subjects Effects show a significant difference between countries and time points, $F(160) = 253{,}214$, $p < {,}001$, R Squared = 0,119 (Adjusted R Squared = 0,118).

Another candidate as an indicator of subjective well-being would be "How satisfied with life as a whole". Running the models presented below (but not discussed in detail because of space limitations) with including this one as the outcome variable and the same explanatory variables resulted in very similar possible interpretations, what is by no means surprising given the strong correlation between this and "How happy are you" (Pearson's $R = 0{,}710$, $p < 0.01$). However, these models all resulted in a poorer fit considering AIC and –2LL values.

Several other variables measuring subjective well-being are included in all rounds of the ESS surveys, some of them having, however, a considerable share of missing cases. Variable "How satisfied with present state of economy in country" has 2,5%, "How satisfied with the national government" has 4,1%, "How satisfied with the way democracy works in country" has 4,3% and "Satisfaction with state of health services in country nowadays" about 5,4% of total cases missing. Besides these being more focussed on specific societal domains, this makes these variables less appropriate for using them as either dependent or independent variables or variables for principal component analysis to create a complex measure of general satisfaction, at least from a statistical point of view.

### 4.3.2. Independent (explanatory) variables: measures of religiosity

As to religiosity measures, the available data included in the surveys gives a certain limitation to the analysis. However, as it has been expounded in the literature review section 2.3.3, the relation between these indicators and well-being has been statistically evidenced for many instances.

As a key independent variable, the question "How religious are you" is used. The variable is an 11-point scale scored between 0 and 10, 0 meaning "Not at all religious" and 10 "Very religious". Weighted score averages, standard deviances and numbers of valid cases by countries and time points are summarized in *Appendix 2*. *Figure 3* and *Figure 4* below present weighted country average religiosity scores by ESS round for comparison (for the sake of transparency, I present the same set of countries on two separate graphs).

***Figure 1*: Mean happiness by samples, 0 to 10 scale, Western European countries**

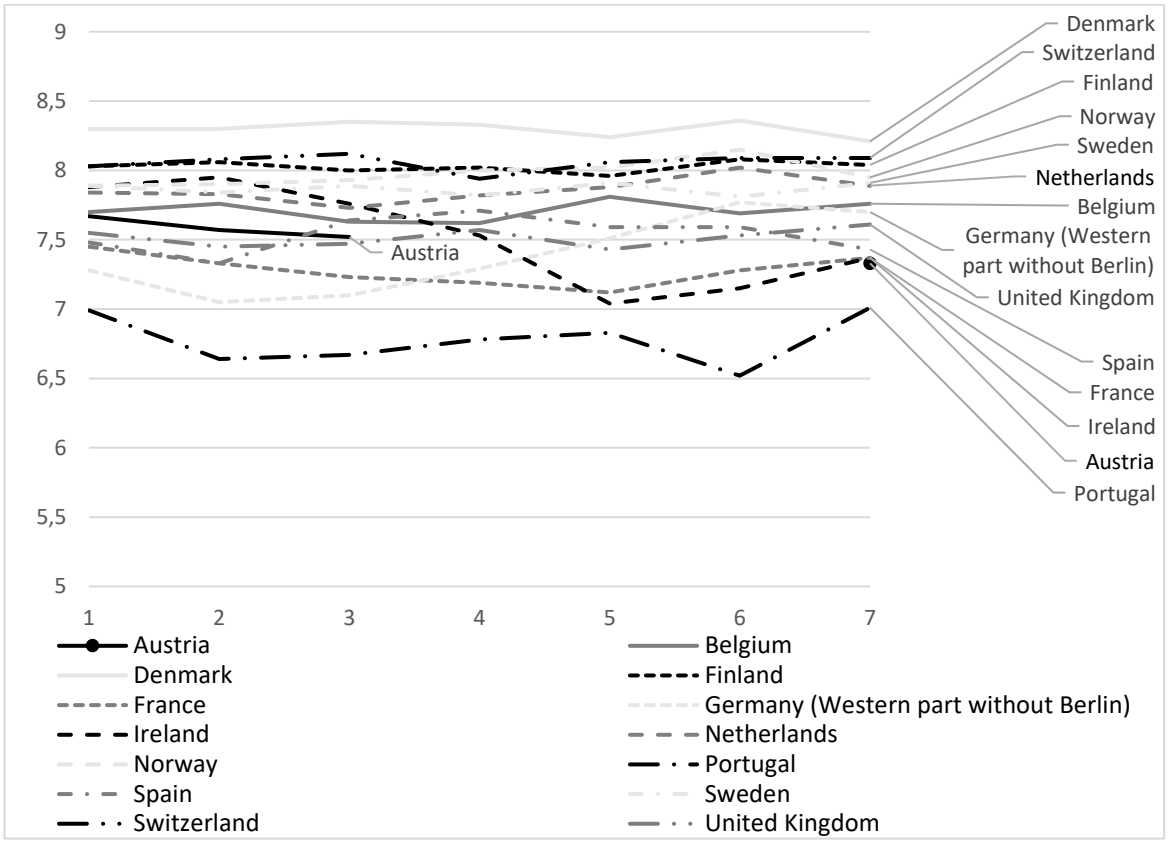



***Figure 2*: Mean happiness by samples, 0 to 10 scale, Eastern and Southern European countries**

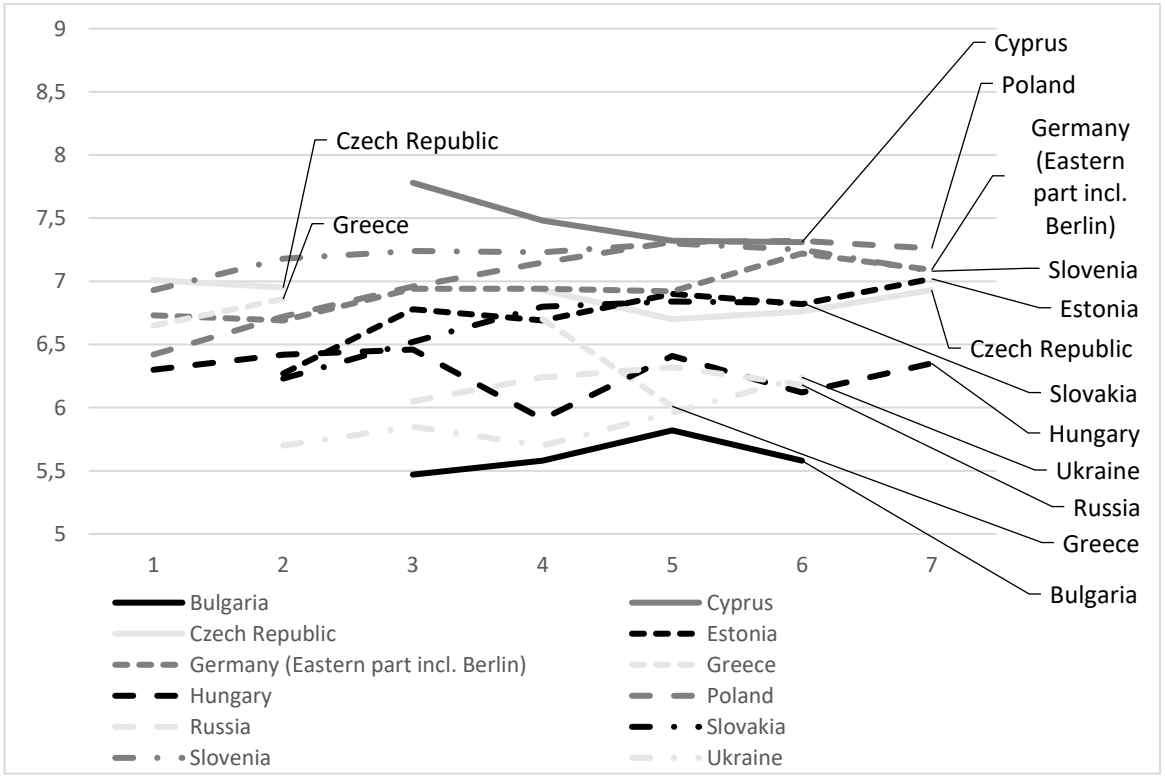


***Figure 3*: Mean religiosity by samples, 0 to 10 scale, Western European countries**

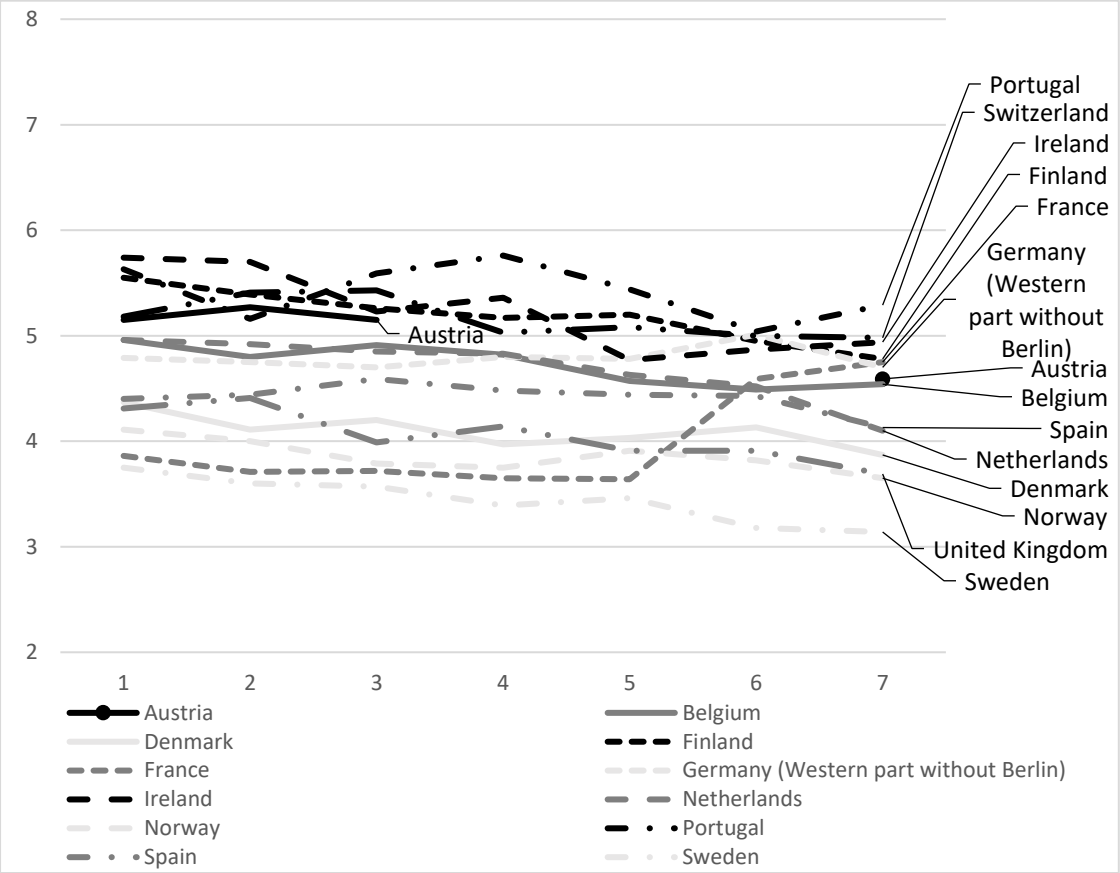
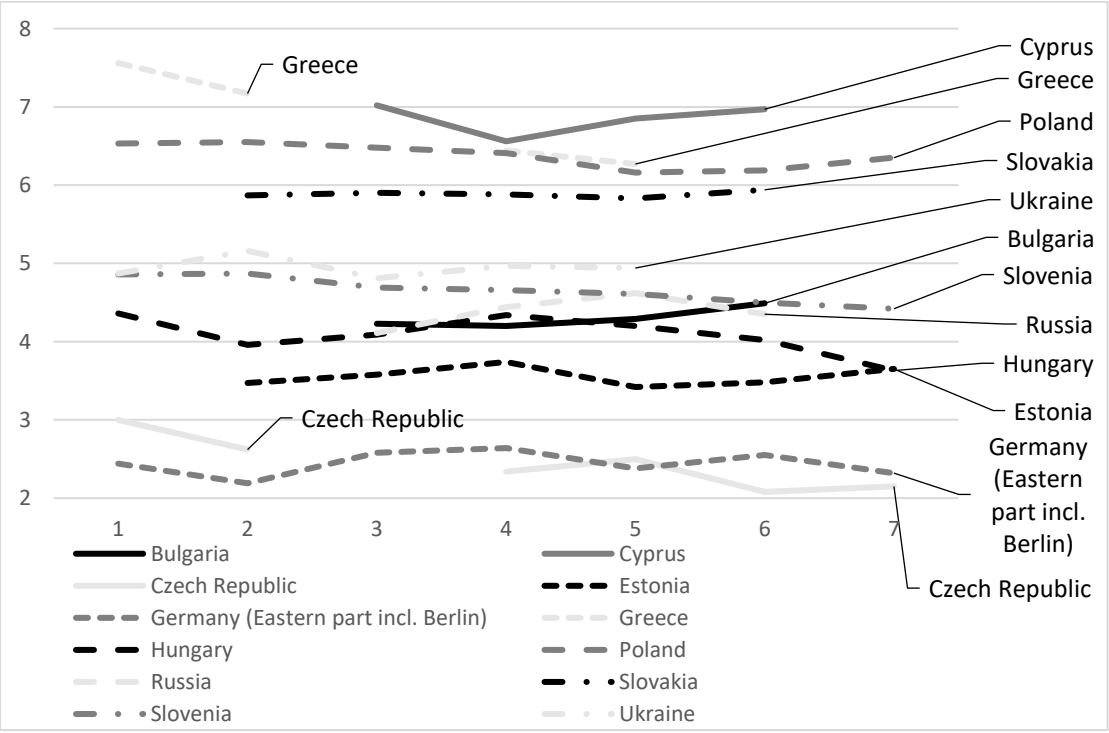



***Figure 4*: Mean religiosity by samples, 0 to 10 scale, Eastern and Southern European countries**



Other religiosity measures will also be included as control variables in more complex models to control for various aspects of personal religious practice beyond the degree of religiosity. Namely, denominational belonging, the frequency of attending church services and the frequency of prayer are generally recorded in the ESS. Variable "How religious are you" shows a high significant correlation with other religiosity measures, i.e., "Belonging to particular religion or denomination", "How often attend religious services apart from special occasions" and "How often pray apart from at religious services" Spearman's rank correlation values range between 0,56 to –0,71, all values significant at the 0,001 level. *Appendix 3* presents all two-way correlations between each combination of variables. (Negative values in the table are a result of the response value schemes.) My choice of using the variable "How religious are you" as a primary explanatory variable is based on (1) that this item is constructed at the highest possible measurement level: the 11-point scale is sufficient to consider it an interval scale, thus, appropriate for being used as a covariate in a multilevel model. Moreover (2) theoretically, this is a variable that is appropriate to measure religiosity in a wider sense, i.e., independently of traditional rituals and institutional affiliation, which type of religiosity has become more typical of the contemporary European cultural setting. As long as their correlation is not perfect, multicollinearity in a strict sense is not an issue when including all religiosity measures in the model; this issue will be detailed below.

To avoid extremely small number of cases in denominational categories, "Jewish", "Eastern religions" and "Other religions" in the original variable "Religion or denomination belonging to at present" have been merged as "other". An additional "Denominational belonging only in the past" category has been added using the merged values from the variable "Religion or denomination belonging to in the past", concerning those not belonging to a church anymore at the time of being surveyed.

Response categories of the variables "How often attend religious services apart from special occasions" and "How often pray apart from at religious services" have been transformed to time scales. That is, the original frequency categories used in the questionnaire (Every day; More than once a week; Once a week; At least once a month; Only on special holy days; Less often; Never) have been recalculated into a numeric variable approximating the number of days in a year practicing the respective religious activity. (Never = 0; Less often = 1; Only on special holy days = 2; At least once a month = 15; Once a week = 52; More than once a week = 75; Every day = 365)

To give an overview of these religiosity-related explanatory variables, sample means are presented in *Appendix 4*.

### 4.3.2. Control variables: socio-demographic background and country context

In models that are more complex some key demographic background variables are controlled. These are gender (categorical variable with two values), age (calculated from year of survey and year of birth, weighted grand mean centred for multilevel analysis using post-stratification weight including design weight, pspweight), years in full-time education completed (weighted group-mean centred using pspweight), feelings about present household income (categorical variable with four values) and subjective health status (categorical variable with five values). To give an overview of these socio-demographic and socio-economic control variables, sample means are presented in *Appendix 5* and *Appendix 6*.

To measure financial well-being, an indicator for subjective perception of household income is included instead of an actual amount earned. Beyond the problem of a high number of missing cases and concerns about the cross-country comparability of income data, I take the suggestion by Dolan, Peasgood and White (2008) who also pointed out methodological concerns on including income variable (as an amount), and proposed to prefer subjective measures which also accounts for a comparison effect of other people living near the respondents, thus better tap into a personally experienced standard of living. In a Hungarian context, Ságí (2000) also observed that satisfaction with income was much less determined by the actual equivalent income of the household than by the discrepancy between the actual and the desired level of income, the trends in income mobility or the perceived situation of reference groups.

For measuring social capital, an indirect variable to control for social network embeddedness of respondents is added. This variable “How many days in a year meeting others socially” is calculated from the original “How often socially meet with friends, relatives or colleagues” transforming response categories to a time scale in a similar manner as presented above concerning variables of religious practice. Lastly, an 11-point scale variable “Most people can be trusted or you can't be too careful” has been used to control for generalised trust in people, an assumable accompaniment of religiosity as well as other social activities in order to control for a non-spiritual part of religious practice as a community activity. The variable measuring the frequency

of meeting others socially describes the density of one's social network indirectly, by capturing an activity aspect of actual participation within it. At the same time, the variable asking about the trust in other people represents an attitudinal dimension of social participation, which is both a prerequisite, and a consequence of it. This differentiation justifies the inclusion of both variables in the models. To give an overview, sample means of social capital background variables are presented in *Appendix 7*.

As it has been expounded in Section 3.3.2., country context can interplay with the level of subjective well-being through either cultural traits or socioeconomic well-being as well as economic and institutional development. Moreover, it can influence the relationship of religion with subjective well-being through the religious context and denominational or religious composition within the country as well as the societal attitudes towards religion. Therefore, it is important to control for these national characteristics, which may also be variant with time.

As to the economic and institutional context, GDP can be used as a reliable proxy of economic development in general. Other candidates like, e.g., Global Competitiveness Index, are, in practice, almost perfectly correlated with GDP, others, like, e.g., Human Development Index, are directly composed of that. In order to prevent scaling problems, I use the real GDP per capita at purchasing power parity in a grand-mean centred, standardized value.

As to the societal religious environment of respondents, I use the data calculated from the pooled dataset being analysed. This is an obvious choice because this way a proper estimation will be available for all examined countries at any time points, which would not be accessible in such a coverage from census data or other cross-country comparative or national surveys. Societal level average degree of individual religiosity, the share of belonging to a religious denomination in the respective country at the measured time point, the societal level average frequency of meeting others socially and the share of those attending religious occasions in the respective country at the measured time point will be included in the final models testing higher level effects.

## *4.4. Analytic strategy*

Following the logic and results of several studies cited above in section 4.1, the most important ones of which are Diener, Tay and Myers (2011); Gundlach and Opfinger (2012); Müller (2011); Pollack and Rosta (2015); and Stavrova, Fetchenhauer and Schlösser (2013), multi-step logistic regression modelling and multi-step linear regression modelling is apparently a feasible starting point. However, these studies either typically build on the analysis of country-level aggregated data, or do not look at the long-term processes, or hardly take into account the local or regional context. (Against this latter point, Hover and Sibley (2013) offers an interesting example, although limited to the context of New Zealand. Moreover, based on these analyses, the authors formulate explanations mostly on the individual level.)

Thus, in the current research, multilevel linear regression modelling is applied with subjective happiness as the dependent variable, the degree of personal religiosity as the primary independent variable and other religiosity measures as further explanatory variables included. In building and evaluating the models, I rely on Peugh (2010) and Peugh and Enders (2005).

According to Yang-Hansen and Gustafsson (2008), in the case of a time-series cross-sectional design that is typical for cross-national longitudinal designs, national and time-level differences can be effectively controlled by dummy variables in ordinary regression methods that treat the effect of factors fixed in time and across groups of observation. However, multilevel design more effectively treats the clustering of cases and the resulting the lack of independence of observations, that is, the fact that it can be assumed that both the level of average religiosity and average happiness level are varied across countries and by time, producing a certain level of similarity between respondents within the same sample. Furthermore, multilevel approach is useful for a large number of clustering groups and a large case number within clusters. Finally, the main advantage is that in multilevel modelling, one does not have to assume that the observed relationships are the same across all groups of observation but these can be specified as variable effects.

As to the issue of why random-effect models instead of fixed-effect models are used, I follow the argumentation of Bell, Fairbrother and Jones (2019), Bell and Jones (2014) and Snijders and Berkhof (2007) who argue that in data with a hierarchical nature, random effects model should be the starting point. According to Bell et al

(2019), “The only reason to choose FE is if (1) higher-level variables are of no interest whatsoever, (2) there are no random slopes in the true DGP [i.e. data generating process in a simulation study], or (3) there are so few level-2 entities that random slopes are unlikely to be estimable.” They also add that Hausman test should not be used to decide between random effect and fixed effect models. Instead, the choice should be driven by the theoretically founded statistical interest of the research. Rather, Hausman test is to test the equivalence of within and between relationships. As to fixed effect sizes, however, as Yang-Hansen and Gustafsson (2008) observed, only little variation in the estimated regression coefficients for the different models was found.

Analysis is conducted by the MIXED procedure of IBM SPSS. The advantage of this programme is that it is capable of computing different variance-covariance structures, and it is fitted with an easy-to-use point-and-click interface for model specifications (West and Galecki, 2011). As to results and parameter estimates, different softwares are now known to produce identical or similar results (Peugh and Enders, 2005; West and Galecki, 2011). A disadvantage of this software procedure is, however, that it cannot properly include sampling weight in the model design. As to sample weighting, Pfeffermann (1993) proposes that “if the regressor variables in a regression model include all the design variables, the sampling design is ignorable for estimating regression model.” (Pfeffermann, 1993, p. 323) As Schnaudt et al (2014) describe, “sampling designs for each of the participating countries in the ESS… rely on random probability samples at all stages of the selection process.” They add that, “For any remaining design effects, the ESS data contains design and post-stratification weights to adjust for biases emanating from the sampling procedure, different sample designs across countries, and differential response on key stratifiers such as gender, age, education level and region.” (Schnaudt et al, 2014, p. 497–498) These key variables are all included in the models presented below (even if only on the country level instead of regions), thus, it can be assumed that weight is ignorable in the models. As to population size weight available for level 2 for each sample, following the logic of Aspaurov (2006, p. 455, described in step 2) it is ignorable as the nature of these weights is not multilevel. Yang-Hansen and Gustafsson (2008) found only marginal differences in estimates when comparing different methods of analysing cross-country time-series cross-sectional data. Carle (2009), using simulation tests, observed that weighted estimates and standard errors in multilevel models were only slightly

differing from unweighted analyses, and these differences were minimal and did not lead to different inferential conclusions. Cai (2013) concluded that ignoring sampling weights on level 1 might lead to biased estimates on the intercept and variance of random effect, and ignoring sampling weights on level 2 might result in an additional bias slightly underestimated fixed effects and residual variance if the weighting is informative, that is, sample inclusion probabilities are correlated with the values of outcome variable. However, they added that in the case of a non-informative design, the level of variation of sampling weights might not necessarily associate with biased results. Stapleton and Kang (2018) found that "the standard errors of parameters in unconditional models might be over- or underestimated, depending on whether the ignored sampling components included stratification at the first stage of sampling or an additional stage of sampling that was not accommodated. In general, given the variables used in this study, the misestimation of the standard errors was not as extreme as presented in prior simulation research" (Stapleton and Kang, 2018, p. 449).

On the number of groups and necessity for a multilevel analytical strategy in a given research setting, Stegmueller (2013), using Monte Carlo simulation, asserted that a small number of groups (countries) lead to distorted maximum likelihood estimates and biased confidence intervals, especially when cross-level interactions were tested. He suggested applying a Bayesian approach instead. Contrary to that, Bryan and Jenkins (2016) casted doubt on these findings about the number of countries sufficient for carrying out a reliable multilevel analysis modelling cross-country effects. Using similar Monte-Carlo simulation method, they concluded that "users require 25 countries for linear models and 30 countries for logit models at the very minimum" to gain reliable estimates of confidence intervals of random parameters (random intercept and slope on the country level) (Bryan and Jenkins, 2016, p. 19). Thus, given the proposed structure of the modelling, the current approach can be justified. However, they add that the number of groups in multilevel models does not affect confidence intervals of fixed individual-level predictors.

Kreft and De Leeuw (1998, pp. 133ff.) offer Restricted Maximum Likelihood (REML) and Full Information Likelihood (FIML) estimation methods. Although the previous one is known to provide better estimation of random parameters (that is, to estimate better the higher-level variance of intercepts and slopes), the latter one offers more accurate fixed parameter estimates and the opportunity to compare model fit of consecutive models. As far as the main interest of this research is to study the effect

of religiosity, I use FIML estimation. Furthermore, as the theoretical considerations as well as the results of a Monte Carlo simulation method testing by Elf and Shikano (2014) has shown, the resulting fixed parameter estimates of a multilevel maximum likelihood estimation and those of a restricted maximum likelihood estimation or even those of a crude ordinary least square estimation method did not substantially differ.

Another issue is how to treat missing data. Kmetty (2018), using data from 14 countries participating in the first seven waves of ESS tested several methods to treat non-response bias in multilevel analysis. However, in conclusion he acknowledged that most treatments did not result in dramatic differences in estimates. Rather counterintuitively, the non-treatment of missing responses resulted in an underestimation of values concerned. Thus, the conclusion can be drawn here that if in a model omitting cases with missing values shows significant results, one can logically assume that the results would be even more reliable having a dataset with no missing values at all. Thus, although including all valid cases (i.e. with no missing values in the variables involved) resulted in the same parameter structures with largely similar estimates, I started with a listwise deletion by the missing values in all the variables included in the fullest model, which allowed the comparison the goodness of fit of consecutive models throughout the systematic model building procedure.

To give an overview of the logic and theoretical grouping of the factors included in the models one by one, the model building procedure is summarized in *Table 3* below. This multi-stage approach helps to test the interconnectedness of explanatory variables and thus, to understand better how they interact and how actually impact subjective well-being.

Building a 3-level mixed model is to control both for time-variant and country-level effects. As introduced above, grouping variables are country and year of survey (i.e. year of respective ESS round). Data of individual respondents are nested within study (a national sample within an ESS round) and studies (samples) are nested within countries. In the grouping of cases, I follow the method of Aarts et al (2010). As to the current study, only the primary religiosity measure is included within the first group of models aimed at developing a three-level grouping of cases.

The second group of models introduce further religiosity dimensions. This stage aims at clarifying the effect of diverse aspects of individual religiosity (identity, belonging and practice) on personal happiness. It is to be noted here that including more than one religiosity variables might raise the issue of multicollinearity.

According to the scientific consensus (Hair et al. 2010: 196ff, Winship, Western, 2016, Yu, Jiang, and Land, 2015), a correlation of 0,9–0,95 and above can be deemed as a perfect linear correlation that might cause problems in the statistical inference. As described above, though, there is no perfect linear correlation across these indicators, the highest one being 0,77 between religiosity and the frequency of prayer (it is no wonder anyway that these indicators are mostly positively correlated as far as they measure a similar aspect of life and values of respondents). Furthermore, the effect of multicollinearity is the possible inflation of bias resulting in wider confidence intervals of the parameter estimates, causing the higher probability of not rejecting a false null hypothesis; that is, concluding the effect of a factor not to be significant when it is indeed significant. As explanatory variables are entered one by one, it is exactly the purpose of the model building to check for suppressor effects to see how these variables interact. If the factors are still significant in the final models despite a possible multicollinearity that also proves their robust explanatory power.

This is further detailed throughout the third group of models by including some common socio-economic and socio-demographic factors to control for their effects on happiness as well as religious diversity across various social groups. Subsequent to these models, I control for the effect of individual social involvement and attitudes on happiness to check how these alter the already determined impact of religiosity indicators. By including the level 1 effect of social network, the benefit of belonging to religious communities can be checked. In the fifth group of models, country-by-time (i.e. sample) level effect of country context is controlled for by including variables on both the actual economic differences and cultural as well as religious characteristics derived from the sample data. Finally, as the social and cultural significance of religiosity can be varied by country, the effect of denominational identity is also allowed to be random at level 3.

To sum up, after adding the primary independent variable to the baseline model and further religiosity indicators throughout the subsequent ones, individual level socio-demographic control variables are added to check whether religiosity remains a significant explanatory variable. Finally, other country-by-time- and country-level contextual variables are added to the model to see if religiosity measures still have a significant impact on subjective happiness. Following the terminology of Aguinis, Gottfredson and Culpepper (2013), my hypotheses imply the need for analysing lower-level direct effects (i.e. effects of individual-level predictors on the individual-level

outcome variable) and cross-level direct effects (i.e. those of sample-level predictors on the individual-level outcome variable). However, for the current research, cross-level interaction effects (i.e. the effect of national- or sample-level characteristics on the nature or strength of the relationship between the individual-level outcome variable and predictors) are not of concern. Furthermore, to keep the models simple, I do not scrutinize interaction terms, as it is the individual direct effect of the key explanatory variables, which are in the focus of the research. Accepting the suggestion of Dolan, Peasgood and White (2008), however, by introducing control variables systematically in different models, not only the robustness of the variables of a primary interest can be estimated but also plausible assumptions about their interaction with them can be formulated.

All model parameter estimates and basic model statistics (information criteria, number of valid cases) discussed below are summarized in *Tables 4* to *8* below and in more details (including probability levels and standard errors) in *Appendices 8* to *14*.

***Table 3*: Overview of the multilevel model building strategy**

| Stages of model building | Aim of the stage | Hypothesis tested | Models examined | Aim of the model | Variable added |
|---|---|---|---|---|---|
| **Stage 1: Building a 3-level mixed model** | Building a 3-level mixed model is to both control for and check against time-variant and country-level effects. The sole explanatory variable included at this stage is the degree of individual religiosity ("How religious are you?"). | H1.1–4, H3.1–2 | Model 1: Intercept-only model | Starting point: estimating happiness by the sample mean | Intercept (level 1) |
| | | | Model 2: Level 2-only model: samples as groupings (unconditional ANOVA model) | Mean happiness can vary by time and by country | Level 2 random intercept |
| | | | Model 3: Three level-model: samples nested within countries (null-model) | Variance of mean happiness is subject to time-invariant country features | Level 3 random intercept |
| | | | Model 4: Religiosity as fixed-effect-only individual level explanatory variable in a three level model | Individual happiness is affected by the degree of individual religiosity | rlgdgr (level 1) |
| | | | Model 5: Religiosity as individual level explanatory variable in a three level model: random effect at level 2 | The effect of religiosity on happiness can vary across samples | Level 2 random slope |
| | | | Model 6: Religiosity as individual level explanatory variable in a three level-model: unstructured random effect at level 2 | An interaction is allowed between the level of happiness of non-religious people and effect of religiosity across samples | Level 2 interaction between intercept and slope |
| | | | Model 7: Religiosity as individual level explanatory variable in a three level-model: random effect at level 2 and 3 | The effect of religiosity on happiness can vary across samples and countries | Level 3 random slope |
| | | | Model 8: Religiosity as individual level explanatory variable in a three level- | An interaction is allowed between the level of happiness of | Level 3 interaction between intercept and slope |

| Stages of model building | Aim of the stage | Hypothesis tested | Models examined | Aim of the model | Variable added |
|---|---|---|---|---|---|
| | | | model: unstructured random effect at level 2 and 3 | non-religious people and effect of religiosity across samples and countries | |
| **Stage 2: Level 1 effect of religiosity dimensions** | This stage aims at clarifying the effect of diverse aspects of individual religiosity (identity, belonging and practice) on personal happiness. | | Model 9: denominational affiliation | Fixed effect of belonging and its independency of individual religiosity and affiliation | rlgdnm+rlgblge (level 1) |
| | | | Model 10: attending religious services | Fixed effect of attendance and its independency of individual religiosity and affiliation | rlgatnd_freq (level 1) |
| | | | Model 11: prayer | Fixed effect of prayer and its independency of individual religiosity, affiliation and attendance | pray_freq (level 1) |
| **Stage 3: Level 1 effect of socio-demographic background** | Common socio-economic and socio-demographic factors known to be related with religiosity and/or happiness are included to control for their effects on happiness and religious diversity across various social groups. | H3.1 | Model 12: gender | Fixed effect of gender | gndr (level 1) |
| | | | Model 13: age | Fixed effect of age | cagea (level 1) |
| | | | Model 14: educational attainment | Fixed effect of education | gceduyrs (level 1) |
| | | | Model 15: feelings about household income | Fixed effect of income | hincfel (level 1) |
| | | | Model 16: subjective general health | Fixed effect of health | health (level 1) |
| **Stage 4: Level 1 effect of social network** | Controlling for individual social involvement and attitudes to test the added value of religiosity | | Model 17: frequency of meeting others socially | Fixed effect of social network involvement | sclmeet_freq (level 1) |
| | | | Model 18: trust in people | Fixed effect of social capital | ppltrst (level 1) |

| Stages of model building | Aim of the stage | Hypothesis tested | Models examined | Aim of the model | Variable added |
|---|---|---|---|---|---|
| | independent of social involvement. | | | | |
| **Stage 5: Level 2 effect of country context** | Country context is controlled for through including variables on both the economic differences and cultural as well as religious characteristics. | H3.1–2 | Model 19: economic development: GDP | Level 2 fixed effect of the country's economic development | scgdpppp (level 2) |
| | | H2.1–4, H3.2 | Model 20: country-level mean religiosity | Level 2 fixed effect of the country's average religiosity | rlgdgr_mean (level 2) |
| | | | Model 21: country-level denominational affiliation | Level 2 fixed effect of the share of religiously affiliated people in country | rlgblg_mean (level 2) |
| | | | Model 22: country-level average frequency of participation in social networks | Level 2 fixed effect of the average frequency of meeting other peoples socially in country | sclmeet_freq_mean (level 2) |
| | | | Model 23: country-level average frequency of church attendance | Level 2 fixed effect of the average frequency of attending religious services in country | rlgatnd_freq_mean (level 2) |
| | | | Model 24: country-level average frequency of individual prayer | Level 2 fixed effect of the average frequency of individual prayer | prayer_freq_mean (level 2) |
| **Stage 6: Level 3 effect** | As the social and cultural significance of religiosity can be various by country, so the effect of denominational identity is also allowed to be random. | (H1.1–2, H2.1–4) | Model 25: Level 3 variance of the effect of religious group involvement | Mean happiness of non-affiliated people can vary on the country level. | (rlgblg level 3 random intercept) |

# 5. ANALYTIC RESULTS

## *5.1. Relationship between individual religiosity and happiness*

### 5.1.1 Building a multi-level model

As explicated above, only the primary religiosity measure is included within the first group of models aimed at developing a three-level grouping of cases, the aim of which is to control both for time-variant and country-level effects. This procedure is to depict and test the assumed nested structure of the sample. Being of a somewhat technical nature, these models are only briefly described here; see Appendix 8 and Appendix 9 for the detailed tables with values. Proposed explanations of the observed results will be discussed as a conclusive summary in the final chapter.

#### *5.1.1.1 Intercept-only model*

The first model estimates the personal happiness by using the unweighted grand mean across the sample, including all countries and all available time points. The average happiness across all groups is 7,2 with a variance of 4,03 significantly different from 0 (Wald Z sig. $p < 0{,}001$). The fit model with 2 degrees of freedom can be characterized as –2 Log Likelihood 1133816,58 and Akaike's Information Criterion (AIC) 1133820,58.

#### *5.1.1.2 Level 2-only model: samples as groupings (unconditional ANOVA model)*

Model 2 uses data from individual respondents as level 1 variables and each national samples by ESS rounds as level 2 groupings. By allowing the intercept (i.e. mean happiness) to vary by countries and by ESS rounds, this introduces a significant improvement in model fit as AIC is decreasing to 1096211,5 and –2 Log Likelihood for model 2 is 1096205,51 for the 3 parameters model. The change in –2LL is thus 37611,07 which is very highly significant for 1 degree of freedom change.

The intercept in the model is somewhat higher (7,21) with a variance of 3,49 on the individual level and a level 2 variance of 0,52, both of which are significantly different from 0 (Wald Z sig. $p < 0{,}001$). The intraclass correlation (ICC) is 0,129 meaning that

approximately 13% of total variance is caused by the difference between national samples by ESS rounds.

Following the suggestions of Peugh (2010), the design effect to estimate the need for a multilevel model can be calculated using the equation $1 + (nc - 1)ICC$, where nc is the average sample size within grouping categories, here 267893 / 153 = 1750,935. The design effect is 228,067; several researchers cited by Peugh (2010) agree in that a design effect higher than 2,0 shows a need for a multilevel model, as for a single level OLS regression model the assumption for the independence of observations would be violated.

*5.1.1.3 Three level-model: samples nested within countries (null-model)*

In model three, a level-3 grouping is introduced, that is, national samples from various ESS rounds are grouped by the countries themselves. This model is to test whether differences from countries show higher variability than longitudinal changes. To put it another way, it is tested if changes by time across Europe or the assumed relatively stable cross-country differences are more important.

The lower AIC value of 1095922,19 shows a significant improvement in the model, just like that of –2 Log Likelihood, 1095914,19: the –2LL change is 291,31, highly significant for 1 degree of freedom change.

While the intercept of the model (the mean happiness) is changed to 7,12, and its individual level variance remains virtually unchanged (3,49), it is noteworthy that level 2 variance is now reduced to 0,034 and level 3 (country-level) variance is as high as 0,551. This indicates that while the variability in population happiness is primarily caused by cross-country differences, also a change by time significantly different from zero can be observed (Wald Z sig. $p < 0,001$ for all variance components in the model).

When differentiating both countries and countries by ESS rounds, the intraclass correlation is 0,17 indicating that 17% of total variance results from country and time differences. The design effect of 298 again evidences the need for a multilevel model. Moreover, based on ICC = 0,136 it can be stated that approximately 14% of variation of mean happiness across samples is due to country differences. Although the number of countries is relatively low, the presented arrangement of the levels seems to be justified as the three level model provides a significantly better fit (when –2LL change and AIC are considered) if compared to the country-level only model. Due to space limitations, country-level model is not presented here. Three level model with a

different arrangement – i.e. countries as level 2 variables and countries by rounds as level 3 variables – produce statistically equivalent results, the interpretation of which is less intuitive, however.

#### *5.1.1.4 Religiosity as fixed-effect-only individual level explanatory variable in a three level model*

In model 4, the self-estimated degree of personal religiosity is built in as an individual level independent variable. This model tests if there is a significant overall effect of the degree of personal religiosity on happiness. Further models below will test for longitudinal and country-level deviances.

Lower AIC value for the 5-factor model (1095078,29) as well as that of –2 Log Likelihood (1095068,29) and its change contrasted to the previous one (845,9, very highly significant for 1 degree of freedom change) all indicate a significant improvement in the model. In addition, the effect of the degree of religiosity is significant and positive when included in the model as a fixed effect. Its parameter estimate is 0,0374, suggesting an approximately 0,04 difference of respondents' mean happiness with one scale value increment on the 11-item scale scoring 0 for "not at all religious" to 10 for "very religious". That is, compared to the 6,95 mean happiness for the completely irreligious people, the mean happiness of those at the opposite end of the scale can be estimated close to 7, at least according to this rather simple model including no variables controlling for individual background characteristics. However, the model also shows a significant variance across individuals, years and countries as level 1, level 2 and level 3 variance components are all significant at the 0,001 level. Estimated variance of the intercept is 0,0338 across samples and 0,5586 across countries, showing a higher assumable importance of country differences compared to the longitudinal changes.

#### *5.1.1.5 Religiosity as individual level explanatory variable in a three level model: random effect at level 2*

The fifth model allows the effect of personal religiosity to vary on level 2. By introducing the degree of religiosity both as a fixed effect and as a level 2 random effect, it can be checked if there is a variation across national samples by ESS round regarding (1) the intercept, i.e., the mean happiness of non-religious people, and (2) the size of the effect of religiosity on happiness. Just like the lower value of AIC

(1094627,77), the –452,52 change in –2 Log Likelihood (to 1094615,77), too, signifies a statistically significant improvement in model fit, meaning it is important to control for the variance across samples. The values of level 2 intercept variance (0,0368) and level 3 intercept variance (0,515), both similar to those in model 4, indicate the magnitude of the country-level effect compared to the relative time-level stability. Effect of religiosity, at the same time, shows an estimated variance of 0,0011 significantly different from 0 at the 0,001 level, evidencing that overall positive effect slightly varies across ESS samples by country and year. Considering model parameters, however, there are no dramatic changes. The mean value of happiness of non-religious respondents (intercept) is 6,95 and the overall size of the significant effect of religiosity is close to the previous one (0,0375).

#### *5.1.1.6 Religiosity as individual level explanatory variable in a three level-model: unstructured random effect at level 2*

Next, in model 6, I improve the previous model by setting the level 2 covariance structure "unstructured", thus allowing an interaction between intercept and slope of religiosity effect on the level of individual samples. This model offers a significantly better fit than the previous one. Both AIC (1094599,9) and –2 Log Likelihood (1094585,9) are lower, for the letter of which the –2LL change value is -29,87, significant for 1 degree of freedom at the 0,001 level.

The picture drawn by the fixed parameter estimates is similar to the previous models, with the grand mean 6,94 and the significantly positive effect of the degree of personal religiosity, 0,037. As to the variance components, however, the intercept shows a variance of 0,566 on level 3 (country-level), and a variance higher than in the previous model of 0,068 on level 2 (sample level) now. The strength of effect of religiosity on happiness, again, varies between samples (0,0012). What is even more noteworthy is the significant negative estimate on the interaction between level 2 intercept and slope (–0,0065). This is to suggest that when comparing samples by countries and years, when the intercept is higher, the slope is less steep. To put it simple, if at a given time point, in a country the mean happiness of non-religious respondents is higher, the "added value" of personal religious commitment is not so high, contrasted to other samples with "unhappier irreligious" respondents.

#### *5.1.1.7 Religiosity as individual level explanatory variable in a three level-model: random effect at level 2 and 3*

In model 7, effect size of religiosity is allowed to vary not only by samples (level 2), but also by countries (level 3). Thus, it can be checked if there is a country-level variation of personal religiosity effect independently from time and apart from the intercept variation (mean happiness of non-religious people), which has been already observed through previous models. In order to do that, religiosity is included in the model as a fixed effect and both as a level 2 and a level 3 random effect. Level 2 replicates the unstructured covariance structure used in the previous model, whereas level 3 includes the intercept variation and slope variation as independent variance components.

As a result, –2 Log Likelihood is lowered to 1094475,49 by a significant –2LL change (–110,42) at 1 degree of freedom change, and AIC becomes lower, too (1094491,49). Fixed effect parameters do not change largely: the effect of the degree of religiosity is 0,0361 for an intercept at 6,95. Remarkable changes can be observed among covariance parameters, however. While level 2 intercept variance was 0,068 in the previous case and now it is somewhat lower (0,04), the same value on level 3 (0,566) is decreased to 0,515. Even more important is that the 0,0012 level 2 slope variance is now decreased to 0,0002 (yet it is still significantly different from zero), while level 3 slope variance of 0,001 apparently "takes on" much of its value. Level 2 variance between intercept and slopes is decreased from –0,0065 to –0,0013 but still negative and significant, even if only at the 0.01 level. All these show a high importance of country-level differences as compared to sample-level (and thus, time-variant) differences.

#### *5.1.1.8 Religiosity as individual level explanatory variable in a three level-model: unstructured random effect at level 2 and 3*

The eighth model is improved by setting an unstructured covariance structure at level 3, too. Thus, interaction between intercepts and slopes is allowed both at level 2 and level 3. This model is not significantly better than the previous one as AIC is somewhat higher (1094493,2) and although –2 Log Likelihood is smaller (1094475,2), –2LL change is –0,28 only, thus, the calculated p value for using this as a Chi-Square value for 1 degree of freedom is 0,59634. In accordance with this, the parameter estimates are almost the same as before. The intercept (grand mean happiness for non-religious respondents) is 6,95 and the effect of religiosity is 0,036. Variance components already

present in the previous model did not change much: the intercept variance is –0,0013 at level 2 and 0,513 at level 3, the variance in the slopes is 0,00021 at level 2 and 0,001 at level 3, all statistically significant at the 0,01 level. However, while the significant negative value for the interaction between intercept and slope is the same for level 2 (–0,00013, $p < 0,01$), the newly introduced component, i.e., the interaction of intercept and slope on level 3 is not significantly different from zero.

Behind the model not being significantly better than the previous one is that the newly introduced term is not significant in the model. The meaning of this is that while it is true across samples that the higher the happiness of the non-religious, the lower (but still positive) is the contribution of individual religiosity to happiness, on country level (when not regarding time) longitudinal changes hide this effect. However, to control for any possible time-invariant level 3 (country-level) interaction between intercept and slope variance, I will use this covariance structure for the extended models below. (Simple comparisons, the results and statistics of which are not presented here in order to save space, showed almost no difference regarding their AIC and –2LL values in the more complex models to be discussed below.)

### 5.1.2. Individual level effect of religiosity dimensions

In models 9 to 11, several individual religiosity factors are included in addition to the degree of personal religiosity. Namely, religious denomination belonging to at present or belonging in the past only, frequency of attending church services, and frequency of prayer apart from services are added systematically. Thus, it is possible to check how diverse dimensions of religiosity are related to happiness and how they affect the positive effect of the degree of religiosity on happiness. While *Table 4* highlights the most important model parameters for a simpler overview, *Appendix 10* presents the detailed statistics discussed below.

***Table 4*: Multilevel models – Individual level effect of religiosity dimensions**

| Parameter | | Model 8 (unstructured random effects at level 2 & 3) | | Model 9 (denomination) | | Model 10 (religious attendance) | | Model 11 (prayer) | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** |
| Degree of individual religiosity | | 0,036082 | *** | 0,041945 | *** | 0,041128 | *** | 0,051034 | *** |
| Religious affiliation (ref: not religious | Roman Catholic | | | -0,082687 | *** | -0,083821 | *** | -0,073303 | *** |
| | Protestant | | | 0,068154 | *** | 0,067711 | *** | 0,081311 | *** |
| | Eastern Orthodox | | | -0,282063 | *** | -0,281778 | *** | -0,273753 | *** |
| | Other Christian | | | -0,066070 | | -0,070609 | * | -0,036056 | |
| | Islam | | | -0,334333 | *** | -0,338409 | *** | -0,313476 | *** |
| | Jewish & Eastern religions | | | -0,185347 | *** | -0,187368 | *** | -0,168173 | *** |
| | Religious in the past only | | | -0,072421 | *** | -0,072064 | *** | -0,072530 | *** |
| Frequency of attending religious occasions | | | | | | 0,000228 | * | 0,000608 | *** |
| Frequency of individual prayer | | | | | | | | -0,000505 | *** |
| Between-person variance (Residual) | | 3,472823 | *** | 3,468019 | *** | 3,467969 | *** | 3,464641 | *** |
| Level 2 intercept variance | | 0,040253 | *** | 0,040708 | *** | 0,040733 | *** | 0,040624 | *** |
| Level 2 intercept+slope interaction | | -0,001317 | ** | -0,001353 | ** | -0,001357 | ** | -0,001327 | ** |
| Level 2 slope variance | | 0,000214 | *** | 0,000215 | *** | 0,000215 | *** | 0,000210 | *** |
| Level 3 intercept variance | | 0,512758 | *** | 0,482145 | *** | 0,481792 | *** | 0,481067 | *** |
| Level 3 intercept+slope interaction | | 0,002479 | | -0,001714 | | -0,001608 | | -0,001697 | |
| Level 3 slope variance | | 0,001000 | *** | 0,000970 | *** | 0,000961 | *** | 0,000996 | *** |

*Notation: * Wald sig. p < 0,05; ** Wald sig. p < 0,01; *** Wald sig. p < 0,001*

*5.1.2.1 Denominational affiliation*

First, in model 9 I control for denominational affiliation. The result is a lower AIC (1094134,83) and –2LL value (1094102,83). As denomination is measured by an 8-category variable with being unaffiliated as the reference category, the inclusion of the indicator causes a $\Delta_{df} = 7$ change in degrees of freedom. The critical $\chi^2$ value for p = 0,05 is 14,06714, whereas the –2LL change here is 372,37, therefore it can be concluded that the model fits very highly significantly better than the previous one.

For this model, the intercept is 6,99. Compared to the previous one, this value is somewhat higher meaning that people not affiliated are generally happier than those identifying with a church are. This can be observed as well when examining the fixed parameter estimates of denominational categories: with the exception of the positive B coefficient of Protestant Christianity (0,07), coefficients are significantly negative for other religions (and not significant in the case of other Christians). Although country-level variance of the estimated intercept (i.e., the cross-country difference in happiness of unaffiliated, non-religious respondents) is smaller, suggesting that there is a country-wise cultural component of variability in happiness now partly controlled by denomination, the random parameters remain largely unchanged.

Even more important is the apparently higher effect of the level of personal religiosity: its effect is significant and positive, and it is grown from 0,036 to 0,042 showing that its effect is higher if it is controlled for denominational belonging. Namely, comparing two respondents being religious to the same degree, Roman Catholics are less happy and Protestants are happier than unaffiliated ones. At the same time, two respondents of the same denomination are considerably happier if they are more committed to their belief. However, denominational differences might be related to social status, given the religious differences between Eastern and Western European countries, as well as the presumably lower social status of migrant population where religious, ethnic and social differences can be intertwined. These considerations will be explicated in later models.

*5.1.2.2 Attending religious services*

Another variable measuring a further important dimension, the one of community and ritual, is the frequency of attending church services. This variable is included in the model as a time variable after its transformation as presented above in section 4.3.2. Beyond a lower AIC value (1094132,63), the new –2LL value of 1094098,63 also

signifies a better fit in this model. (The –2LL change is 4,2, higher than the threshold value of 3,84 at p = 5%.) Having a significant positive effect of church attendance at the conventional 5% level, there is almost no change in the parameter estimates presented above. The only difference observable is that of the effect of belonging to other (i.e. not Catholic, Orthodox or Protestant) Christianity, the weak effect of which is negative and significant at the 5% (but not at the 1%) level. Both the special socio-demographic composition of the constituency of these minor churches and the differing religious practice can be an explanation of this, which will be also examined in later models.

#### *5.1.2.3 Frequency of prayer*

In model 11, I include a further indicator of personal practice of religiosity, i.e. that of the frequency of individual prayer. The improved model performs a significantly better fit, the –2LL change is as high as 257,27 meaning that controlling for prayer highly contributes for estimating happiness by religious background. At the same time, while the estimated coefficient of the key explanatory variable of personal religiosity has a higher value of 0,051, neither the intercept (6,97) nor the covariance parameters change substantially.

Just like that of participation in church services, the variable measuring the frequency of prayer is also included as a transformed time variable. It is remarkable that its effect is significant and negative; meaning that prayer that is more frequent is associated with being less happy. How it can be related to subjectively experienced difficulties or severe life conditions will be explored in later stages of the model.

Furthermore, the significantly positive effect of a more frequent church attendance is somewhat stronger when controlling for prayer. The impact of belonging to other minor Christian denominations on happiness is statistically insignificant again.

## *5.2. Controlling for individual and societal-level demographic and economic background*

### 5.2.1. Effect of individual level socio-demographic background

For the next stage, some key socio-demographic variables are included. Namely, models 12 to 16 are controlled also for gender, age, years of full-time education

completed, household income and subjective general health, respectively. *Table 5* summarizes the key statistics and parameter estimates. See *Appendix 10* and *Appendix 11* for more detailed tables.

*5.2.1.1 Gender, age*

As to model 12, the value for –2LL change compared to model 11 is only 1,08, but for model 13 compared to model 12 it is as high as 4271,54 to 1089568,73. Thus, this latter model is improved very highly significantly in terms of fit. AIC for model 13 is 1089608,74, which is smaller than both model 11 and model 12 are. Covariance parameters remain much the same as before.

The effect of gender is not significant when included in the model controlling for religiosity variables only, but together with age it also has a significant effect at the p = 5% level. This means that men are happier than women of the same religious background are, and age has a negative effect: on average, the older people get, the less happy they become. All these are in accordance with previous findings in happiness research.

What is more noteworthy is that the effect of the degree of personal religiosity is basically unchanged compared to the previous models when including gender only, and also the variance components stay very similar in this case. However, when age is also controlled together with gender, the effect of religiosity variables is considerably varied. In this latter case, frequency of attendance contributes positively more to happiness, and prayer that is more frequent is associated with lower level of happiness to a smaller extent if age is controlled. It can be concluded that some aspects of religious practice are conditional on age. Still, significant negative coefficient of the frequency of prayer as a separate effect might show that less happy people tend to pray more. The endogeneity issue here is to be scrutinized in later stages of the model.

Furthermore, neither the previously negative effect of Roman Catholic affiliation nor that of past belonging are significant here. However, the significant positive effect of Protestant belonging and significant negative impact of being member of an Islam, Jewish or Eastern religion's constituency, as well as other Christian identity appear to be somewhat stronger, the latter of which is now significant at the p = 5% level. Finally, in this model, the degree of personal religiosity has a somewhat stronger impact on happiness; its coefficient is now 0,057 compared to 0,051.

*5.2.1.2 Educational attainment*

Including the number of years completed in education (in a group-mean centred form) in model 14 further tinctures the previous findings. As it can be drawn from the lower AIC (1087655,26) and –2LL (1087613,26) values as well as the significantly high –2LL change (1955,48), this model fits better than the previous ones. The impact of the newly introduced variable is significant and positive. While covariance parameters are largely unchanged, the effect of gender is not significant now (with religiosity, age and educational background controlled). The significant effect of age is of a similar magnitude, as well as those of the frequency of prayer and church attendance. For most of the denominations, effect of church affiliation is similar as before, nor is the impact of Roman Catholic affiliation significant here. However, the negative effect of Islam belonging is somewhat weaker if controlled for educational background, implying the significance of social differences in this case. At the same time, the negative effect of both past religiosity and other Christian belonging are significant here. This might imply a supposable interaction between social background and denominational affiliation in these cases. This issue is to be discussed later and in Section 6.

*5.2.1.3 Household income*

Model 15 controls for the social status by involving the variable measuring the current feelings about the income of the respondents' household. This model shows a very highly significant improvement in fit as it can be observed in –2LL change (23293,87), much higher than the $\chi^2$ value of 7,81473 for 3 degrees of freedom at p = 5% level. AIC is 1064367,39 and –2LL is 1064319,39 now. Intercept drops from 6,87 to 5,35 showing the mean happiness for the reference category of non-religious respondents who are the most dissatisfied with their household-level income. The coefficients are significantly positive for the response values, and as expected, the higher the satisfaction is about income, the happier people are. It can be observed that while significance of estimated covariance parameters is similar to model 14, their magnitude is decreased. As to socio-demographic background, the effect of the age is also similar to model 14, but that of educational background is lower if controlled for income, and that of gender becomes significantly negative, meaning that women are happier than men of the same age, income, educational level and religiosity are.

With the measure newly included in the model, effect of religiosity indicators shows a very peculiar pattern. Denominational belonging contributes positively to happiness only in the case of Protestant Christianity, but its impact is about the half if compared to model 14. In the case of Roman Catholic and Eastern Orthodox churches, as well as that of other non-Christian religions, the effect is significantly negative, and, in the latter two cases, somewhat weaker than in model 14. At the same time, the belonging to other Christian denominations itself shows no significant importance for happiness.

Attending religious services apart from special occasions means a significantly higher happiness. However, when controlled for income in addition to other background variables, the coefficient of the frequency of prayer is not significant. To put it another way, respondents frequently praying are not significantly happier than people of the same age, gender, income and religious to the same degree, who never pray. This signifies the social background conditionality of the apparent effect of prayer: probably less well-to-do and, as a consequence, less happy people tend to pray more. It is also to be emphasized here that both the significance and the effect of the degree of religiosity (0,0601) is quite similar to the previous models.

*5.2.1.4 Subjective general health*

In model 16, inclusion of the variable measuring respondents' health status results in a significantly better-fit model as lower AIC value (1046497,11) and $\Delta_{-2LL}$ = 17878,28 change to –2LL = 1046441,11 equally show. Intercept drops to 3,64 as it represents now the mean happiness of respondents with a very bad health status; better health goes along with significantly higher happiness.

A remarkable change concerning estimated covariance parameters here is that all parameters of the unstructured covariance matrix are significant at the 5% level, including the level-3 interaction between intercept and slope. The meaning of this is that not only on the level of samples by country and year is it true that the higher intercept (i.e. mean happiness of non-religious female respondents of average age and educational background with the lowest income and worst health in a given sample) goes along with a less steep slope (i.e. a lower, but still significantly positive "added value" of personal religiosity to happiness), but the same is true for all countries irrespectively of time.

As to social background variables, it is remarkable that the effect of educational attainment is not significant here; at this stage, it seems that when controlling for religiosity, education affects health through providing higher income and a better health. The effect of age is of a smaller magnitude but still negative and significant. Finally, gender affects happiness in the same way as in model 15.

As to religiosity variables, it is noteworthy that prayer influences happiness in a significant and positive way if the model is controlled for both income and health status. It can be concluded that frequency of prayer is indeed related to the material difficulties in life, and comparing two respondents of the same social background and of similar financial and health status, the one who prays more frequently will be significantly happier. The effect of the frequent church attendance is also positive on happiness, although to a lesser extent if controlled for subjective health. Both being significant, the effect of Roman Catholic belonging is somewhat stronger negative, and that of Protestant affiliation is somewhat weaker positive here. In the case of Eastern Orthodox, Islam, non-Christian and former-only religions, the significant negative effects appear to be weaker. It is also notable that the degree of personal religiosity affects happiness positively a little bit stronger.

## *Table 5*: Multilevel models – Effect of individual level socio-demographic background

| | | Model 12 (gender) | | Model 13 (age) | | Model 14 (education) | | Model 15 (income) | | Model 16 (health) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** |
| Degree of individual religiosity | | 0,051209 | *** | 0,057441 | *** | 0,060156 | *** | 0,060154 | *** | 0,061022 | *** |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,073405 | *** | -0,005870 | | -0,005009 | | -0,048059 | *** | -0,061403 | *** |
| | Protestant | 0,081328 | *** | 0,165753 | *** | 0,152819 | *** | 0,085312 | *** | 0,056992 | *** |
| | Eastern Orthodox | -0,273514 | *** | -0,247804 | *** | -0,254608 | *** | -0,164875 | *** | -0,143895 | *** |
| | Other Christian | -0,036627 | | -0,078596 | * | -0,093000 | ** | -0,032025 | | -0,023927 | |
| | Islam | -0,314640 | *** | -0,470611 | *** | -0,395039 | *** | -0,123045 | *** | -0,117082 | *** |
| | Jewish & Eastern religions | -0,168726 | *** | -0,232400 | *** | -0,269818 | *** | -0,188484 | *** | -0,157580 | *** |
| | Religious in the past | -0,072496 | *** | -0,026356 | | -0,061040 | *** | -0,068848 | *** | -0,048115 | *** |
| Frequency of attending religious occasions | | 0,000606 | *** | 0,000932 | *** | 0,000937 | *** | 0,000741 | *** | 0,000429 | *** |
| Frequency of individual prayer | | -0,000501 | *** | -0,000179 | *** | -0,000144 | *** | 0,000007 | | 0,000147 | *** |
| Male | | 0,007712 | | 0,017836 | * | 0,014334 | | -0,043267 | *** | -0,074846 | *** |
| Age of respondent (grand mean centred) | | | | -0,013489 | *** | -0,011123 | *** | -0,011017 | *** | -0,001091 | *** |
| Years of full-time education completed (group mean centred) | | | | | | 0,043248 | *** | 0,014337 | *** | 0,000601 | |
| Feeling about household's income nowadays (ref: Very difficult) | Living comfortably | | | | | | | 2,200571 | *** | 1,822651 | *** |
| | Coping | | | | | | | 1,721856 | *** | 1,441250 | *** |
| | Difficult | | | | | | | 0,949801 | *** | 0,800302 | *** |
| Subjective general health (ref: Very bad) | Very good | | | | | | | | | 2,600240 | *** |
| | Good | | | | | | | | | 2,112240 | *** |
| | Fair | | | | | | | | | 1,595961 | *** |
| | Bad | | | | | | | | | 0,848114 | *** |
| Between-person variance (Residual) | | 3,464627 | *** | 3,409731 | *** | 3,384975 | *** | 3,103955 | *** | 2,903658 | *** |
| Level 2 intercept variance | | 0,040636 | *** | 0,043798 | *** | 0,042654 | *** | 0,025705 | *** | 0,025803 | *** |
| Level 2 intercept+slope interaction | | -0,001329 | ** | -0,001476 | ** | -0,001443 | ** | -0,000877 | * | -0,001092 | ** |
| Level 2 slope variance | | 0,000210 | *** | 0,000207 | *** | 0,000204 | *** | 0,000171 | *** | 0,000175 | *** |
| Level 3 intercept variance | | 0,480996 | *** | 0,464481 | *** | 0,476514 | *** | 0,189411 | *** | 0,179234 | *** |
| Level 3 intercept+slope interaction | | -0,001712 | | -0,001951 | | -0,002664 | | -0,002815 | | -0,005039 | * |
| Level 3 slope variance | | 0,000994 | *** | 0,000991 | *** | 0,000936 | *** | 0,000674 | ** | 0,000533 | ** |

*Notation: * Wald sig. p < 0,05; ** Wald sig. p < 0,01; *** Wald sig. p < 0,001*

***Table 6*: Multilevel models – Individual level effect of social capital**

| | | Model 17 (social network) | | Model 18 (social trust) | |
|---|---|---|---|---|---|
| **Parameter** | | **Estimate** | **Sig.** | **Estimate** | **Sig.** |
| Degree of individual religiosity | | 0,061046 | *** | 0,056707 | *** |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,058314 | *** | -0,051329 | *** |
| | Protestant | 0,056433 | *** | 0,044589 | *** |
| | Eastern Orthodox | -0,142477 | *** | -0,134386 | *** |
| | Other Christian | -0,020338 | | -0,008317 | |
| | Islam | -0,111772 | *** | -0,090443 | *** |
| | Jewish & Eastern religions | -0,157922 | *** | -0,152590 | *** |
| | Religious in the past | -0,051212 | *** | -0,059226 | *** |
| Frequency of attending religious occasions | | 0,000331 | ** | 0,000274 | ** |
| Frequency of individual prayer | | 0,000114 | *** | 0,000148 | *** |
| Male | | -0,079956 | *** | -0,083548 | *** |
| Age of respondent (grand mean centred) | | 0,000623 | ** | 0,000138 | |
| Years of full-time education completed (group mean centred) | | 0,003068 | *** | -0,002902 | ** |
| Feeling about household's income nowadays (ref: Very difficult) | Living comfortably | 1,809920 | *** | 1,730086 | *** |
| | Coping | 1,437225 | *** | 1,387878 | *** |
| | Difficult | 0,800877 | *** | 0,778396 | *** |
| Subjective general health (ref: Very bad) | Very good | 2,578649 | *** | 2,491468 | *** |
| | Good | 2,109285 | *** | 2,046436 | *** |
| | Fair | 1,594274 | *** | 1,559755 | *** |
| | Bad | 0,843800 | *** | 0,829523 | *** |
| Frequency of meeting others socially | | 0,001281 | *** | 0,001247 | *** |
| Trust in people | | | | 0,093826 | *** |
| Between-person variance (Residual) | | 2,882774 | *** | 2,839869 | *** |
| Level 2 intercept variance | | 0,026376 | *** | 0,024249 | *** |
| Level 2 intercept+slope interaction | | -0,001027 | ** | -0,000920 | ** |
| Level 2 slope variance | | 0,000164 | *** | 0,000153 | *** |
| Level 3 intercept variance | | 0,172649 | *** | 0,130302 | *** |
| Level 3 intercept+slope interaction | | -0,004822 | * | -0,004239 | * |
| Level 3 slope variance | | 0,000548 | ** | 0,000543 | ** |

*Notation: * Wald sig. p < 0,05; ** Wald sig. p < 0,01; *** Wald sig. p < 0,001*

## 5.2.2. Individual level effect of social capital

For the next stage, social network indicators are included. Detailed table with the results can be found in *Appendix 12*, while key statistics for simple model comparisons are also displayed in *Table 6*. As it has been argued above in sections 2.3.4., 3.1. and 3.3., community belonging is an important dimension of most religious traditions which can contribute to happiness when participating in several other social activities

as well. Thus, meeting with others and be on good terms with others should significantly add to happiness and attenuate the impact of religiosity at least in some respects. In the models to be presented, I check whether including indicators of social network activity will change the significant positive impact of religiosity on happiness known from previous models. If this happens, it signifies that religiosity affects happiness mainly through its community-related components but not as an individual effect.

As a result, both models are characterised by a lower AIC and –2LL value (1044569,2 and 1044511,2 for model 17, and 1040538,16 and 1040478,16 for model 18, respectively). This means a $\Delta_{-2LL} = 1929,9$ for model 17 and $\Delta_{-2LL} = 4033,04$ for model 18, very highly significant improvement for both models. The covariance structure remains the same, and the parameter estimates for both newly included variables are significantly positive in both models: meeting friends and other members of one's social network more frequently as well as a higher level of trust in others contributes to individual happiness even if controlled for socio-demographic, educational and religious background. The fact that the effect of the frequency of informal social meetings is of about the same magnitude when trust is also added to the model shows that these variables indeed capture two partly independent aspects of community involvement.

Men are significantly less happy than women are if controlled for religious identity and practice, the socio-demographic background factors and social capital. With the inclusion of the latter, a higher absolute value of the coefficient estimate for gender can be observed. At the same time, the effect of age becomes, although very weakly, yet significantly positive when the frequency of meeting others is included, and it turns to be not significant when the model is controlled for trust in others as well. In addition, the effect of years completed in education turns weakly positive if the frequency of social meetings is added, and becomes significantly negative if trust is also included. These peculiar interplays between the effect of social capital and socio-demographic background on happiness will be shortly touched on later in Section 6.

However, it can be ascertained that including these dimensions in the model significantly alters the effect of religiosity measures. As to the community aspect, the impact of church attendance becomes weaker as meeting others and level of trust are added. It must be emphasized, though, that its effect remains significant and positive. That is, while informally meeting friends and being together with church fellows are

both similar in their effect on individual happiness, coming together for a religious purpose seems to have an "added value". How the effect of the frequency of individual prayer is weakened by the involvement of the indicator of social participation and becoming again to the same strength when the level of trust is also included shows that trust as an attitude is strongly linked to the more intimate, spiritual aspects of religiosity.

As to the more formal aspect of denominational self-identification), the significance and direction of the effect of the large religious communities do not change in the newly amended models. Previously negative effect of belonging to the constituency of the Roman Catholic, Eastern Orthodox, Islam, Jewish & Eastern religions, as well as belonging to any religions only in the past, all remain significantly negative, while the positive impact of Protestant affiliation is positive as well, also after including the social involvement indicators. Similar to the effect of the degree of personal religiosity, however, the magnitude of the coefficients is slightly lower now. What is more notable, though, is that the impact of personal religiosity remains unchanged if only the frequency of social meetings is included, but it drops from 0,061 to 0,056 if the model is also controlled for trust in others.

This shows that such a social attitude is indeed linked to individual religious persuasion but religiosity still has a genuine positive impact on personal happiness. Therefore, this effect can be considered independent from social involvement as that is also controlled for in the model. Also, while being part of a (religious) group can promote general trust in society, adding trust in people to the model shows both that church attendance has its own special value in promoting happiness and that personal religiosity also has something to add for that.

### 5.2.3. Higher level effect of economic development

As a contextual economic background indicator, country-level GDP at the given (i.e. sampling) time point is added in model 19 as an explanatory variable. *Table 7* summarizes the key statistics, whereas for the table with more detailed results, see *Appendix 12*. As described above in Section 4.3.2., GDP can be used as a reliable proxy of economic development in general. Therefore, I use the real GDP per capita at purchasing power parity in grand-mean centred, standardized value (in order to prevent scaling problems).

The lower AIC value of 1040509,02 and the –2LL value of 1040447,02 (by a change of 31,15) both signify a better-fit model if GDP is included. Its effect is highly significant at the 5% level. It is apparent that a higher GDP positively contributes to individual happiness even if controlled for all the above-described socio-economic, religious and community factors.

At the same time, neither in the case of the coefficient estimates of already included factors, nor in the case of the covariance estimates a substantial change can be found. This is not surprising, given that the newly introduced variables are constant for all individuals nested within the same samples. The only considerable change is in the case of level 3 intercept variance. This is to tell that a part of country-level difference between the lowest average value of happiness is resulted by the country-level difference of economic development. However, it can also be concluded through this model that diverse aspects of religiosity still impact individual happiness as observed before. A higher degree of personal religiosity, more frequent prayer as well as church attendance all contribute positively to individual happiness to the same extent as seen before. Denominational affiliation goes along a lower level of happiness with the exception of Protestant belonging.

To measure social context via income inequality, I also tested the model including the Gini indicator of countries by sample years, but it resulted no significant improvement in the model.

## *Table 7*: Multilevel models – Effect of economic development and country-level religiosity

| | | Model 19 (GDP) | | Model 20 (sample level mean religiosity) | | Model 21 (sample level share of denominational belonging) | |
|---|---|---|---|---|---|---|---|
| **Parameter** | | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** |
| Degree of individual religiosity | | 0,056725 | *** | 0,056693 | *** | 0,056584 | *** |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,051196 | *** | -0,051204 | *** | -0,050389 | *** |
| | Protestant | 0,043988 | *** | 0,044042 | *** | 0,044560 | *** |
| | Eastern Orthodox | -0,133279 | *** | -0,133816 | *** | -0,132921 | *** |
| | Other Christian | -0,008390 | | -0,008214 | | -0,007800 | |
| | Islam | -0,091154 | *** | -0,091092 | *** | -0,090385 | *** |
| | Jewish & Eastern religions | -0,153281 | *** | -0,153030 | *** | -0,152788 | *** |
| | Religious in the past | -0,059180 | *** | -0,059172 | *** | -0,058956 | *** |
| Frequency of attending religious occasions | | 0,000274 | ** | 0,000274 | ** | 0,000276 | ** |
| Frequency of individual prayer | | 0,000148 | *** | 0,000148 | *** | 0,000148 | *** |
| Male | | -0,083519 | *** | -0,083582 | *** | -0,083595 | *** |
| Age of respondent (grand mean centred) | | 0,000125 | | 0,000129 | | 0,000128 | |
| Years of full-time education completed (group mean centred) | | -0,002890 | ** | -0,002885 | ** | -0,002887 | ** |
| Feeling about household's income nowadays (ref: Very difficult) | Living comfortably | 1,729367 | *** | 1,729180 | *** | 1,729136 | *** |
| | Coping | 1,387564 | *** | 1,387433 | *** | 1,387417 | *** |
| | Difficult | 0,778356 | *** | 0,778279 | *** | 0,778227 | *** |
| Subjective general health (ref: Very bad) | Very good | 2,490234 | *** | 2,490288 | *** | 2,490346 | *** |
| | Good | 2,045550 | *** | 2,045583 | *** | 2,045579 | *** |
| | Fair | 1,559258 | *** | 1,559298 | *** | 1,559289 | *** |
| | Bad | 0,829340 | *** | 0,829395 | *** | 0,829439 | *** |
| Frequency of meeting others socially | | 0,001246 | *** | 0,001246 | *** | 0,001246 | *** |
| Trust in people | | 0,093768 | *** | 0,093779 | *** | 0,093763 | *** |
| Gross Domestic Product, purchase power parity (standardised, grand mean centred) | | 0,240865 | *** | 0,252469 | *** | 0,243964 | *** |
| Sample-level average degree of individual religiosity | | | | 0,062188 | | 0,146768 | ** |
| Sample-level share of belonging to a religious denomination | | | | | | -0,749344 | ** |
| Between-person difference (Residual) | | 2,839870 | *** | 2,839872 | *** | 2,839871 | *** |
| Level 2 intercept variance | | 0,020162 | *** | 0,019310 | *** | 0,019184 | *** |
| Level 2 intercept+slope interaction | | -0,000725 | * | -0,000715 | * | -0,000741 | * |
| Level 2 slope variance | | 0,000153 | *** | 0,000153 | *** | 0,000152 | *** |
| Level 3 intercept variance | | 0,069919 | *** | 0,086731 | ** | 0,067545 | ** |
| Level 3 intercept+slope interaction | | -0,003411 | * | -0,004274 | * | -0,003645 | * |
| Level 3 slope variance | | 0,000545 | ** | 0,000544 | ** | 0,000545 | ** |

*Notation: * Wald sig. p < 0,05; ** Wald sig. p < 0,01; *** Wald sig. p < 0,001*

## *5.3. Higher level effect of religious and cultural context*

How the broader religious context, i.e. level 2 religiosity affects individual happiness is tested in models 20 to 25. All results are detailed in a tabular form in *Appendix 12* and *Appendix 13*, while *Table 7* and *Table 8* present the most important parameter estimates and statistics for model comparison. In the case of the first two models, I examine the effect of the average level of personal religiosity and the share of those belonging to a religious denomination in a country at a given time point. In the subsequent parts, I will continue with including the average frequency of attending religious services, and that of meeting others socially among the sampled populations.

Some particular theories and earlier empirical findings cited above suggested that people might fare better as members of more homogeneous cultures. (To name but a few, on contextual secularization and the effect of the dominant culture, see Section 2.2.1; on spillover effect, see Section 3.2.) Furthermore, a higher presence and visibility of a cultural feature, which presumably contributes to individual happiness, may have an impact also on those who are not personally involved in the respective communities. The following models are to test whether country-level religious identification have any impact even if overall country-level differences are controlled for and whether personal religiosity matters when the newly introduced measures of country-level religiosity are held constant.

### 5.3.1. Sample-level average religiosity

In models 20 and 21, the slightly lower AIC values (1040508,15 for model 20 and 1040501,89 for model 21) indicate a somewhat better fit. It should be recognised, though, that the –2LL change for model 20 is only 2,87, significant only at the 10% level ($p = 0{,}0902$). However, for model 21, $\Delta_{-2LL} = 8{,}25$ (–2LL is 1040435,893816), so the improvement of model fit is significant from model 20 to 21 and from model 19 to 21. This is to show that neither the overall level of religiosity nor that of affiliation do significantly affect individual happiness. (This latter combination of factors had also been tested but not described here out of space limitations.)

However, when including both indicators simultaneously in the model, the effect of the new level-3 variables turns significant. While the coefficient estimates of all other background factors are basically the same as in the previous models and between-person residual is apparently unchanged, when both are included, the country-level average degree of individual religiosity is significantly positive

(0,146768), whereas the share of population affiliated to a religious denomination has a significant negative effect (-0,749344). This peculiar pattern needs to be explained; I will return to this somewhat counterintuitive finding later in Section 6.

Although the models are significantly improved by the new variables introduced together, it is to be noted that the magnitude and effect of the examined individual-level religiosity measures is still the same, thus, not significantly influenced by the religious context within a country at a given time point. The intercept value (i.e. the estimated mean happiness of non-religious female respondents of the lowest social status with no social network in an irreligious social setting of a country with an average economy) is lower, and the between-sample variability of the intercept is lower in model 21 than in model 19. This means that the inclusion of the two sample-level religiosity measures provides a better estimation of general happiness.

### 5.3.2. Sample-level average frequency of participation in social networks

In model 22, I include a variable on the social context from the aspect of social network connectedness. To measure that, I use the sample-level (i.e. country by year) average of the frequency of meeting friends and colleagues socially. A higher average frequency shows that people on average take more opportunities to spend time together, and thus, the given society at that time can be deemed socially more active. As the same individual characteristic affects happiness positively on the individual level, one could expect that those who live in a society with a livelier social life will be happier.

In model 22, the pattern is peculiarly different, though: the impact of the average frequency of meeting others on the sample level is significant and negative (all the other included variables held constant). The reason for this can be a particular contextual effect, which points to importance of what the attitude of a society towards social relationships is. Namely, where frequently socializing is a part of the dominant culture, nurturing social contacts has a lower "added value", whereas being left out of social activities has a higher emotional cost or even deemed as, or resulting of, deviant behaviour. In turn, where most people are part of more frequent social activities, those left out will suffer more as experiencing both exclusion and a minority position. Furthermore, where people tend to meet others more, it might happen that less emotionally rewarding contacts will be also part of one's acquaintances.

That this effect on happiness experienced is conditional on individual involvement in social life becomes evident by testing the impact of sample-level mean frequency of informally meeting others on happiness, which proves to be not significant, only if the individual level frequency of social meetings is also included. (The respective model has been tested, too, but is not explicated here in more details for the sake of saving space.) However, other background factors or religiosity and social position, as well as covariance structure, are hardly changed, apart from a considerable decrease in level 2 and an increase in level 3 intercept variance. The reason for this latter is that the newly included societal level social network indicator "takes on" a part of sample-level variance, but at the same time, it highlights more the time-level variance involved in level 3 (country level). The model fit is significantly improved, as AIC is lower (1040492,7) and –2LL is also lowered by 11,2 to 1040424,7. A somewhat higher coefficient for GDP indicates that the country-level liveliness of social life is weakly linked to economic development.

### 5.3.3. Sample-level average frequency of participation in religious occasions

In model 23, I examine how the societal level participation in church communities contributes to happiness if individual level social background, religiosity and personal religious participation, as well as individual and sample level social involvement are controlled. This way, the model tests whether the higher average frequency of church attendance contributes to the happiness of people regardless of their personal involvement, practice and religious identity, and if this kind of group membership on a societal level has an impact separately from that of other informal social activities. Again, a higher frequency on average shows that people in general visit more religious occasions and so, they spend more time together with other church fellows. Thus, the given society at that time can be characterized with socially more active church life. As the same individual characteristic affects happiness positively on the individual level, one could expect that those who live in a society with a livelier religious life will be happier.

This assumption is justified by model 23. The coefficient of the variable measuring the societal level average frequency of church attendance is significant and positive. This shows the importance of the special contribution of religious gatherings to

individual happiness also for those not involved in any church community. The new model is significantly improved in fit, as the lower AIC (1040490,63), –2LL (1040420,63) and the significantly high $\Delta_{-2LL}$ values (4,06 for $\Delta_{df} = 1$) all show. With a slightly higher intercept, the coefficients and covariance parameters are mostly unchanged. A somewhat higher coefficient for GDP in model 23 also indicates that the country-level liveliness of religious life is weakly linked to economic development. Again, there is a considerable decrease in level 2 and an increase in level 3 intercept variance, probably for the same reason as in the model before. More important is that in model 23, there is a higher absolute value of the coefficient of the societal level average frequency of informal social meetings. Again, the detrimental effect of being lonely in a rather socializing culture is even more evident here.

What is more surprising is that the effect of the sample level average frequency of church attendance is not significant, if this is included in the model without controlling for the average frequency of meeting others socially. (Again, this model has been tested but is not presented here in details in order to save space.) I will return to this point later in Section 6.

### 5.3.4. Sample-level average frequency of individual prayer

Attempts to include the devoutness of a religious culture through the more intimate practice of individual prayer averaged on the sample level resulted in insignificant changes. In essence, introducing the average number of days in a year when respondent prayed within a country at a given time point in model 24a did not result in a significant parameter estimate of this variable, and that of the average frequency of church attendance turned not significant. Given the very high correlation of this examined new variable with other sample-level religiosity measures (all two-way Pearson's $r > 0,8$, $p < 0,001$), one could suspect that the issue of multicollinearity confounded the model estimates. However, as to sample-level average prayer frequency, the result was similarly insignificant when it was included solely in model 24b. It seems that only individual prayer influences happiness on the person's level, but no higher-level direct effect can be observed. Detailed result of these two models are presented separately in *Appendix 14*. I now continue and finalize model building with omitting the insignificant effect of sample-level average prayer frequency.

### 5.3.5. Country-level variance of effect of religious group involvement

Finally, in model 25, I include a level-3 random term to examine how the effect of the societal level participation in church communities varies by countries. To put it in other way, it is checked how in different cultures and religiously diversely composed societies religious affiliation counts for individual happiness. As a result, this model is much better fitted: AIC is only 1034820,34 and –2LL is only 1034748,34 with a very highly significant –2LL change of 5672,3. It can be concluded that the effect of present or past religious belonging in general on happiness is significantly different by countries. Country-level variance of the intercept is somewhat higher but the covariance parameters are largely similar to those of model 23. Effects of the sample level share of denominational belonging and the sample level average frequency of attending religious occasions are somewhat higher in absolute value (suggesting a more precise estimation as the model fit is better). With the exception of the Jewish & Eastern religions and being religious in the past only, most coefficients are having a lower absolute value now that the cultural variability in denominational belonging is controlled.

Still, as this final model makes it evident, religiosity dimensions all have a consistently significant effect even if the model is controlled for individual socio-economic factors and social network indicators.

Several other religiosity variables have been tested for the country-level variance of their effect, the detailed statistics of which are omitted here out of space limitations. However, it is important that apparently, only the one of denominational belonging shows significant differences by country. Moreover, through a number of tests, no other explanatory or control variables resulted in better-fitted and well-interpretable models or even the estimation process terminated because of oversaturation of the models when too many random terms were introduced. Therefore, for the current research this latest model can be regarded sufficient for testing the hypotheses, which is expounded below.

## *Table 8*: Multilevel models – Effect of country-level religious and cultural context

| | | Model 22 (sample level average frequency of meeting others) | | Model 23 (sample level average frequency of religious attendance) | | Model 25 (effect of country-level religious belonging) | |
|---|---|---|---|---|---|---|---|
| **Parameter** | | **Estimate** | **Sig.** | **Estimate** | **Sig.** | **Estimate** | **Sig.** |
| Degree of individual religiosity | | 0,056640 | *** | 0,056698 | *** | 0,056816 | *** |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,049877 | *** | -0,050436 | *** | -0,040244 | * |
| | Protestant | 0,044654 | *** | 0,044871 | *** | 0,038416 | |
| | Eastern Orthodox | -0,134282 | *** | -0,132876 | *** | -0,126423 | *** |
| | Other Christian | -0,007265 | | -0,007292 | | -0,002903 | |
| | Islam | -0,090664 | *** | -0,090274 | *** | -0,087284 | ** |
| | Jewish & Eastern religions | -0,152518 | *** | -0,152440 | *** | -0,156451 | *** |
| | Religious in the past | -0,058876 | *** | -0,059099 | *** | -0,057633 | *** |
| Frequency of attending religious occasions | | 0,000276 | ** | 0,000272 | ** | 0,000267 | ** |
| Frequency of individual prayer | | 0,000148 | *** | 0,000148 | *** | 0,000149 | *** |
| Male | | -0,083606 | *** | -0,083628 | *** | -0,082780 | *** |
| Age of respondent (grand mean centred) | | 0,000128 | | 0,000131 | | 0,000150 | |
| Years of full-time education completed (group mean centred) | | -0,002883 | ** | -0,002884 | ** | -0,002941 | ** |
| Feeling about household's income (ref: Very difficult) | Living comfortably | 1,729389 | *** | 1,729226 | *** | 1,731011 | *** |
| | Coping | 1,387628 | *** | 1,387567 | *** | 1,390369 | *** |
| | Difficult | 0,778341 | *** | 0,778303 | *** | 0,779589 | *** |
| Subjective general health (ref: Very bad) | Very good | 2,489935 | *** | 2,489987 | *** | 2,489116 | *** |
| | Good | 2,045273 | *** | 2,045275 | *** | 2,044109 | *** |
| | Fair | 1,559049 | *** | 1,559052 | *** | 1,557958 | *** |
| | Bad | 0,829324 | *** | 0,829389 | *** | 0,826442 | *** |
| Frequency of meeting others socially | | 0,001249 | *** | 0,001249 | *** | 0,001245 | *** |
| Trust in people | | 0,093777 | *** | 0,093785 | *** | 0,093688 | *** |
| Gross Domestic Product, purchase power parity (standardised, grand mean centred) | | 0,256542 | *** | 0,263805 | *** | 0,260357 | *** |
| Sample-level average degree of individual religiosity | | 0,160118 | *** | 0,133309 | ** | 0,132249 | ** |
| Sample-level share of belonging to a religious denomination | | -0,658707 | ** | -0,734662 | ** | -0,749952 | ** |
| Sample-level average frequency of meeting others socially | | -0,002957 | *** | -0,003306 | *** | -0,003295 | *** |
| Sample-level average frequency of attending religious occasions | | | | 0,011288 | * | 0,012118 | * |
| Country-level variance in the effect of religious belonging | | | | | | 0,002565 | * |
| Between-person difference (Residual) | | 2,839869 | *** | 2,839866 | *** | 2,836932 | *** |
| Level 2 intercept variance | | 0,017149 | *** | 0,016527 | *** | 0,016633 | *** |
| Level 2 intercept+slope interaction | | -0,000706 | * | -0,000698 | * | -0,000707 | * |
| Level 2 slope variance | | 0,000153 | *** | 0,000155 | *** | 0,000157 | *** |
| Level 3 intercept variance | | 0,091089 | ** | 0,114783 | ** | 0,120348 | ** |
| Level 3 intercept+slope interaction | | -0,004968 | * | -0,006187 | ** | -0,007118 | ** |
| Level 3 slope variance | | 0,000546 | ** | 0,000542 | ** | 0,000654 | ** |

*Notation: * Wald sig. p < 0,05; ** Wald sig. p < 0,01; *** Wald sig. p < 0,001*

***Table 9*: Multilevel models – Overview of the procedure and results**

| Stages of model building | Models examined | Hypothesis tested | Test result | Between-person residual (variance) | Model fit (–2LL), improvement of model fit ($\Delta_{-2LL}$) | $\chi^2$ sig. (*df*) |
|---|---|---|---|---|---|---|
| Stage 1: Building a 3-level mixed model | Model 1: Intercept-only model | | | 4,032843 (0,011019) | 1133816,578383 | (2) |
| | Model 2: Level 2-only model: samples as groupings (unconditional ANOVA model) | | | 3,493513 (0,009548) | 1096205,508578 37611,069805 | p < 0,001 (3) |
| | Model 3: Three level-model: samples nested within countries (null-model) | | | 3,493508 (0,009548) | 1095914,193522 291,315056 | p < 0,001 (4) |
| | Model 4: Religiosity as fixed-effect-only individual level explanatory variable in a three level model | H1.1 | verified | 3,482514 (0,009518) | 1095068,29344 845,900083 | p < 0,001 (5) |
| | Model 5: Religiosity as individual level explanatory variable in a three level model: random effect at level 2 | H1.1, H3.2 | both verified | 3,473004 (0,009495) | 1094615,772229 452,521211 | p < 0,001 (6) |
| | Model 6: Religiosity as individual level explanatory variable in a three level-model: unstructured random effect at level 2 | H1.1, H3.2 | both verified | 3,472837 (0,009494) | 1094585,902332 29,869897 | p < 0,001 (7) |
| | Model 7: Religiosity as individual level explanatory variable in a three level-model: random effect at level 2 and 3 | H1.1, H3.2 | both verified | 3,472824 (0,009494) | 1094475,486085 110,416247 | p < 0,001 (8) |
| | Model 8: Religiosity as individual level explanatory variable in a three level-model: unstructured random effect at level 2 and 3 | H1.1, H3.2 | both verified | 3,472823 (0,009494) | 1094475,205532 0,280553 | p = 0,596701 (9) |
| Stage 2: Level 1 effect of religiosity dimensions | Model 9: denominational affiliation | H1.2 | falsified | 3,468019 (0,009481) | 1094102,83034 372,375191 | p < 0,001 (16) |
| | Model 10: attending religious services | H1.3 | verified | 3,467969 (0,009481) | 1094098,634256 4,196085 | p = 0,040424 (17) |
| | Model 11: prayer | H1.4 | verified by later models | 3,464641 (0,009472) | 1093841,35864 257,275616 | p < 0,001 (18) |
| Stage 3: Level 1 effect of socio-demographic background | Model 12: gender | H3.1 | ambiguous | 3,464627 (0,009472) | 1093840,276692 1,081947 | p = 0,298273 (19) |
| | Model 13: age | H3.1 | ambiguous | 3,409731 (0,009322) | 1089568,739825 4271,536867 | p < 0,001 (20) |

| Stages of model building | Models examined | Hypothesis tested | Test result | Between-person residual (variance) | Model fit (–2LL), improvement of model fit ($\Delta_{-2LL}$) | $\chi^2$ sig. (*df*) |
|---|---|---|---|---|---|---|
| | Model 14: educational attainment | H3.1 | ambiguous | 3,384975 (0,009254) | 1087613,259528 1955,480297 | p < 0,001 (21) |
| | Model 15: feelings about household income | H3.1 | verified | 3,103955 (0,008486) | 1064319,387315 23293,872213 | p < 0,001 (24) |
| | Model 16: subjective general health | H3.1 | verified | 2,903658 (0,007938) | 1046441,109205 17878,278111 | p < 0,001 (28) |
| Stage 4: Level 1 effect of social network | Model 17: frequency of meeting others socially | H3.1 | ambiguous | 2,882774 (0,007881) | 1044511,205049 1929,904155 | p < 0,001 (29) |
| | Model 18: trust in people | H3.1 | ambiguous | 2,839869 (0,007764) | 1040478,16473 4033,040319 | p < 0,001 (30) |
| Stage 5: Level 2 effect of country context | Model 19: economic development: GDP | H3.1 | verified | 2,83987 (0,007764) | 1040447,016165 31,148565 | p < 0,001 (31) |
| | Model 20: sample-level mean religiosity | H2.1 | ambiguous | 2,839872 (0,007764) | 1040444,146387 2,869778 | p = 0,090262 (32) |
| | Model 21: sample-level denominational affiliation | H2.2 | ambiguous | 2,839871 (0,007764) | 1040435,893816 8,252571 | p = 0,00407 (33) |
| | Model 22: sample-level average frequency of participation in social networks | H3.1 | ambiguous | 2,839869 (0,007764) | 1040424,696515 11,1973 | p = 0,000819 (34) |
| | Model 23: sample-level average frequency of church attendance | H2.3 | verified | 2,839866 (0,007764) | 1040420,634222 4,062294 | p = 0,043853 (35) |
| | Model 24a: sample-level average frequency of individual prayer | H2.4 | falsified | 2,839866 (0,007764) | 1040420,631057 | not sig. (36) |
| | Model 24b: sample-level average frequency of individual prayer (without church attendance) | | | 2,839873 (0,007764) | 1040423,627262 | not sig. (35) |
| Stage 6: Level 3 effect | Model 25: Level 3 variance of the effect of religious group involvement | H3.2 | verified | 2,836932 (0,007777) | 1034748,339951 5672,29427 | p < 0,001 (36) |

# 6. DISCUSSION

In their seminal article, Diener, Tay and Myers (2011), based on their analysis of Gallup World Poll and USA data, concluded that all mayor religions contributed to the subjective well-being, but only in nations with high-level religiosity and low-level societal well-being. This latter proved to be a strong predictor of overall religiosity in a country. It seemed that religious affiliation contributed especially to the well-being of those experiencing hardships in life, while in highly developed countries with a higher level of overall well-being, respect, community attachment and purpose provided by religions elsewhere were attainable without organized religiosity.

Somewhat contrasting this conclusion, the models verify the general hypothesis of a robust positive association between individual religiosity and subjective well-being, even if this effect is stronger in generally less happy nations and, at the same time, the effect of other well-evidenced correlates is also present. However, the impact of diverse dimensions of religion is rather consistent and interpretable. The observed connection between religion and happiness is even more significant considering the fact that the relationship is not so straightforward in the case of economic development and happiness. As, for example, Graham (2011, p. 224) underlines, "increasing economic prosperity in Western economies is not matched by greater levels of recorded happiness". She also stressed that social capital and religious capital, as well as value-driven action were apparently inseparable and key factors in happiness through, among other features, "the devices by which individuals are able to feel a greater connection to the wider community" (Graham 2011, p. 226).

In the forthcoming, I first turn to the hypotheses themselves on the lower level direct fixed effects, the higher-level fixed effects and the higher-level random effects of the included explanatory variables. (For a tabular overview of the related findings throughout the model building procedure, see *Table 9* above.) After that, I review the effect of included control variables as demonstrated throughout the models. I close this discussion with looking at the limitations of the research and further considerations implying later research directions.

## *6.1. Results of hypothesis testing*

First, let me recapitulate the research hypotheses and review the main findings relevant to these.

**H1.1 verified: The higher degree of religiosity contributes to happiness.**

The effect of the *degree of individual religiosity* proved to be weak, but consistent and significantly positive throughout all analysed models. The parameter estimate is 0,0568, suggesting an approximately 0,06 difference of respondents' mean happiness with one scale value increment on the 11-item scale scoring 0 for "not at all religious" to 10 for "very religious". That is, compared to the approximately 3,2 value of mean happiness for the completely irreligious people, the mean happiness of those at the opposite end of the scale can be estimated close to 3,8, all other variables controlling for individual and societal-level background and economic characteristics, religiosity and social capital held constant.

This finding lends support to all earlier studies suggesting a positive association of happiness with personal religious persuasion. This effect is robust, even if not completely independent of other religious dimensions: its observed effect somewhat raised when denominational affiliation and later the frequency of prayer were introduced in the models, and controlling for age, educational attainment and health further increased its apparent effect. Inclusion of trust, however, somewhat decreased its influence. This suggests the theoretical validity of the differentiation of various religiosity dimensions, e.g., a distinction between intrinsic or extrinsic religiosity, or the measurement of individual persuasion, identity, affiliation, rituals, community aspects and practice.

**H1.2 falsified: The belonging to a religious denomination is associated with a higher level of happiness.**

Contrary to some earlier research findings proposing a positive contribution of *denominational affiliation* to individual well-being, it turned out that affiliation – at least on the level of identification with a religious tradition – did not in itself enhanced happiness, when controlling for the strength of religious persuasion. Roman Catholic, Eastern Orthodox, Islam and Jewish affiliation as well as being associated with other

minor and Eastern religions, all impacted individual happiness negatively. As to *Roman Catholic* belonging, the negative effect became insignificant when the control for age was introduced, but its significance was regained with education and income controlled. In the case of *Jewish*, *Islam* and *Eastern religions*, the possible interaction with age and income clearly showed that partly, but not completely, the different demographical structure of these groups explained the differences. Income satisfaction, in particular, attenuated their negative effect to a considerable extent, and this happened especially with that of *Eastern Orthodox Christian* belonging. Behind this, the minority position (and especially in the case of Islam, an assumable migration background) of these constituencies can be suspected in the case of many examined countries. However, satisfaction with income certainly did not completely abolish the effect of affiliation in these cases, and even more interestingly, social capital did not interfere with the impact of these affiliations largely. Belonging to *other* (presumably *minor*) *Christian* churches either did not have a significant influence on happiness, or it was significant only on the 5% level with varying signs. Possibly a special age characteristic and a particular educational background is underlying but, given their relatively low share in the sample, the scrutiny of this issue is not possible within the framework of the current research. Almost down to the final model, *Protestant* affiliation was the only one that showed consistent positive association with higher happiness. However, its effect size doubled when age was introduced, and halved again with income satisfaction controlled. The different demographic and social characteristics of the constituencies of major contemporary European Protestant churches becomes tangible here. However, this apparent positive effect was turned to insignificant at the 5% level by letting the effect of denominational belonging to be random on the country level. It can be concluded that it is not primarily the Protestant affiliation what matters in happiness, but belonging to a Protestant church in a country having a higher share of Protestant church members. This is in line with the findings of Lengyel and Hegedűs (2004).

It was found also that former, past belonging impacted individual happiness negatively. *Former church identification* turned insignificant when only age was controlled, but regained, and later kept, its significance and negative sign with education controlled. As, based on data from a non-representative large-scale online panel sample from the USA, Mochon, Norton and Ariely (2011) concluded, “many moderate believers would benefit from reducing their level of religiosity rather than

increasing it… When commitment wanes, individuals may be better off seeking new affiliations." (Mochon, Norton and Ariely, 2011, p. 12) My results suggest that this causality does not necessarily exists within the examined context, as those only with past affiliation show lower level of happiness compared to those without any affiliation.

What is also of interest is a higher apparent effect of individual religiosity on happiness when religious affiliation is controlled. A plausible explanation for this is the higher importance of religious conviction in enhancing subjective well-being as compared to that of identification with, or being registered in, a group or organisation based on a religious tradition. In addition, it can be assumed that the importance of religious persuasion in growing personal happiness is even higher among those belonging to a church. However, testing this interplay with interaction variables is beyond the scope of the current research.

**H1.3 verified: The higher frequency of attending religious occasions brings a higher level of happiness.**

Regular church going significantly promoted happiness across all models. It is strange, however, that a part of this effect was supressed by individual prayer (see below); meaning that among those who pray more frequently, church attendance adds more to their happiness. This implies that formal participation in the rituals is not as effective as the more devout religious practice. Furthermore, its effect was somewhat weakened by the inclusion of indicators on socio-economic position, health and social capital. This is to show that those with a more stable status will profit less from religious community attachment. Still, its effect is significantly positive.

**H1.4 verified: The higher frequency of individual prayer brings a higher level of happiness.**

Prayer in the simpler models apparently affected happiness in a negative way. This was in line with the finding of Van de Velde, Van der Bracht and Buffel (2017). Its effect was considerably weaker with age and years in education included, implying that older and undereducated people tended to pray more. With income controlled, however, the significance of its effect disappeared, and then with subjectively judged

health status introduced, it turned positive. A clear implication of this observation is that those experiencing unfavourable life circumstances tend to pray more, but between two persons suffering from the same conditions, the one who prays more will be happier. What is more, results are in contrast with the observations of Colón-Bacó (2010) according to which prayer appeared to be such an important factor that it even reduced the effect of the frequency of religious service attendance.

**H2.1 ambiguous result: The higher average level of religiosity within a society is associated with a higher level of individual happiness.**
**H2.2 ambiguous result: The higher rate of those belonging to a religious denomination within a society is associated with a higher level of individual happiness.**

Neither sample-level degree of religiosity, nor sample-level share of religious affiliation alone affected individual happiness significantly. However, when including both indicators simultaneously in the model, their effect was significant. The effect of the sample-level average degree of individual religiosity was significantly positive, whereas that of the share of population affiliated to a religious denomination was significantly negative. This means that from two respondents living in a population with a same share of religiously affiliated, the one that lives in a country of a higher average degree of religiosity will be happier, all other factors held constant. However, out of two respondents who live in two countries with the same average level of individual religiosity, the one that lives in a country with a higher level of denominational belonging will be less happy, all other factors held constant. A plausible reason behind this rather counterintuitive finding is a weak, yet significant correlation between the two. That is, in societies with a higher share of belonging, there is usually a higher level of personal religiosity as well. However, while the latter one contributes positively to individual happiness on the personal level, the former one is rather reducing it with the exception of the Protestant belonging. When including only one of them in the model, its impact is hidden by the opposite effect of the uncontrolled one. Only when both are controlled will their direction be unfolded.

**H2.3 verified: The higher average societal frequency of church attendance contributes to a higher level of individual happiness.**

A positive impact of the higher sample-level average regular church going on individual happiness was found, independently from that of individual religious attendance. What is more surprising is that the effect of the sample-level average frequency of church attendance is not significant, if it is included in the model without controlling for the average frequency of meeting others socially. Besides a weak negative correlation between the two sample-level variables (Pearson's $r = –0,17$, significant at the level $p < 0,001$), the theoretical explanation that can be offered is that in a society where frequently meeting others socially is more a part of the mainstream culture, meetings in religious occasions also may serve as opportunities for seeing friends, thus these contribute also as do social events. However, the common religious ground provides a good basis for these events to contribute in itself more to happiness. In less socially active settings, however, religious events might be more of a formal and spiritual nature and thus, religious communities are less part of one's social network.

**H2.4 falsified: The higher average societal frequency of prayer contributes to a higher level of individual happiness.**

This hypothesis did not gain support by the models. As a matter in fact, within the model including sample-level average frequency of individual prayer, neither this nor the measure of sample-level average frequency religious attendance proved to be significant. Moreover, not even in the model without sample-level church attendance resulted in parameter estimates with a significant effect of sample-level prayer. Clearly, prayer is so much an intimate spiritual matter of religious behaviour that only the one who practices it will be profited.

**H3.1 ambiguous results: The positive effect of religiosity dimensions on happiness varies by one's gender, age, education, income and health as well as social network participation on the individual and societal level.**

A robust effect of most religiosity dimensions could be observed throughout the models, which remained significant even when controlling for socio-demographic background as well as social capital. The effects of the degree of religiosity and

individual church attendance on happiness were rather consistent. However, the significance, the sign and the magnitude of other measures were somewhat more unstable. In particular, the positive impact of more frequent prayer was affected by one's income and health status, and the affiliation–happiness link was varied by individual income satisfaction and the country-level overall religious setting. Social capital somewhat lowered the effect sizes of religiosity measures, which corroborates the assumption that religious practice and belonging indeed performs community-related functions as well. Looking for but one earlier example, Mochon, Norton and Ariely (2011) also observed in the USA that the inclusion of control variables raised the effect of the strength of religiosity on well-being.

**H3.2 verified: The positive effect of religiosity dimensions on happiness time-invariantly varies in different country-level religious and economic contexts.**

It was ascertained that the level of religiosity significantly differed by samples and by countries. Furthermore, even at the start of model building, a certain level of relative within-sample and within-country homogeneity of happiness level became observable. This was evidenced also by the intraclass correlation of the two-level model meaning that approximately 13% of total variance was caused by the difference between national samples by ESS rounds. When differentiating both countries and countries by ESS rounds, the intraclass correlation indicated that 17% of total variance resulted from country and time differences. Moreover, it could be concluded that 14% of variation of mean happiness across samples was due to country differences. That the variation was caused by differing cultural and economic contexts was evidenced by the significant covariance parameters. Both the sample-level intercepts and the country-level intercepts significantly varied, as well as the sample-level and country-level slopes representing the relationship between religiosity and happiness. In more complex models (after controlling for income and health on the individual level), a significant negative intercept-slope interaction was observed, meaning that the contribution of religiosity is assumedly lower, but still significant and positive, to happiness in samples and countries with a society consisting of happier people. What is more, a significant variation by the country-level share of religious people suggests

that the country's religious culture indeed affects religion's contribution to individual happiness, especially that of denominational identification.

## *6.2. Overviewing the effect of control variables*

When *gender* was introduced first as a sole control variable besides the fixed effect of the explanatory variables on religiosity, its effect was not significant; but together with age, it turned out that men were significantly happier than women were, a finding quite in line with earlier well-being research. However, when the models were controlled also for educational attainment and income level, the sign of the effect of gender changed to the opposite. That is, women with the same religiosity, educational background and income level were apparently happier than men. This effect then remained consistent across the more complex models, too. This counterintuitive finding probably originates from a rather detailed inclusion of religiosity dimensions in which one can hypothesize gender differences; such differences in well-being has been evidenced also by some observations cited in section 2.1.3.1. This issue is, however, beyond the scope of the current study.

*Age* impacted happiness negatively in the early models, a finding already replicated in previous research. However, when controlling for religiosity, demographic and socio-economic circumstances as well as social capital at the same time, happiness was not anymore significantly associated with age. A suggested explanation of this finding is that the lower well-being of elderly population might rise from their relative isolation, which, at the same time, might be counterbalanced with a stronger individual religious devotion. This effect could be, again, scrutinized more thoroughly by different methodological approach and using more proper datasets.

As evidenced in several studies so far, *educational attainment*, measured by years successfully completed in formal education, contributed positively to happiness when introduced in the models. But this effect turned to insignificant when controlling for religiosity, income and health, implying that the generally positive effect of education on individual well-being is mediated by providing better job prospects, a higher health awareness, as well as of the inclination to, and the affordability of, a healthier lifestyle. Testing this implication would require, however, data more focussed on these issues.

Higher satisfaction with present household *income* affected individual happiness very robustly and positively, in some contradiction with some recent well-being

studies asserting that material circumstances had weak, if any, effect on subjective well-being. The economic development of the country as mirrored by the per capita *gross domestic product* was also consistently and positively associated with happiness. As to the former variable, it should be emphasized that apparently it is not the exact amount earned but the subjective perception of its adequateness for one's demands that really counts. This finding may inspire future research on the income-well-being relationship to include also self-classification indicators and subjective perception measures of material well-being. As to the latter indicator, it might be suspected that cross-country variance of GDP reflects tangible differences in Europe that pervades various life aspects and opportunities, and that considerable shares of contemporary societies within a European context have reliable personal or at least mediatised impressions about chances and life circumstances of other countries.

Quite obviously, s*ubjective general health* was strongly associated with happiness level, parallel to previous findings in the field. Effect sizes proved to be rather stable across models in this case.

To measure social capital, two individual level variables (*trust in others* and frequency of *meeting others* socially) and a sample-level variable (average number of days in a year when meeting others socially) were included in the models.

Men were significantly less happy than women were if controlled for religious identity and practice, the socio-demographic background factors and social capital. With the inclusion of the latter, a higher absolute value of the coefficient estimate for gender was observed, showing either that a significant part of men's happiness came from their greater social activity as compared to women, or that social activity played a greater role in women's happiness. At the same time, the effect of age became, although very weakly, yet significantly positive when the frequency of meeting others was included, and it turned to be not significant when the model is controlled for trust in others as well. This may show that both the frequency of participating in informal social events and the scope of one's social network are related to the age and, naturally, the level of individual trust can also change through the life-course. These hypothetical considerations may offer a direction for future studies, however.

In addition, the effect of years completed in education turned weakly positive if the frequency of informal social meetings was added, and became significantly negative if trust was also included. This suggests that time spent in formal education can add to one's social network involvement via both gaining long-term acquaintances and

mastering social skills, and, at the same time, educational system efficiently forms social attitudes and trust. Nevertheless, it is out of scope for the current study how diverse educational systems across European countries produce differences in this respect; however, this is also a promising direction for future research. Furthermore, it was found that after introducing the individual-level controls for social capital, the impact of more years in education remained consistently significant and negative throughout the more complex models. Here, unachievable aspirations of highly (over)qualified people within societies having limited number of highly rewarded positions can be a plausible work hypothesis for closer scrutiny.

Given the significantly positive coefficients of the variables describing the feelings about one's household income and subjective general health, the magnitude of which became only marginally smaller by the inclusion of social capital, one can conclude that these are not influenced primarily and directly by informal social network participation and social attitudes. This is also to be tested later as being not in the central focus of the present research.

Furthermore, while the relationship between happiness and individual level variables of social capital was consistently significant positive, a significant negative effect of the respective higher-level indicator was found. A hypothesized explanation for this counterintuitive relationship, as proposed above, was that sociocultural context was highly influential on to what extent social connectedness could provide higher subjective well-being. Although pastime with companions was beneficial under all circumstances, in countries with a stronger social connectedness, however, those with fewer or no contacts suffered more and those with many social relationships gained less as compared to other countries.

## *6.3. Further implications*

The findings of my research suggest that, despite the assumed decline in the role of religions in a contemporary European setting, religiosity still can significantly contribute to people's happiness by belief, commitment, participation, devotions and community attachment. This contribution can be statistically separated from that of similar, non-religious counterparts like, e.g., meaning in life gained from other sources, involvement in non-religious formal or informal communities, or even probably the participation in spiritual activities outside the church. Nevertheless, it is

not formal membership that counts; rather, affiliation with certain religious traditions in some settings may become a marker of disadvantageous life circumstances. Individual religious practice including regular church attendance and frequent prayer, however, can positively impact one's subjective well-being. Interestingly, religious commitment raises happiness significantly without actual practice, even if the effect is smaller in happier or more well-to do nations.

Thus, it is important to underline that even if the size of the effect of individual religiosity on happiness is small, it was observed to be significantly positive throughout all the examined models, even in those including several control variables. This has been true for almost all other tested religiosity indicators. Although the direction of their effect varied in certain cases, still, it was possible to offer a plausible explanation for the observed interplay of factors in question.

It might sound paradoxical that religious commitment is declining on the societal level despite its evident contribution to subjective happiness. To resolve this apparent contradiction, it can be argued that the decline of religiosity on a societal level is at least partly independent of the happiness gained through religiosity on an individual level. According to several earlier observations already cited above in section 3.3.1, a moderate increase in religious commitment can rather be observed throughout life-cycle especially among the elderly generations, which can easily be explained by the higher subjective well-being earned. Religious decline, on the other hand, is probably a question of the religiosity of subsequent generations because of different socio-cultural contexts and diverse socialization environments. As argued earlier when interpreting the results of a qualitative study on intergenerational religious change in a Hungarian context, even though life-course religious change, whether multidirectional or fluctuating, is more the norm than the exception, its social significance is depending both on various contextual factors and on the cultural and political events that can be interpreted as period effects. That is, the impact of primary and non-primary socialization agents on personal religiosity may depend on the historical, social, cultural context as well as on what age or in which life stage these socialization effects impact the individual. Therefore, instead of the often-proposed opposition of age effect, cohort effect and period effect, it is better to speak about their interplay. (Luxné Prehoda and Hámori, 2020, p. 44) Thus, while it can be asserted that happiness gained through religiosity might indeed slow down religious decline, it

cannot counterbalance the effect of other factors like the interaction of socio-cultural and socialization factors that promote that.

Finally, a simple policy implication that can be drawn is that subsidizing traditional formal churches will not necessarily make people happier; however, if this support ultimately reaches those with the most severe needs, it might contribute to the welfare of all. Personal devout and religious persuasion is not something that can be effectively influenced by state authorities. Health and financial satisfaction apparently counts more, and thus, it can be proposed that religion does not seem to work as "people's opium" anymore.

## *6.4. Some possible limitations*

The key finding of the current research, that is, a consistently significant and positive contribution of the higher degree of personal religiosity on happiness, seems to be robust and generalizable. Also, the observed impact of several religiosity dimensions on that has proved to be either in line with earlier theoretical expectations or empirical results or well interpretable.

For obvious reasons, however, this research is not without limitations. The first set of restraints comes from the nature of the analysed dataset. Although providing data from a longer period, ESS is cross-sectional in nature. To study the proposed causal mechanisms, a panel dataset would be more appropriate. However, as stated earlier, large-scale international comparative panel datasets with detailed information on religiosity are non-existing. Moreover, the data are representative for national (and partly for lower regional) level, still the available sample sizes are not sufficient for in-depth multivariate analysis of major social and religious subgroups. Thus, it is not possible to make reliable cross-national comparison of different church constituencies, groups formed by income level or labour market status, or to take into account regional economic characteristics or local religious composition presumably more tangible for individual respondents. Finally, though a multi-dimensional approach to religiosity was feasible given the available indicators in the ESS dataset, still only very little is known about the content of respondents' religious identification and their perceptions and experiences related with their religious practice. A more thorough analysis of the actual causal mechanism of the religion–happiness association is impossible without

specialized surveys in the field of the sociology of religion. Such data are, however, available currently either on the national level or from cross-sectional studies only.

The second set of limitations concerns the analytical strategy. Although I focused on the direct fixed effect of religious dimensions, single-level interactions and cross-level interactions can be also at play. For future studies, these can easily broaden my results, and several contextual variables are available for this purpose. Furthermore, the ESS dataset provides a set of domain-specific life satisfaction indicators, even if a somewhat limited one. Studying these and their relationship with religiosity, as well as comparing the effect of religiosity dimensions with those of personal values or political preferences can further clarify the underlying mechanisms.

Finally, the analytic strategy was built on a multilevel linear regression that, in essence, estimates parameters for an assumed linear relationship. Even this approach leaves some space for testing non-linear associations, e.g. by including squared, cubic, exponential or u-shaped terms in the models. Heteroscedascity is also a potential feature that could deserve further attention through different or more complex modelling methods. Thus, even though the existence and the robustness of the observed relationship can be deemed well evidenced, its actual characteristic can gain closer scrutiny in the future.

# APPENDICES

*Appendix 1*. Means, standard deviations and rounded valid Ns of "How happy are you"

*Note: variable scaled 0 to 10*

| How happy are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| Total (Grand mean) | | 7,24 | 1,994 | 297893 | 7,2 | 2,008 | 267893 |
| Austria | 1 | 7,65 | 1,926 | 2247 | 7,63 | 1,935 | 2049 |
| | 2 | 7,56 | 1,873 | 2237 | 7,49 | 1,89 | 2046 |
| | 3 | 7,52 | 1,926 | 2381 | 7,44 | 1,978 | 2137 |
| | 7 | 7,33 | 2,028 | 1791 | 7,36 | 1,989 | 1723 |
| Belgium | 1 | 7,69 | 1,703 | 1890 | 7,79 | 1,626 | 1717 |
| | 2 | 7,75 | 1,556 | 1775 | 7,73 | 1,525 | 1721 |
| | 3 | 7,61 | 1,637 | 1797 | 7,66 | 1,579 | 1775 |
| | 4 | 7,6 | 1,644 | 1758 | 7,64 | 1,606 | 1737 |
| | 5 | 7,82 | 1,447 | 1704 | 7,83 | 1,414 | 1659 |
| | 6 | 7,66 | 1,578 | 1869 | 7,69 | 1,525 | 1858 |
| | 7 | 7,74 | 1,472 | 1767 | 7,75 | 1,457 | 1753 |
| Bulgaria | 3 | 5,41 | 2,508 | 1338 | | | |
| | 4 | 5,55 | 2,683 | 2202 | 5,23 | 2,611 | 2074 |
| | 5 | 5,78 | 2,529 | 2417 | 5,45 | 2,571 | 2284 |
| | 6 | 5,55 | 2,699 | 2231 | 5,3 | 2,652 | 2118 |
| Cyprus | 3 | 7,74 | 1,636 | 993 | | | |
| | 4 | 7,51 | 1,61 | 1210 | 7,51 | 1,635 | 1135 |
| | 5 | 7,32 | 1,943 | 1051 | 7,28 | 1,968 | 939 |
| | 6 | 7,27 | 2,043 | 1104 | 7,2 | 2,068 | 1069 |
| Czech Republic | 1 | 6,98 | 2,01 | 1350 | 6,81 | 2,036 | 1164 |
| | 2 | 6,93 | 1,937 | 2996 | 6,81 | 2,026 | 2415 |
| | 4 | 6,9 | 1,898 | 2001 | 6,84 | 1,897 | 1847 |
| | 5 | 6,68 | 1,911 | 2371 | 6,59 | 1,936 | 2207 |
| | 6 | 6,73 | 2,006 | 1970 | 6,66 | 2,024 | 1644 |
| | 7 | 6,92 | 1,985 | 2119 | 6,87 | 1,939 | 1902 |
| Denmark | 1 | 8,31 | 1,425 | 1489 | 8,33 | 1,398 | 1418 |
| | 2 | 8,31 | 1,44 | 1480 | 8,31 | 1,411 | 1417 |
| | 3 | 8,34 | 1,393 | 1498 | 8,33 | 1,388 | 1420 |
| | 4 | 8,34 | 1,421 | 1603 | 8,37 | 1,332 | 1570 |
| | 5 | 8,23 | 1,482 | 1572 | 8,28 | 1,449 | 1541 |
| | 6 | 8,37 | 1,482 | 1644 | 8,4 | 1,448 | 1605 |
| | 7 | 8,19 | 1,597 | 1498 | 8,24 | 1,529 | 1465 |
| Estonia | 2 | 6,32 | 2,051 | 1978 | 6,28 | 2,047 | 1933 |
| | 3 | 6,82 | 1,949 | 1484 | 6,77 | 1,948 | 1391 |
| | 4 | 6,74 | 1,931 | 1645 | 6,73 | 1,953 | 1576 |
| | 5 | 6,95 | 1,895 | 1792 | 6,92 | 1,916 | 1765 |
| | 6 | 6,9 | 1,99 | 2369 | 6,83 | 2,022 | 2297 |
| | 7 | 7 | 1,989 | 2049 | 6,95 | 1,994 | 1976 |

| How happy are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| Finland | 1 | 8,03 | 1,459 | 1995 | 8,03 | 1,463 | 1951 |
| | 2 | 8,05 | 1,413 | 2018 | | | |
| | 3 | 7,99 | 1,423 | 1894 | 8,01 | 1,427 | 1867 |
| | 4 | 8,01 | 1,446 | 2191 | 8,02 | 1,42 | 2167 |
| | 5 | 7,96 | 1,444 | 1877 | 7,96 | 1,429 | 1844 |
| | 6 | 8,09 | 1,361 | 2193 | 8,1 | 1,332 | 2152 |
| | 7 | 8,04 | 1,371 | 2086 | 8,06 | 1,353 | 2049 |
| France | 1 | 7,41 | 1,957 | 1514 | | | |
| | 2 | 7,34 | 1,885 | 1816 | | | |
| | 3 | 7,22 | 1,743 | 1982 | 7,16 | 1,761 | 1954 |
| | 4 | 7,2 | 1,742 | 2070 | 7,12 | 1,777 | 2016 |
| | 5 | 7,11 | 1,839 | 1723 | 6,99 | 1,836 | 1703 |
| | 6 | 7,27 | 1,743 | 1968 | 7,17 | 1,756 | 1941 |
| | 7 | 7,35 | 1,758 | 1913 | 7,19 | 1,765 | 1883 |
| Germany (Eastern part) | 1 | 6,8 | 2,076 | 582 | 6,86 | 2,044 | 1076 |
| | 2 | 6,84 | 2,031 | 533 | 6,95 | 1,99 | 967 |
| | 3 | 6,75 | 2,115 | 572 | 6,8 | 2,073 | 1001 |
| | 4 | 6,91 | 1,962 | 526 | 6,91 | 1,951 | 943 |
| | 5 | 7,02 | 1,956 | 551 | 7,05 | 1,917 | 1040 |
| | 6 | 7,27 | 1,968 | 540 | 7,31 | 1,907 | 995 |
| | 7 | 7,17 | 1,995 | 549 | 7,34 | 1,879 | 989 |
| Germany (Western part) | 1 | 7,28 | 1,926 | 2409 | 7,38 | 1,838 | 1737 |
| | 2 | 7,04 | 2,051 | 2323 | 7,18 | 1,958 | 1703 |
| | 3 | 7,1 | 1,886 | 2334 | 7,17 | 1,845 | 1754 |
| | 4 | 7,3 | 1,954 | 2209 | 7,35 | 1,908 | 1698 |
| | 5 | 7,51 | 1,877 | 2454 | 7,54 | 1,844 | 1894 |
| | 6 | 7,78 | 1,774 | 2415 | 7,81 | 1,724 | 1894 |
| | 7 | 7,68 | 1,732 | 2491 | 7,73 | 1,654 | 1982 |
| Great Britain | 1 | 7,6 | 1,816 | 2578 | 7,54 | 1,864 | 1988 |
| | 2 | 7,45 | 1,795 | 1891 | | | |
| | 3 | 7,52 | 1,875 | 2977 | | | |
| | 4 | 7,54 | 1,826 | 2352 | 7,44 | 1,9 | 2283 |
| | 5 | 7,38 | 1,936 | 2420 | 7,42 | 1,896 | 2319 |
| | 6 | 7,53 | 1,907 | 2277 | 7,5 | 1,944 | 2183 |
| | 7 | 7,58 | 1,899 | 2261 | 7,49 | 1,993 | 2202 |
| Greece | 1 | 6,6 | 2,207 | 2561 | 6,5 | 2,26 | 2487 |
| | 2 | 6,83 | 2,054 | 2394 | 6,74 | 2,093 | 2325 |
| | 4 | 6,69 | 1,918 | 2065 | 6,66 | 1,939 | 1991 |
| | 5 | 5,99 | 2,207 | 2678 | 5,98 | 2,168 | 2599 |
| Hungary | 1 | 6,32 | 2,327 | 1772 | 6,32 | 2,332 | 1644 |
| | 2 | 6,42 | 2,435 | 1486 | | | |
| | 3 | 6,41 | 2,484 | 1592 | 6,25 | 2,54 | 1441 |
| | 4 | 5,89 | 2,439 | 1535 | 5,93 | 2,425 | 1469 |
| | 5 | 6,43 | 2,4 | 1553 | 6,43 | 2,378 | 1514 |
| | 6 | 6,11 | 2,256 | 2007 | 6,1 | 2,257 | 1877 |

| How happy are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| | 7 | 6,38 | 2,195 | 1692 | 6,37 | 2,173 | 1601 |
| Ireland | 1 | 7,86 | 1,774 | 2033 | 7,9 | 1,74 | 1890 |
| | 2 | 7,93 | 1,653 | 2270 | 7,95 | 1,721 | 2149 |
| | 3 | 7,76 | 1,769 | 1806 | 7,72 | 1,839 | 1548 |
| | 4 | 7,51 | 1,799 | 1764 | 7,54 | 1,802 | 1739 |
| | 5 | 7,04 | 2,062 | 2571 | 6,85 | 2,122 | 2493 |
| | 6 | 7,15 | 1,925 | 2619 | 7,05 | 1,973 | 2549 |
| | 7 | 7,33 | 1,844 | 2385 | 7,21 | 1,923 | 2286 |
| Netherlands | 1 | 7,85 | 1,359 | 2360 | 7,8 | 1,409 | 2305 |
| | 2 | 7,8 | 1,286 | 1876 | 7,69 | 1,43 | 1834 |
| | 3 | 7,72 | 1,361 | 1887 | 7,64 | 1,425 | 1855 |
| | 4 | 7,82 | 1,263 | 1776 | 7,72 | 1,363 | 1733 |
| | 5 | 7,87 | 1,283 | 1827 | 7,8 | 1,367 | 1769 |
| | 6 | 7,99 | 1,315 | 1843 | 7,81 | 1,42 | 1812 |
| | 7 | 7,86 | 1,296 | 1919 | 7,8 | 1,356 | 1873 |
| Norway | 1 | 7,9 | 1,523 | 2034 | 7,89 | 1,513 | 2004 |
| | 2 | 7,9 | 1,601 | 1754 | 7,89 | 1,583 | 1741 |
| | 3 | 7,94 | 1,544 | 1744 | 7,93 | 1,546 | 1729 |
| | 4 | 7,99 | 1,562 | 1546 | 7,99 | 1,51 | 1531 |
| | 5 | 8,02 | 1,511 | 1548 | 8,02 | 1,486 | 1525 |
| | 6 | 8,15 | 1,511 | 1618 | 8,17 | 1,453 | 1603 |
| | 7 | 7,96 | 1,62 | 1435 | 7,99 | 1,555 | 1416 |
| Poland | 1 | 6,42 | 2,254 | 2100 | 6,42 | 2,25 | 1974 |
| | 2 | 6,71 | 2,249 | 1711 | 6,74 | 2,246 | 1619 |
| | 3 | 6,96 | 2,126 | 1715 | 6,97 | 2,112 | 1615 |
| | 4 | 7,14 | 2,063 | 1601 | 7,15 | 2,056 | 1495 |
| | 5 | 7,29 | 2,046 | 1679 | 7,31 | 2,007 | 1570 |
| | 6 | 7,33 | 2,003 | 1875 | 7,34 | 2,013 | 1724 |
| | 7 | 7,27 | 2,021 | 1598 | 7,26 | 2,027 | 1466 |
| Portugal | 1 | 6,95 | 1,892 | 1497 | 6,82 | 1,972 | 1416 |
| | 2 | 6,58 | 1,674 | 2049 | 6,48 | 1,767 | 1953 |
| | 3 | 6,64 | 1,784 | 2184 | 6,38 | 1,86 | 1917 |
| | 4 | 6,72 | 1,971 | 2364 | 6,39 | 2,052 | 2162 |
| | 5 | 6,82 | 1,885 | 2144 | 6,52 | 2,005 | 1887 |
| | 6 | 6,51 | 1,866 | 2146 | 6,39 | 1,94 | 1984 |
| | 7 | 6,97 | 2,196 | 1262 | 6,87 | 2,253 | 1216 |
| Russia | 3 | 6,04 | 2,256 | 2378 | 5,88 | 2,292 | 2048 |
| | 4 | 6,21 | 2,185 | 2471 | 6,01 | 2,218 | 2120 |
| | 5 | 6,28 | 2,248 | 2570 | 6,16 | 2,232 | 2250 |
| | 6 | 6,2 | 2,143 | 2437 | 6,26 | 2,141 | 2126 |
| Switzerland | 1 | 8,04 | 1,448 | 2034 | 7,99 | 1,469 | 1951 |
| | 2 | 8,1 | 1,517 | 2137 | 8,04 | 1,51 | 2075 |
| | 3 | 8,11 | 1,414 | 1798 | 8,08 | 1,437 | 1755 |
| | 4 | 8 | 1,524 | 1818 | 7,93 | 1,557 | 1750 |
| | 5 | 8,06 | 1,479 | 1506 | 8,07 | 1,456 | 1460 |

| How happy are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| | 6 | 8,07 | 1,511 | 1489 | 8,1 | 1,478 | 1447 |
| | 7 | 8,09 | 1,508 | 1532 | 8,09 | 1,499 | 1485 |
| Slovakia | 2 | 6,25 | 2,202 | 1495 | 6,27 | 2,154 | 1343 |
| | 3 | 6,51 | 2,02 | 1735 | 6,59 | 1,969 | 1600 |
| | 4 | 6,76 | 1,919 | 1777 | 6,63 | 1,925 | 1703 |
| | 5 | 6,82 | 1,86 | 1974 | 6,66 | 1,901 | 1727 |
| | 6 | 6,8 | 1,858 | 1824 | 6,66 | 1,848 | 1717 |
| Slovenia | 1 | 6,91 | 2,077 | 1512 | 6,93 | 2,067 | 1452 |
| | 2 | 7,21 | 1,926 | 1434 | 7,17 | 1,931 | 1327 |
| | 3 | 7,25 | 1,983 | 1466 | 7,25 | 1,982 | 1398 |
| | 4 | 7,25 | 1,897 | 1279 | 7,23 | 1,932 | 1191 |
| | 5 | 7,29 | 1,902 | 1393 | 7,28 | 1,917 | 1228 |
| | 6 | 7,27 | 1,982 | 1254 | 7,25 | 1,991 | 1217 |
| | 7 | 7,12 | 2,052 | 1220 | 7,1 | 2,043 | 1186 |
| Spain | 1 | 7,46 | 1,763 | 1702 | 7,34 | 1,845 | 1464 |
| | 2 | 7,32 | 1,798 | 1654 | 7,36 | 1,754 | 1562 |
| | 3 | 7,64 | 1,666 | 1875 | 7,66 | 1,654 | 1724 |
| | 4 | 7,69 | 1,597 | 2570 | 7,63 | 1,621 | 2441 |
| | 5 | 7,59 | 1,623 | 1884 | 7,58 | 1,627 | 1817 |
| | 6 | 7,61 | 1,837 | 1884 | 7,59 | 1,846 | 1830 |
| | 7 | 7,44 | 1,83 | 1923 | 7,45 | 1,824 | 1825 |
| Sweden | 1 | 7,87 | 1,581 | 2085 | 7,89 | 1,583 | 1934 |
| | 2 | 7,84 | 1,615 | 1935 | 7,85 | 1,627 | 1893 |
| | 3 | 7,88 | 1,537 | 2147 | 7,9 | 1,54 | 1877 |
| | 4 | 7,83 | 1,595 | 1827 | 7,83 | 1,59 | 1800 |
| | 5 | 7,91 | 1,541 | 1495 | 7,91 | 1,531 | 1476 |
| | 6 | 7,8 | 1,581 | 1846 | 7,83 | 1,558 | 1798 |
| | 7 | 7,9 | 1,484 | 1786 | 7,91 | 1,468 | 1738 |
| Ukraine | 2 | 5,67 | 2,329 | 1991 | 5,45 | 2,369 | 1730 |
| | 3 | 5,83 | 2,516 | 1959 | 5,6 | 2,429 | 1679 |
| | 4 | 5,65 | 2,354 | 1777 | 5,36 | 2,443 | 1498 |
| | 5 | 5,91 | 2,401 | 1862 | 5,61 | 2,409 | 1595 |
| | 6 | 6,2 | 2,257 | 2130 | 6,06 | 2,303 | 1804 |

*Appendix 2*. Means, standard deviations and rounded valid Ns of "How religious are you"

*Note: variable scaled 0 to 10*

| How religious are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| Total (Grand mean) | | 4,63 | 2,979 | 297070 | 4,66 | 2,998 | 267893 |
| Austria | 1 | 5,14 | 2,795 | 2239 | 5,15 | 2,834 | 2049 |
| | 2 | 5,24 | 2,748 | 2235 | 5,08 | 2,835 | 2046 |
| | 3 | 5,16 | 2,816 | 2378 | 5,11 | 2,799 | 2137 |
| | 7 | 4,58 | 2,959 | 1788 | 4,66 | 2,935 | 1723 |
| Belgium | 1 | 5,01 | 3,018 | 1881 | 4,92 | 2,962 | 1717 |
| | 2 | 4,84 | 3,065 | 1769 | 4,79 | 3,052 | 1721 |
| | 3 | 4,94 | 2,981 | 1797 | 4,92 | 2,947 | 1775 |
| | 4 | 4,87 | 3,025 | 1756 | 4,78 | 3,014 | 1737 |
| | 5 | 4,6 | 3,092 | 1702 | 4,52 | 3,025 | 1659 |
| | 6 | 4,56 | 3,169 | 1868 | 4,49 | 3,159 | 1858 |
| | 7 | 4,61 | 3,216 | 1766 | 4,49 | 3,197 | 1753 |
| Bulgaria | 3 | 4,25 | 2,762 | 1375 | | | |
| | 4 | 4,22 | 2,659 | 2198 | 4,25 | 2,637 | 2074 |
| | 5 | 4,34 | 2,627 | 2396 | 4,39 | 2,629 | 2284 |
| | 6 | 4,52 | 2,536 | 2228 | 4,7 | 2,567 | 2118 |
| Cyprus | 3 | 7,03 | 1,924 | 995 | | | |
| | 4 | 6,57 | 2,134 | 1211 | 6,61 | 2,144 | 1135 |
| | 5 | 6,92 | 2,372 | 1055 | 7,04 | 2,41 | 939 |
| | 6 | 7,01 | 2,413 | 1113 | 7,12 | 2,359 | 1069 |
| Czech Republic | 1 | 3,01 | 2,941 | 1324 | 3,2 | 2,969 | 1164 |
| | 2 | 2,61 | 2,88 | 2984 | 2,7 | 2,926 | 2415 |
| | 4 | 2,33 | 2,784 | 1939 | 2,4 | 2,792 | 1847 |
| | 5 | 2,46 | 2,713 | 2351 | 2,47 | 2,745 | 2207 |
| | 6 | 2,07 | 2,707 | 1926 | 2,13 | 2,696 | 1644 |
| | 7 | 2,2 | 2,806 | 2090 | 2,22 | 2,803 | 1902 |
| Denmark | 1 | 4,34 | 2,554 | 1486 | 4,33 | 2,542 | 1418 |
| | 2 | 4,17 | 2,581 | 1482 | 4,27 | 2,559 | 1417 |
| | 3 | 4,15 | 2,596 | 1500 | 4,28 | 2,592 | 1420 |
| | 4 | 4,02 | 2,568 | 1604 | 4,12 | 2,616 | 1570 |
| | 5 | 4,04 | 2,633 | 1573 | 4,07 | 2,613 | 1541 |
| | 6 | 4,15 | 2,658 | 1644 | 4,19 | 2,681 | 1605 |
| | 7 | 3,92 | 2,72 | 1496 | 3,89 | 2,726 | 1465 |
| Estonia | 2 | 3,38 | 2,723 | 1982 | 3,47 | 2,722 | 1933 |
| | 3 | 3,51 | 2,856 | 1494 | 3,62 | 2,866 | 1391 |
| | 4 | 3,67 | 2,78 | 1646 | 3,71 | 2,779 | 1576 |
| | 5 | 3,32 | 2,88 | 1784 | 3,41 | 2,899 | 1765 |
| | 6 | 3,41 | 2,924 | 2364 | 3,46 | 2,949 | 2297 |
| | 7 | 3,59 | 2,937 | 2036 | 3,7 | 2,952 | 1976 |
| Finland | 1 | 5,55 | 2,566 | 1994 | 5,54 | 2,566 | 1951 |
| | 2 | 5,32 | 2,64 | 2016 | | | |

| How religious are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| | 3 | 5,24 | 2,656 | 1887 | 5,3 | 2,637 | 1867 |
| | 4 | 5,14 | 2,747 | 2190 | 5,18 | 2,739 | 2167 |
| | 5 | 5,14 | 2,801 | 1875 | 5,19 | 2,793 | 1844 |
| | 6 | 4,9 | 2,74 | 2190 | 4,97 | 2,719 | 2152 |
| | 7 | 4,67 | 2,856 | 2082 | 4,79 | 2,824 | 2049 |
| France | 1 | 3,84 | 3,002 | 1504 | | | |
| | 2 | 3,68 | 2,927 | 1809 | | | |
| | 3 | 3,71 | 3,037 | 1984 | 3,68 | 2,995 | 1954 |
| | 4 | 3,65 | 2,918 | 2063 | 3,61 | 2,882 | 2016 |
| | 5 | 3,61 | 3,014 | 1725 | 3,61 | 2,926 | 1703 |
| | 6 | 4,54 | 3,446 | 1965 | 4,51 | 3,383 | 1941 |
| | 7 | 4,71 | 3,458 | 1913 | 4,68 | 3,42 | 1883 |
| Germany (Eastern part) | 1 | 2,5 | 2,88 | 582 | 2,4 | 2,792 | 1076 |
| | 2 | 2,35 | 2,792 | 529 | 2,3 | 2,76 | 967 |
| | 3 | 2,55 | 2,98 | 573 | 2,5 | 2,951 | 1001 |
| | 4 | 2,73 | 3,039 | 525 | 2,61 | 3,009 | 943 |
| | 5 | 2,49 | 2,871 | 552 | 2,44 | 2,845 | 1040 |
| | 6 | 2,65 | 3,008 | 540 | 2,65 | 2,979 | 995 |
| | 7 | 2,43 | 2,903 | 549 | 2,45 | 2,882 | 989 |
| Germany (Western part) | 1 | 4,79 | 2,786 | 2405 | 4,7 | 2,782 | 1737 |
| | 2 | 4,73 | 2,723 | 2313 | 4,76 | 2,705 | 1703 |
| | 3 | 4,65 | 2,802 | 2322 | 4,61 | 2,807 | 1754 |
| | 4 | 4,82 | 2,856 | 2214 | 4,78 | 2,83 | 1698 |
| | 5 | 4,78 | 2,885 | 2470 | 4,72 | 2,887 | 1894 |
| | 6 | 4,99 | 2,869 | 2407 | 4,94 | 2,86 | 1894 |
| | 7 | 4,68 | 2,812 | 2490 | 4,66 | 2,811 | 1982 |
| Great Britain | 1 | 4,29 | 2,81 | 2575 | 4,39 | 2,843 | 1988 |
| | 2 | 4,41 | 2,844 | 1886 | | | |
| | 3 | 3,97 | 2,932 | 2970 | | | |
| | 4 | 4,03 | 2,992 | 2343 | 4,03 | 3,01 | 2283 |
| | 5 | 3,89 | 2,965 | 2398 | 3,96 | 2,929 | 2319 |
| | 6 | 4 | 2,984 | 2251 | 4,18 | 2,985 | 2183 |
| | 7 | 3,74 | 3,052 | 2256 | 3,83 | 3,044 | 2202 |
| Greece | 1 | 7,56 | 2,195 | 2558 | 7,69 | 2,194 | 2487 |
| | 2 | 7,17 | 2,194 | 2391 | 7,34 | 2,15 | 2325 |
| | 4 | 6,43 | 2,494 | 2066 | 6,3 | 2,536 | 1991 |
| | 5 | 6,24 | 2,492 | 2693 | 6,16 | 2,5 | 2599 |
| Hungary | 1 | 4,37 | 3,037 | 1771 | 4,38 | 3,034 | 1644 |
| | 2 | 3,99 | 3,028 | 1486 | | | |
| | 3 | 4,12 | 3,119 | 1588 | 4,43 | 3,143 | 1441 |
| | 4 | 4,32 | 3,203 | 1539 | 4,3 | 3,225 | 1469 |
| | 5 | 4,21 | 3,159 | 1553 | 4,22 | 3,173 | 1514 |
| | 6 | 4,01 | 3,003 | 1963 | 4,02 | 3,024 | 1877 |
| | 7 | 3,58 | 2,879 | 1674 | 3,65 | 2,898 | 1601 |
| Ireland | 1 | 5,61 | 2,466 | 2030 | 5,81 | 2,426 | 1890 |

| How religious are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| | 2 | 5,67 | 2,425 | 2267 | 6,02 | 2,402 | 2149 |
| | 3 | 5,27 | 2,6 | 1791 | 5,43 | 2,551 | 1548 |
| | 4 | 5,39 | 2,468 | 1760 | 5,54 | 2,504 | 1739 |
| | 5 | 4,83 | 2,627 | 2569 | 4,93 | 2,637 | 2493 |
| | 6 | 4,9 | 2,686 | 2614 | 5,09 | 2,698 | 2549 |
| | 7 | 4,95 | 2,715 | 2381 | 5,23 | 2,702 | 2286 |
| Netherlands | 1 | 4,98 | 2,945 | 2360 | 5,13 | 2,905 | 2305 |
| | 2 | 4,91 | 2,995 | 1874 | 5,03 | 3,013 | 1834 |
| | 3 | 4,87 | 3,079 | 1884 | 4,87 | 3,075 | 1855 |
| | 4 | 4,86 | 3,001 | 1772 | 4,85 | 3,015 | 1733 |
| | 5 | 4,64 | 3,093 | 1822 | 4,77 | 3,103 | 1769 |
| | 6 | 4,51 | 3,19 | 1841 | 4,55 | 3,162 | 1812 |
| | 7 | 4,11 | 3,168 | 1917 | 4,24 | 3,133 | 1873 |
| Norway | 1 | 4,13 | 2,592 | 2029 | 4,1 | 2,56 | 2004 |
| | 2 | 3,98 | 2,675 | 1755 | 3,98 | 2,674 | 1741 |
| | 3 | 3,79 | 2,679 | 1740 | 3,8 | 2,703 | 1729 |
| | 4 | 3,78 | 2,683 | 1547 | 3,72 | 2,703 | 1531 |
| | 5 | 3,93 | 2,765 | 1542 | 3,9 | 2,78 | 1525 |
| | 6 | 3,8 | 2,841 | 1619 | 3,8 | 2,849 | 1603 |
| | 7 | 3,61 | 2,768 | 1432 | 3,6 | 2,781 | 1416 |
| Poland | 1 | 6,6 | 2,404 | 2087 | 6,56 | 2,445 | 1974 |
| | 2 | 6,57 | 2,393 | 1699 | 6,58 | 2,392 | 1619 |
| | 3 | 6,54 | 2,332 | 1713 | 6,5 | 2,377 | 1615 |
| | 4 | 6,44 | 2,373 | 1604 | 6,42 | 2,394 | 1495 |
| | 5 | 6,19 | 2,458 | 1742 | 6,15 | 2,524 | 1570 |
| | 6 | 6,22 | 2,601 | 1865 | 6,18 | 2,649 | 1724 |
| | 7 | 6,32 | 2,586 | 1587 | 6,35 | 2,597 | 1466 |
| Portugal | 1 | 5,65 | 2,549 | 1501 | 5,66 | 2,505 | 1416 |
| | 2 | 5,22 | 2,54 | 2026 | 5,35 | 2,621 | 1953 |
| | 3 | 5,6 | 2,412 | 2125 | 5,8 | 2,448 | 1917 |
| | 4 | 5,75 | 2,413 | 2339 | 5,95 | 2,498 | 2162 |
| | 5 | 5,41 | 2,482 | 2140 | 5,75 | 2,574 | 1887 |
| | 6 | 5,09 | 2,695 | 2144 | 5,25 | 2,793 | 1984 |
| | 7 | 5,26 | 2,854 | 1260 | 5,42 | 2,797 | 1216 |
| Russia | 3 | 4,14 | 2,743 | 2381 | 4,22 | 2,769 | 2048 |
| | 4 | 4,44 | 2,705 | 2482 | 4,47 | 2,724 | 2120 |
| | 5 | 4,63 | 2,727 | 2548 | 4,64 | 2,773 | 2250 |
| | 6 | 4,37 | 2,771 | 2425 | 4,49 | 2,797 | 2126 |
| Switzerland | 1 | 5,15 | 2,77 | 2022 | 5,2 | 2,787 | 1951 |
| | 2 | 5,4 | 2,851 | 2129 | 5,48 | 2,853 | 2075 |
| | 3 | 5,41 | 2,826 | 1794 | 5,5 | 2,841 | 1755 |
| | 4 | 5,02 | 2,995 | 1803 | 5,04 | 3,011 | 1750 |
| | 5 | 5,1 | 2,923 | 1500 | 5,07 | 2,898 | 1460 |
| | 6 | 4,99 | 2,993 | 1478 | 5 | 2,974 | 1447 |
| | 7 | 4,97 | 2,981 | 1524 | 4,97 | 2,979 | 1485 |

| How religious are you | | Total weighted | | | Filtered unweighted | | |
|---|---|---|---|---|---|---|---|
| **Country** | **ESS round** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **N** |
| Slovakia | 2 | 5,89 | 3,03 | 1500 | 5,76 | 3,002 | 1343 |
| | 3 | 5,91 | 2,973 | 1747 | 5,92 | 2,93 | 1600 |
| | 4 | 5,83 | 3,18 | 1798 | 6,08 | 3,176 | 1703 |
| | 5 | 5,83 | 3,083 | 1951 | 6,05 | 3,078 | 1727 |
| | 6 | 5,94 | 3,038 | 1816 | 6,07 | 3,081 | 1717 |
| Slovenia | 1 | 4,89 | 2,831 | 1507 | 4,84 | 2,854 | 1452 |
| | 2 | 4,83 | 2,764 | 1417 | 4,88 | 2,76 | 1327 |
| | 3 | 4,69 | 2,958 | 1457 | 4,69 | 2,98 | 1398 |
| | 4 | 4,63 | 2,913 | 1234 | 4,67 | 2,921 | 1191 |
| | 5 | 4,59 | 2,877 | 1302 | 4,61 | 2,876 | 1228 |
| | 6 | 4,46 | 3,147 | 1246 | 4,52 | 3,14 | 1217 |
| | 7 | 4,43 | 3,049 | 1215 | 4,46 | 3,025 | 1186 |
| Spain | 1 | 4,38 | 2,692 | 1710 | 4,44 | 2,714 | 1464 |
| | 2 | 4,48 | 2,893 | 1654 | 4,42 | 2,868 | 1562 |
| | 3 | 4,62 | 2,881 | 1869 | 4,57 | 2,902 | 1724 |
| | 4 | 4,5 | 2,876 | 2559 | 4,5 | 2,894 | 2441 |
| | 5 | 4,47 | 2,839 | 1877 | 4,41 | 2,816 | 1817 |
| | 6 | 4,39 | 3,052 | 1882 | 4,47 | 3,05 | 1830 |
| | 7 | 4,15 | 2,948 | 1918 | 4,13 | 2,938 | 1825 |
| Sweden | 1 | 3,72 | 2,808 | 2079 | 3,7 | 2,793 | 1934 |
| | 2 | 3,54 | 2,734 | 1936 | 3,58 | 2,746 | 1893 |
| | 3 | 3,55 | 2,783 | 2139 | 3,55 | 2,768 | 1877 |
| | 4 | 3,37 | 2,79 | 1825 | 3,37 | 2,772 | 1800 |
| | 5 | 3,43 | 2,797 | 1494 | 3,45 | 2,763 | 1476 |
| | 6 | 3,19 | 2,893 | 1843 | 3,2 | 2,899 | 1798 |
| | 7 | 3,11 | 2,808 | 1782 | 3,17 | 2,802 | 1738 |
| Ukraine | 2 | 4,88 | 2,578 | 1982 | 4,98 | 2,63 | 1730 |
| | 3 | 5,18 | 2,828 | 1948 | 5,29 | 2,739 | 1679 |
| | 4 | 4,89 | 2,782 | 1802 | 5,24 | 2,795 | 1498 |
| | 5 | 5,01 | 2,518 | 1888 | 5,28 | 2,588 | 1595 |
| | 6 | 4,93 | 2,668 | 2147 | 5,06 | 2,662 | 1804 |

## *Appendix 3*. Spearman's rank correlations between religiosity measures

*Note: All values displayed are significant at the 0,001 level.*

| | **How often attend religious services apart from special occasions** | **How often pray apart from at religious services** | **How religious are you (scale reversed in original, converted to 0: very religious, 10: not at all religious)** |
|---|---|---|---|
| **Belonging to particular religion or denomination (1: yes, 2: no)** | 0,563246 | 0,577844 | 0,56641 |
| **How often attend religious services apart from special occasions (1: every day, 7: never)** | | 0,663043 | 0,61919 |
| **How often pray apart from at religious services (1: every day, 7: never)** | | | 0,70896 |

## *Appendix 4*. Religiosity measures

*Note: mean values and percentages weighted by pspweight*

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Total weighted | Filtered unweighted | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| Total (Grand mean) | | 59,7% | 59,9% | 12,68 | 35,496 | 297890 | 13,12 | 36,264 | 83,98 | 142,776 | 294289 | 87,1 | 144,884 |
| Austria | 1 | 71,1% | 69,7% | 20,17 | 54,609 | 2236 | 18,25 | 49,631 | 87,03 | 138,432 | 2191 | 88,05 | 139,602 |
| | 2 | 74,2% | 71,6% | 16,14 | 43,554 | 2232 | 15,36 | 42,77 | 87,55 | 139,357 | 2183 | 82,84 | 136,231 |
| | 3 | 73,0% | 72,7% | 15,33 | 39,006 | 2386 | 15,11 | 41,015 | 81,75 | 137,104 | 2285 | 79,24 | 135,296 |
| | 7 | 70,6% | 72,8% | 10,52 | 18,902 | 1794 | 10,69 | 18,978 | 66,6 | 122,312 | 1751 | 67,04 | 121,962 |
| Belgium | 1 | 49,8% | 49,1% | 9,62 | 30,194 | 1887 | 8,34 | 25,381 | 69,66 | 132,535 | 1874 | 62,02 | 125,298 |
| | 2 | 46,0% | 45,5% | 7,92 | 27,209 | 1776 | 7,99 | 28,042 | 67,34 | 132,096 | 1760 | 63,15 | 128,422 |
| | 3 | 43,8% | 43,5% | 7,71 | 23,539 | 1798 | 7,63 | 25,045 | 67,07 | 131,77 | 1795 | 65,65 | 130,639 |
| | 4 | 44,2% | 43,8% | 8,09 | 28,531 | 1758 | 7,77 | 28,725 | 65,45 | 130,628 | 1754 | 62,42 | 127,99 |
| | 5 | 42,2% | 41,7% | 8,43 | 33,289 | 1704 | 8,04 | 32,936 | 59,5 | 127,017 | 1704 | 56,04 | 123,287 |
| | 6 | 41,4% | 40,2% | 7,37 | 28,974 | 1869 | 7,04 | 27,972 | 57,67 | 123,981 | 1864 | 54,29 | 120,742 |
| | 7 | 41,2% | 40,0% | 8,15 | 30,21 | 1767 | 7,54 | 28,714 | 62,16 | 128,571 | 1762 | 56,72 | 123,433 |
| Bulgaria | 3 | 75,7% | | 5,85 | 18,041 | 1380 | | | 36,05 | 96,471 | 1338 | | |
| | 4 | 79,3% | 80,6% | 8,35 | 32,087 | 2213 | 8,31 | 30,709 | 47,17 | 111,076 | 2153 | 47,84 | 111,599 |
| | 5 | 80,0% | 81,4% | 8,89 | 32,432 | 2412 | 9,09 | 32,543 | 41,25 | 102,026 | 2340 | 43,64 | 104,657 |
| | 6 | 77,6% | 79,7% | 8,96 | 30,314 | 2238 | 10,27 | 33,928 | 50,97 | 112,788 | 2206 | 58,36 | 119,815 |
| Cyprus | 3 | 98,6% | | 22,09 | 46,056 | 991 | | | 154,12 | 161,937 | 941 | | |
| | 4 | 99,4% | 99,5% | 21,36 | 34,746 | 1211 | 20,81 | 34,072 | 154,4 | 163,8 | 1199 | 155,25 | 164,677 |
| | 5 | 98,4% | 98,9% | 20,93 | 41,072 | 1075 | 23,92 | 43,597 | 171,86 | 166,911 | 1021 | 178,95 | 167,06 |
| | 6 | 97,8% | 97,3% | 19,42 | 34,734 | 1115 | 21,54 | 39,002 | 187,42 | 166,259 | 1101 | 196,75 | 165,985 |

| | | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| **Country** | **ESS round** | **Total weighted** | **Filtered unweighted** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** |
| Czech Republic | 1 | 27,9% | 32,2% | 5,89 | 18,832 | 1343 | 7,37 | 24,838 | 35,11 | 101,57 | 1323 | 42,03 | 110,222 |
| | 2 | 26,6% | 29,5% | 6,13 | 25,638 | 2985 | 6,81 | 26,743 | 29,22 | 92,417 | 2966 | 31,71 | 95,842 |
| | 4 | 23,3% | 23,6% | 5,71 | 23,761 | 2002 | 5,54 | 23,29 | 22,73 | 79,752 | 1992 | 24,94 | 84,183 |
| | 5 | 21,9% | 22,6% | 4,36 | 19,972 | 2376 | 4,31 | 17,06 | 20,55 | 76,991 | 2362 | 22,02 | 79,608 |
| | 6 | 19,2% | 20,6% | 5,2 | 25,082 | 1946 | 5,27 | 25,198 | 18,32 | 71,553 | 1968 | 19,41 | 73,791 |
| | 7 | 17,5% | 17,3% | 6,55 | 27,276 | 2133 | 6,07 | 24,931 | 24,23 | 81,575 | 2129 | 25,15 | 84,03 |
| Denmark | 1 | 56,4% | 57,7% | 4,15 | 20,828 | 1497 | 3,95 | 19,282 | 49,36 | 118,621 | 1467 | 47,69 | 116,652 |
| | 2 | 60,5% | 62,3% | 5,03 | 24,569 | 1484 | 4,53 | 19,661 | 53,75 | 122,006 | 1457 | 51,66 | 119,712 |
| | 3 | 60,0% | 63,0% | 4,04 | 18,201 | 1500 | 4,64 | 20,01 | 40,62 | 107,125 | 1493 | 44,31 | 111,219 |
| | 4 | 56,0% | 59,6% | 4,59 | 22,328 | 1609 | 4,36 | 19,123 | 42,49 | 110,637 | 1598 | 45,44 | 113,676 |
| | 5 | 57,6% | 59,7% | 4,74 | 23,778 | 1576 | 4,94 | 26,136 | 42,04 | 110,063 | 1566 | 42,82 | 110,867 |
| | 6 | 54,5% | 56,2% | 4,96 | 22,407 | 1643 | 4,77 | 19,777 | 38,46 | 105,704 | 1643 | 40,83 | 109,239 |
| | 7 | 55,5% | 55,9% | 6,54 | 31,008 | 1497 | 6,48 | 30,547 | 42,94 | 110,63 | 1488 | 42,05 | 109,499 |
| Estonia | 2 | 21,4% | 22,8% | 4,05 | 16,404 | 1984 | 4,21 | 16,199 | 21,69 | 78,375 | 1980 | 23,09 | 80,734 |
| | 3 | 27,6% | 28,9% | 3,36 | 13,795 | 1505 | 3,41 | 13,847 | 29,16 | 92,897 | 1496 | 32,83 | 98,399 |
| | 4 | 25,2% | 26,2% | 3,31 | 11,983 | 1658 | 3,45 | 13,146 | 23,48 | 82,881 | 1648 | 24,38 | 83,997 |
| | 5 | 18,5% | 20,3% | 3,66 | 13,903 | 1789 | 3,74 | 13,842 | 25,46 | 87,302 | 1788 | 28,03 | 91,571 |
| | 6 | 28,6% | 29,7% | 3,73 | 16,536 | 2371 | 3,91 | 16,881 | 28,84 | 91,603 | 2354 | 31,15 | 95,044 |
| | 7 | 33,6% | 35,5% | 4,51 | 18,172 | 2043 | 4,94 | 20,25 | 38,84 | 102,823 | 2023 | 44,15 | 108,909 |
| Finland | 1 | 75,8% | 75,8% | 4,93 | 16,639 | 1999 | 5 | 17,033 | 90,47 | 146,771 | 1984 | 89,67 | 146,217 |
| | 2 | | | 4,98 | 14,965 | 2018 | | | 92,61 | 148,864 | 2014 | | |
| | 3 | 61,00% | 62,30% | 5,02 | 15,342 | 1894 | 5,11 | 15,543 | 82,16 | 142,785 | 1888 | 85,84 | 145,263 |
| | 4 | 58,40% | 58,90% | 5,45 | 15,953 | 2194 | 5,49 | 16,143 | 80,82 | 141,196 | 2188 | 82,86 | 142,686 |

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 5 | 59,80% | 60,80% | 6,53 | 23,12 | 1875 | 6,73 | 23,714 | 83,95 | 143,876 | 1871 | 86,95 | 145,873 |
| | 6 | 49,00% | 50,00% | 4,55 | 13,012 | 2196 | 4,56 | 12,953 | 73,25 | 137,485 | 2189 | 75,49 | 138,983 |
| | 7 | 48,60% | 50,40% | 5,41 | 16,958 | 2085 | 5,5 | 17,792 | 73,14 | 137,071 | 2078 | 78,16 | 140,408 |
| France | 1 | 49,20% | | 7,67 | 30,702 | 1512 | | | 54,37 | 121,22 | 1501 | | |
| | 2 | 48,90% | | 6,67 | 29,253 | 1815 | | | 45,57 | 111,448 | 1809 | | |
| | 3 | 48,70% | 48,60% | 6,82 | 25,844 | 1983 | 6,73 | 27,937 | 45,92 | 109,882 | 1982 | 45,21 | 109,294 |
| | 4 | 47,60% | 48,30% | 5,94 | 26,007 | 2069 | 5,56 | 23,473 | 43,23 | 107,412 | 2060 | 43,34 | 106,833 |
| | 5 | 49,10% | 48,40% | 8,46 | 35,766 | 1726 | 7,08 | 29,613 | 52,73 | 119,329 | 1722 | 49,64 | 115,377 |
| | 6 | 48,00% | 48,00% | 7,14 | 33,852 | 1960 | 6,13 | 28,794 | 52,66 | 119,155 | 1961 | 49,43 | 115,068 |
| | 7 | 49,40% | 49,70% | 7,31 | 25,887 | 1916 | 6,85 | 25,476 | 57,92 | 124,791 | 1915 | 54,23 | 120,871 |
| Germany (Eastern part) | 1 | 31,0% | 30,4% | 3,53 | 14,74 | 581 | 3,64 | 15,68 | 30,81 | 93,049 | 574 | 29,84 | 91,498 |
| | 2 | 27,0% | 26,3% | 3,03 | 14,838 | 532 | 3,01 | 15,363 | 20,51 | 76,058 | 522 | 20,91 | 76,757 |
| | 3 | 31,4% | 30,9% | 7,48 | 37,978 | 573 | 4,35 | 16,976 | 32,85 | 96,877 | 571 | 29,63 | 91,453 |
| | 4 | 31,6% | 28,5% | 4,22 | 19,857 | 524 | 3,91 | 19,755 | 37,87 | 103,185 | 519 | 32,66 | 95,797 |
| | 5 | 29,2% | 28,5% | 2,97 | 13,955 | 552 | 3,13 | 14,846 | 32,33 | 97,619 | 549 | 29,05 | 92,782 |
| | 6 | 29,4% | 29,3% | 3,29 | 15,072 | 540 | 3,23 | 15,696 | 31,09 | 95,5 | 539 | 31 | 95,232 |
| | 7 | 28,8% | 29,1% | 3,67 | 16,781 | 549 | 3,3 | 15,589 | 30,93 | 95,403 | 546 | 30,23 | 94,371 |
| Germany (Western part) | 1 | 70,70% | 68,70% | 10,21 | 26,459 | 2401 | 9,1 | 24,044 | 79,67 | 136,128 | 2383 | 71,09 | 129,839 |
| | 2 | 69,90% | 69,60% | 10,2 | 26,42 | 2321 | 9,65 | 25,925 | 77,46 | 134,692 | 2280 | 76,16 | 133,759 |
| | 3 | 72,30% | 71,80% | 9,69 | 26,697 | 2327 | 9,72 | 28,354 | 72,62 | 132,627 | 2296 | 70,03 | 130,704 |
| | 4 | 68,00% | 68,20% | 10,8 | 34,282 | 2215 | 10,11 | 30,889 | 79,66 | 139,394 | 2182 | 75,31 | 135,453 |
| | 5 | 70,70% | 69,80% | 8,96 | 23,934 | 2470 | 8,32 | 22,91 | 75,12 | 132,791 | 2439 | 71,01 | 129,505 |

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 6 | 70,60% | 70,10% | 9,71 | 29,596 | 2411 | 9,55 | 28,503 | 87,88 | 143,973 | 2389 | 84,25 | 141,467 |
| | 7 | 68,00% | 67,70% | 8,09 | 20,921 | 2491 | 7,99 | 19,925 | 82,11 | 139,842 | 2464 | 79,91 | 138,442 |
| Great Britain | 1 | 49,00% | 49,50% | 11,88 | 39,491 | 2578 | 11,33 | 36,479 | 79,55 | 141,045 | 2567 | 82,97 | 143,413 |
| | 2 | 51,00% | | 12,67 | 40,477 | 1893 | | | 79,82 | 139,745 | 1882 | | |
| | 3 | 46,30% | | 11,12 | 36,793 | 2974 | | | 76,24 | 138,595 | 2960 | | |
| | 4 | 46,80% | 47,10% | 13,73 | 48,92 | 2348 | 12,4 | 44,103 | 76,68 | 139,697 | 2340 | 77,09 | 139,874 |
| | 5 | 44,30% | 45,20% | 11,4 | 41,449 | 2413 | 9,66 | 33,147 | 74,25 | 139,179 | 2408 | 75,66 | 139,824 |
| | 6 | 47,30% | 50,20% | 12,4 | 40,298 | 2284 | 11,29 | 35,837 | 69,54 | 133,031 | 2277 | 76,85 | 138,238 |
| | 7 | 48,10% | 49,00% | 11,25 | 36,304 | 2258 | 10,2 | 32,991 | 72,47 | 137,236 | 2255 | 74,2 | 138,298 |
| Greece | 1 | 97,10% | 97,10% | 21,92 | 41,561 | 2559 | 23,8 | 42,118 | 181,45 | 165,071 | 2533 | 193,4 | 165,503 |
| | 2 | 90,00% | 90,50% | 18,67 | 33,581 | 2402 | 20,85 | 35,423 | 173,85 | 165,096 | 2377 | 184,9 | 165,653 |
| | 4 | 91,90% | 90,80% | 17,9 | 40,973 | 2067 | 16,23 | 36,309 | 143,41 | 158,815 | 2040 | 134,67 | 156,827 |
| | 5 | 92,20% | 92,00% | 19,39 | 39,669 | 2707 | 19,06 | 38,57 | 167,09 | 164,617 | 2697 | 164,23 | 164,242 |
| Hungary | 1 | 62,10% | 63,00% | 9,13 | 29,622 | 1774 | 9,19 | 28,916 | 84,69 | 145,422 | 1763 | 86,04 | 146,371 |
| | 2 | 53,80% | | 7,59 | 22,554 | 1492 | | | 67,36 | 132,79 | 1480 | | |
| | 3 | 56,50% | 60,70% | 9,23 | 29,912 | 1598 | 9,75 | 29,056 | 75,18 | 137,782 | 1587 | 89,56 | 147,399 |
| | 4 | 62,30% | 59,50% | 7,53 | 21,855 | 1540 | 7,81 | 24,6 | 79,23 | 141,67 | 1525 | 75,76 | 138,638 |
| | 5 | 58,80% | 59,20% | 8,09 | 27,527 | 1557 | 8,41 | 28,875 | 71,89 | 136,483 | 1545 | 73,73 | 138,043 |
| | 6 | 47,80% | 48,50% | 6,85 | 27,743 | 1963 | 6,93 | 28,355 | 56,44 | 121,475 | 1931 | 57 | 121,807 |
| | 7 | 48,60% | 50,30% | 6,86 | 25,893 | 1677 | 7,18 | 26,195 | 50,6 | 114,95 | 1643 | 53,27 | 117,388 |
| Ireland | 1 | 81,10% | 83,50% | 39,18 | 62,456 | 2042 | 43,01 | 66,873 | 177,99 | 167,198 | 2035 | 193,86 | 167,588 |
| | 2 | 86,20% | 87,60% | 41,18 | 65,53 | 2281 | 50,25 | 75,6 | 179,91 | 167,153 | 2266 | 208,83 | 166,924 |
| | 3 | 79,30% | 80,70% | 35,98 | 62,444 | 1798 | 37,9 | 63,109 | 164,9 | 167,595 | 1785 | 177,15 | 169,048 |

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Total weighted | Filtered unweighted | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 4 | 78,90% | 80,60% | 33,38 | 61,345 | 1764 | 38,22 | 68,316 | 164,52 | 166,439 | 1764 | 189,12 | 168,767 |
| | 5 | 77,10% | 78,80% | 29,52 | 54,86 | 2573 | 34,03 | 63,178 | 140,77 | 162,599 | 2566 | 151,86 | 165,12 |
| | 6 | 76,50% | 78,00% | 29,12 | 56,327 | 2618 | 32,33 | 59,199 | 139,03 | 160,221 | 2610 | 150,02 | 162,943 |
| | 7 | 73,70% | 76,20% | 27,35 | 52,261 | 2376 | 32,48 | 58,561 | 132,88 | 159,342 | 2361 | 151,6 | 163,764 |
| Netherlands | 1 | 42,50% | 43,70% | 9,07 | 22,448 | 2362 | 9,13 | 20,821 | 97,54 | 155,333 | 2357 | 102,09 | 157,071 |
| | 2 | 44,70% | 46,50% | 10,24 | 27,801 | 1879 | 10,41 | 28,426 | 95,01 | 153,691 | 1872 | 100,06 | 155,875 |
| | 3 | 41,00% | 40,30% | 10,56 | 28,527 | 1889 | 9,77 | 24,701 | 93,38 | 152,941 | 1886 | 90,58 | 151,013 |
| | 4 | 41,30% | 41,00% | 11 | 31,555 | 1778 | 10,66 | 31,036 | 89,42 | 149,9 | 1774 | 91,69 | 151,079 |
| | 5 | 39,80% | 40,90% | 10 | 31,048 | 1826 | 10,5 | 33,064 | 86,61 | 149,753 | 1823 | 90,8 | 152,131 |
| | 6 | 36,30% | 36,90% | 8,66 | 20,747 | 1844 | 8,05 | 20,561 | 89,68 | 151,606 | 1841 | 87,97 | 150,018 |
| | 7 | 35,90% | 37,40% | 7,82 | 22,816 | 1919 | 7,43 | 21,209 | 74,2 | 140,828 | 1916 | 78,24 | 143,837 |
| Norway | 1 | 50,30% | 50,80% | 4,97 | 17,338 | 2035 | 5,06 | 17,572 | 59,46 | 127,319 | 2017 | 56,84 | 124,55 |
| | 2 | 50,10% | 50,30% | 5,1 | 16,803 | 1759 | 5,19 | 18,099 | 55,87 | 122,716 | 1752 | 54,65 | 121,2 |
| | 3 | 55,10% | 54,40% | 5,67 | 21,733 | 1745 | 5,53 | 20,169 | 55,87 | 124,198 | 1729 | 55,03 | 123,096 |
| | 4 | 57,20% | 56,10% | 4,05 | 11,904 | 1546 | 3,96 | 11,828 | 50,18 | 118,18 | 1536 | 47,83 | 115,676 |
| | 5 | 59,10% | 58,60% | 5,06 | 17,725 | 1548 | 5,04 | 18,543 | 56,42 | 124,118 | 1538 | 54,89 | 122,326 |
| | 6 | 50,80% | 50,90% | 5,76 | 25,841 | 1620 | 5,5 | 22,362 | 52,39 | 121,032 | 1611 | 53,04 | 121,451 |
| | 7 | 49,20% | 48,20% | 4,66 | 15,61 | 1436 | 4,82 | 16,592 | 49,29 | 116,946 | 1428 | 49,25 | 116,892 |
| Poland | 1 | 93,20% | 92,70% | 37,59 | 41,61 | 2096 | 37,44 | 41,311 | 191,91 | 166,575 | 2023 | 188,19 | 166,932 |
| | 2 | 92,20% | 92,00% | 36,94 | 39,331 | 1713 | 36,63 | 37,546 | 184,51 | 165,962 | 1663 | 181,37 | 165,68 |
| | 3 | 92,80% | 92,10% | 37,1 | 45,358 | 1715 | 36,88 | 45,629 | 193,67 | 165,832 | 1660 | 190,4 | 166,266 |
| | 4 | 92,50% | 92,10% | 35,38 | 42,09 | 1606 | 35,02 | 40,546 | 176,13 | 165,047 | 1539 | 175,45 | 165,351 |
| | 5 | 91,00% | 90,20% | 36,23 | 46,43 | 1739 | 36,71 | 48,75 | 170,13 | 165,596 | 1673 | 168,94 | 165,774 |

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 6 | 89,70% | 89,10% | 34,12 | 44,953 | 1867 | 33,66 | 43,834 | 166,09 | 165,651 | 1800 | 164,69 | 165,725 |
| | 7 | 90,40% | 90,40% | 34,37 | 42,445 | 1600 | 34,98 | 42,842 | 158,69 | 163,213 | 1548 | 162,92 | 163,81 |
| Portugal | 1 | 85,00% | 84,80% | 23,27 | 47,386 | 1492 | 24,77 | 51,694 | 137,72 | 160,289 | 1480 | 149,4 | 164,019 |
| | 2 | 87,80% | 86,80% | 20,67 | 35,374 | 2040 | 21,49 | 39,439 | 119,71 | 153,184 | 2023 | 128,05 | 156,82 |
| | 3 | 85,60% | 86,70% | 22,02 | 43,272 | 2176 | 23,44 | 44,479 | 121,69 | 153,744 | 2086 | 137 | 158,169 |
| | 4 | 86,30% | 87,20% | 24,38 | 50,686 | 2308 | 27,61 | 56,398 | 133,29 | 158,569 | 2265 | 152,28 | 164,261 |
| | 5 | 84,70% | 85,30% | 20,27 | 40,78 | 2118 | 24,85 | 49,142 | 122,14 | 155,001 | 2031 | 149,01 | 163,802 |
| | 6 | 82,80% | 83,00% | 17,06 | 36,51 | 2132 | 19,98 | 39,956 | 100,87 | 149,033 | 2076 | 116,94 | 155,966 |
| | 7 | 72,50% | 75,90% | 22,63 | 46,933 | 1263 | 23,89 | 49,266 | 143,7 | 166,869 | 1256 | 155,59 | 169,036 |
| Russia | 3 | 48,60% | 50,70% | 6,19 | 29,965 | 2357 | 6,03 | 26,791 | 54,72 | 121,265 | 2264 | 61,23 | 127,615 |
| | 4 | 54,00% | 55,40% | 7,32 | 31,458 | 2410 | 7,79 | 32,035 | 55,98 | 121,202 | 2310 | 64,04 | 128,415 |
| | 5 | 57,60% | 59,90% | 5,72 | 20,823 | 2508 | 6,39 | 23,011 | 60,91 | 123,925 | 2406 | 64,88 | 126,613 |
| | 6 | 55,60% | 57,10% | 10,07 | 39,26 | 2417 | 9,24 | 35,161 | 62,85 | 127,244 | 2338 | 66,47 | 129,986 |
| Switzerland | 1 | 61,6% | 62,4% | 10,47 | 30,417 | 2034 | 10,75 | 32,837 | 111,98 | 156,324 | 2001 | 118,4 | 159,086 |
| | 2 | 69,3% | 70,6% | 10,71 | 25,247 | 2138 | 11,07 | 27,817 | 117,04 | 157,416 | 2122 | 126,65 | 161,036 |
| | 3 | 70,5% | 69,6% | 10,01 | 25,075 | 1803 | 10,13 | 26,149 | 117,1 | 159,415 | 1786 | 122,91 | 161,328 |
| | 4 | 68,4% | 67,8% | 10,52 | 34,262 | 1815 | 10,55 | 33,114 | 98,06 | 150,964 | 1804 | 104,76 | 154,178 |
| | 5 | 67,8% | 68,2% | 9,71 | 29,692 | 1502 | 9,28 | 28,074 | 102,5 | 152,548 | 1491 | 99,51 | 150,675 |
| | 6 | 63,8% | 64,5% | 8,54 | 23,117 | 1489 | 8,51 | 22,985 | 93,35 | 145,97 | 1479 | 93,16 | 145,755 |
| | 7 | 62,7% | 64,1% | 8,69 | 27,462 | 1528 | 8,81 | 27,781 | 95,35 | 149,134 | 1510 | 96,05 | 149,472 |
| Slovakia | 2 | 75,70% | 75,30% | 27,3 | 55,532 | 1505 | 26,53 | 53,589 | 135,1 | 165,761 | 1497 | 127,73 | 163,439 |
| | 3 | 76,00% | 76,40% | 28,47 | 61,939 | 1753 | 28,4 | 60,915 | 123,65 | 161,318 | 1747 | 123,16 | 160,698 |
| | 4 | 75,60% | 77,20% | 27,73 | 58,048 | 1803 | 33,93 | 67,796 | 123,71 | 160,16 | 1794 | 143,63 | 165,776 |

| Country | ESS round | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Total weighted | Filtered unweighted | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 5 | 78,40% | 79,90% | 26,03 | 47,625 | 1987 | 30,03 | 57,038 | 123,55 | 157,854 | 1987 | 143,87 | 165,327 |
| | 6 | 77,10% | 77,40% | 27,71 | 55,441 | 1834 | 29,67 | 56,614 | 108,8 | 152,237 | 1823 | 120,55 | 156,906 |
| Slovenia | 1 | 51,00% | 50,50% | 13,57 | 24,254 | 1510 | 13,34 | 24,702 | 67,65 | 129,622 | 1495 | 66,83 | 129,048 |
| | 2 | 69,40% | 69,70% | 12,88 | 31,19 | 1435 | 12,54 | 29,257 | 58,55 | 123,053 | 1418 | 62,31 | 126,579 |
| | 3 | 49,80% | 49,70% | 13,67 | 31,756 | 1472 | 13,59 | 30,855 | 65,33 | 130,839 | 1460 | 66,56 | 131,833 |
| | 4 | 55,20% | 56,20% | 12,58 | 31,887 | 1251 | 13,09 | 33,25 | 59,79 | 124,354 | 1234 | 61,62 | 125,989 |
| | 5 | 54,10% | 55,20% | 10,69 | 26,205 | 1397 | 11,41 | 27,562 | 53,81 | 119,144 | 1382 | 56,02 | 120,861 |
| | 6 | 55,50% | 55,60% | 10,02 | 24,704 | 1255 | 10,36 | 25,619 | 51,61 | 117,218 | 1248 | 53,48 | 118,908 |
| | 7 | 56,30% | 57,70% | 11,11 | 31,185 | 1220 | 11,27 | 31,21 | 56,18 | 120,539 | 1212 | 59,01 | 123,18 |
| Spain | 1 | 77,8% | 78,2% | 17,45 | 46,325 | 1717 | 18 | 45,639 | 81,66 | 139,684 | 1693 | 92,55 | 146,366 |
| | 2 | 73,7% | 73,9% | 17,94 | 49,105 | 1654 | 17,48 | 47,571 | 85 | 142,755 | 1641 | 79,24 | 138,343 |
| | 3 | 69,5% | 69,8% | 16,52 | 45,367 | 1860 | 16,46 | 45,598 | 98,63 | 153,367 | 1849 | 98,93 | 153,832 |
| | 4 | 71,8% | 72,0% | 14,24 | 41,238 | 2556 | 13,6 | 38,226 | 83,74 | 140,709 | 2539 | 83,98 | 141,402 |
| | 5 | 68,5% | 68,3% | 13,7 | 41,862 | 1882 | 12,82 | 39,049 | 86,58 | 144,453 | 1877 | 86,19 | 144,227 |
| | 6 | 64,1% | 65,8% | 16,42 | 50,633 | 1884 | 16,85 | 50,694 | 94,38 | 150,624 | 1884 | 96,95 | 151,751 |
| | 7 | 65,6% | 65,7% | 13,36 | 42,798 | 1917 | 13,34 | 43,123 | 92,73 | 151,2 | 1907 | 91,13 | 150,199 |
| Sweden | 1 | 29,20% | 29,20% | 4,42 | 16,411 | 2091 | 4,55 | 16,943 | 39,94 | 106,602 | 2073 | 41,02 | 108,267 |
| | 2 | 32,10% | 32,10% | 4 | 14,899 | 1945 | 4,06 | 14,734 | 39,83 | 106,727 | 1938 | 41,75 | 109,489 |
| | 3 | 31,60% | 31,60% | 4,35 | 17,486 | 2153 | 4,25 | 16,664 | 40,19 | 107,603 | 2143 | 40,69 | 108,434 |
| | 4 | 31,10% | 31,00% | 4,7 | 17,443 | 1830 | 4,51 | 17,401 | 36,17 | 103,106 | 1829 | 35,63 | 102,522 |
| | 5 | 29,20% | 30,10% | 4,14 | 17,379 | 1496 | 4,18 | 17,807 | 37,9 | 104,272 | 1490 | 38,91 | 105,579 |
| | 6 | 32,30% | 32,60% | 6,12 | 23,103 | 1847 | 6,11 | 24,017 | 39,94 | 106,944 | 1845 | 39,7 | 106,696 |
| | 7 | 29,60% | 30,30% | 4,21 | 14,542 | 1787 | 4,4 | 15,603 | 34,56 | 99,924 | 1782 | 34,13 | 98,933 |

| | | Belonging to particular religion or denomination | | How many days a year attend religious services apart from special occasions | | | | | How many days a year pray apart from special occasions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| **Country** | **ESS round** | **Total weighted** | **Filtered unweighted** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** | **Mean** | **Std. Deviation** | **N** | **Mean** | **Std. Deviation** |
| Ukraine | 2 | 70,30% | 72,20% | 11,04 | 32,109 | 2005 | 11,85 | 31,705 | 117,39 | 158,331 | 1915 | 128,78 | 162,479 |
| | 3 | 71,90% | 75,10% | 13,31 | 37,222 | 1931 | 13,96 | 36,833 | 121,9 | 161,63 | 1854 | 124,14 | 161,565 |
| | 4 | 68,90% | 75,40% | 13,72 | 40,424 | 1782 | 16,33 | 43,18 | 102,11 | 151,113 | 1657 | 124,03 | 160,754 |
| | 5 | 70,60% | 74,70% | 11,56 | 31,802 | 1899 | 15,44 | 37,04 | 98,96 | 149,063 | 1813 | 123,27 | 159,625 |
| | 6 | 70,60% | 72,70% | 15 | 42,049 | 2133 | 17,57 | 47,785 | 90,69 | 144,945 | 1982 | 98,67 | 149,182 |

*Appendix 5*. Socio-demographic background

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| Total (Grand mean) | | 51,9% | 53,8% | 45,94 | 18,598 | 298665 | 48,03 | 18,435 | 12,16 | 3,962 | 296619 | 12,27 | 4,058 |
| Austria | 1 | 52,4% | 54,6% | 44,99 | 17,558 | 2238 | 46,67 | 17,027 | 12,39 | 3,145 | 2206 | 12,38 | 3,162 |
| | 2 | 52,3% | 53,7% | 45,15 | 17,947 | 2256 | 43,76 | 17,828 | 12,31 | 3,542 | 2213 | 12,06 | 3,026 |
| | 3 | 51,8% | 54,4% | 45,48 | 18,484 | 2405 | 44,39 | 17,714 | 12,61 | 3,45 | 2364 | 12,56 | 3,048 |
| | 7 | 51,4% | 53,3% | 47,65 | 18,285 | 1789 | 49,25 | 18,098 | 12,86 | 3,743 | 1787 | 12,38 | 3,259 |
| Belgium | 1 | 51,6% | 48,5% | 46,01 | 19,062 | 1814 | 44,81 | 18,024 | 11,52 | 3,654 | 1862 | 12,16 | 3,501 |
| | 2 | 51,5% | 50,9% | 45,89 | 18,909 | 1778 | 45,46 | 18,102 | 11,71 | 3,992 | 1770 | 12,32 | 4 |
| | 3 | 51,5% | 53,2% | 46,19 | 19,082 | 1798 | 46,2 | 18,58 | 11,75 | 3,756 | 1795 | 12,12 | 3,678 |
| | 4 | 51,4% | 51,0% | 46,7 | 19,043 | 1760 | 46,38 | 18,68 | 12,21 | 3,687 | 1759 | 12,65 | 3,647 |
| | 5 | 51,4% | 51,7% | 46,85 | 19,253 | 1704 | 46,62 | 18,73 | 12,22 | 3,811 | 1662 | 12,71 | 3,722 |
| | 6 | 51,6% | 51,2% | 47,95 | 19,629 | 1869 | 47,29 | 19,005 | 12,57 | 3,893 | 1868 | 12,97 | 3,855 |
| | 7 | 51,5% | 49,4% | 47,48 | 19,332 | 1769 | 47,01 | 18,94 | 12,9 | 3,738 | 1768 | 13,27 | 3,669 |
| Bulgaria | 3 | 52,3% | | 46,28 | 18,064 | 1386 | | | 10,95 | 3,369 | 1371 | | |
| | 4 | 52,1% | 56,7% | 47,06 | 17,98 | 2230 | 51,9 | 17,479 | 10,89 | 3,542 | 2219 | 11,08 | 3,62 |
| | 5 | 52,0% | 56,1% | 47,84 | 18,208 | 2430 | 53,4 | 17,863 | 11,22 | 3,492 | 2430 | 11,34 | 3,594 |
| | 6 | 51,8% | 57,8% | 48,18 | 18,025 | 2260 | 54,09 | 16,878 | 11,28 | 3,456 | 2260 | 11,39 | 3,53 |
| Cyprus | 3 | 51,2% | | 43,5 | 17,722 | 986 | | | 11,12 | 3,884 | 995 | | |
| | 4 | 51,6% | 49,4% | 44,16 | 17,796 | 1215 | 44,88 | 17,698 | 11,41 | 4,034 | 1211 | 11,92 | 4,027 |
| | 5 | 51,2% | 56,1% | 44,78 | 18,068 | 1078 | 49,06 | 18,72 | 11,6 | 4,465 | 1075 | 11,05 | 4,733 |
| | 6 | 52,5% | 56,6% | 44,06 | 18,54 | 1114 | 47,67 | 18,479 | 11,94 | 4,033 | 1114 | 11,95 | 4,348 |
| Czech Republic | 1 | 52,1% | 52,3% | 45,16 | 18,554 | 1282 | 51,95 | 17,473 | 12,17 | 2,937 | 1330 | 12,46 | 3,094 |
| | 2 | 51,9% | 53,7% | 44,74 | 18,179 | 2981 | 48,41 | 17,54 | 12,13 | 2,383 | 2922 | 12,22 | 2,373 |
| | 4 | 51,3% | 51,4% | 44,62 | 17,596 | 2018 | 46,91 | 17,431 | 12,42 | 2,501 | 1973 | 12,5 | 2,41 |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 5 | 51,2% | 50,0% | 45,33 | 17,691 | 2386 | 47,2 | 17,373 | 12,76 | 2,678 | 2323 | 12,68 | 2,491 |
| | 6 | 51,1% | 50,9% | 46,09 | 17,559 | 1987 | 48,04 | 16,972 | 12,81 | 2,51 | 1924 | 12,85 | 2,375 |
| | 7 | 51,1% | 53,7% | 46,35 | 17,282 | 2141 | 47,08 | 16,845 | 12,88 | 2,585 | 2083 | 12,82 | 2,407 |
| Denmark | 1 | 51,0% | 49,0% | 46,25 | 17,782 | 1477 | 46,13 | 17,407 | 12,91 | 3,641 | 1491 | 13,26 | 3,651 |
| | 2 | 50,9% | 51,3% | 46,09 | 18,557 | 1480 | 46,71 | 17,446 | 12,67 | 3,567 | 1470 | 13,35 | 3,605 |
| | 3 | 50,8% | 50,7% | 47,13 | 18,382 | 1505 | 49,35 | 17,352 | 12,4 | 4,955 | 1488 | 13,28 | 4,981 |
| | 4 | 50,8% | 50,4% | 46,95 | 18,926 | 1610 | 49,2 | 17,779 | 11,78 | 4,751 | 1597 | 12,68 | 4,696 |
| | 5 | 50,8% | 48,6% | 46,75 | 19,2 | 1576 | 48,46 | 18,228 | 12,82 | 5,264 | 1571 | 13,34 | 5,281 |
| | 6 | 50,8% | 49,5% | 47,4 | 19,465 | 1650 | 48,77 | 18,781 | 12,17 | 5,057 | 1643 | 13,09 | 5,179 |
| | 7 | 50,7% | 47,8% | 47,53 | 19,64 | 1502 | 47,86 | 18,729 | 12,26 | 4,826 | 1492 | 13,12 | 4,841 |
| Estonia | 2 | 55,2% | 59,1% | 44,98 | 19,082 | 1989 | 47,09 | 19,457 | 12,08 | 3,404 | 1986 | 11,95 | 3,546 |
| | 3 | 55,0% | 56,6% | 45,49 | 19,172 | 1515 | 47,56 | 19,239 | 12,28 | 2,952 | 1515 | 12,26 | 3,165 |
| | 4 | 55,2% | 57,8% | 45,36 | 19,007 | 1661 | 47,33 | 19,027 | 12,56 | 3,109 | 1645 | 12,46 | 3,326 |
| | 5 | 55,0% | 60,1% | 45,91 | 19,065 | 1793 | 48,53 | 19,465 | 12,94 | 3,383 | 1792 | 12,64 | 3,463 |
| | 6 | 54,5% | 58,0% | 46,94 | 19,138 | 2380 | 49,41 | 19,535 | 13,01 | 3,262 | 2374 | 12,65 | 3,304 |
| | 7 | 54,3% | 59,5% | 47,6 | 18,791 | 2045 | 50,21 | 19,073 | 13,34 | 3,243 | 2033 | 13,17 | 3,36 |
| Finland | 1 | 51,8% | 51,9% | 45,75 | 18,332 | 2000 | 45,61 | 18,264 | 12 | 3,856 | 1997 | 12,02 | 3,883 |
| | 2 | 51,8% | | 46,28 | 18,509 | 2022 | | | 12,29 | 3,977 | 2018 | | |
| | 3 | 51,7% | 51,6% | 46,75 | 18,961 | 1896 | 48,39 | 18,89 | 12,39 | 4,066 | 1893 | 12,43 | 4,247 |
| | 4 | 51,7% | 51,0% | 47,07 | 18,908 | 2195 | 47,88 | 18,653 | 12,77 | 4,058 | 2191 | 12,88 | 4,127 |
| | 5 | 51,5% | 51,6% | 47,51 | 19,275 | 1878 | 48,86 | 19,044 | 12,78 | 4,192 | 1872 | 13 | 4,37 |
| | 6 | 51,5% | 51,0% | 48,16 | 19,361 | 2197 | 49,65 | 18,666 | 12,97 | 4,114 | 2187 | 13,22 | 4,212 |
| | 7 | 51,4% | 50,9% | 48,65 | 19,545 | 2087 | 51,2 | 18,945 | 13,26 | 4,361 | 2074 | 13,44 | 4,523 |
| France | 1 | 52,0% | | 45,32 | 18,724 | 1514 | | | 11,35 | 3,922 | 1481 | | |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 2 | 52,3% | | 45,3 | 18,863 | 1818 | | | 11,15 | 3,828 | 1779 | | |
| | 3 | 52,3% | 53,0% | 46,19 | 18,521 | 1986 | 47,93 | 17,693 | 11,94 | 3,975 | 1973 | 12,46 | 4,08 |
| | 4 | 52,3% | 54,6% | 46,45 | 19,195 | 2073 | 48,39 | 18,573 | 12,08 | 3,866 | 2050 | 12,56 | 4,072 |
| | 5 | 52,4% | 53,7% | 46,98 | 19,318 | 1728 | 49,24 | 18,43 | 12,06 | 4 | 1717 | 12,36 | 4,005 |
| | 6 | 52,2% | 55,2% | 47,56 | 19,341 | 1968 | 51,72 | 18,454 | 12,07 | 3,908 | 1960 | 12,36 | 4,024 |
| | 7 | 52,2% | 52,4% | 47,46 | 18,929 | 1913 | 49,78 | 18,718 | 12,32 | 3,939 | 1908 | 12,83 | 4,08 |
| Germany (Eastern part) | 1 | 50,3% | 51,2% | 46,31 | 19,195 | 580 | 47,36 | 18,232 | 12,59 | 2,898 | 581 | 12,96 | 2,931 |
| | 2 | 47,1% | 48,3% | 47,81 | 18,771 | 521 | 47,75 | 17,858 | 12,71 | 3,044 | 529 | 13,06 | 2,988 |
| | 3 | 51,6% | 51,1% | 47,01 | 19,645 | 567 | 48,3 | 18,622 | 12,96 | 3,214 | 565 | 13,31 | 3,182 |
| | 4 | 55,3% | 49,4% | 48,97 | 19,4 | 521 | 50,1 | 17,66 | 12,98 | 3,093 | 526 | 13,48 | 3,071 |
| | 5 | 51,1% | 49,5% | 50,63 | 18,359 | 551 | 50,01 | 18,028 | 12,86 | 3,126 | 550 | 13,02 | 3,068 |
| | 6 | 49,8% | 49,0% | 52,13 | 18,118 | 537 | 52,16 | 18,208 | 13,56 | 2,978 | 539 | 13,79 | 3,008 |
| | 7 | 49,4% | 48,9% | 52,11 | 18,525 | 547 | 52,77 | 17,791 | 13,66 | 3,444 | 548 | 14,32 | 3,327 |
| Germany (Western part) | 1 | 52,0% | 51,9% | 47,44 | 18,599 | 2391 | 47,25 | 17,474 | 12,14 | 3,456 | 2392 | 12,79 | 3,503 |
| | 2 | 52,9% | 53,7% | 46,99 | 18,671 | 2284 | 46,2 | 17,656 | 12,36 | 3,42 | 2264 | 12,97 | 3,378 |
| | 3 | 51,7% | 50,7% | 47,49 | 18,786 | 2300 | 47,86 | 17,508 | 12,71 | 3,563 | 2304 | 13,15 | 3,482 |
| | 4 | 50,3% | 45,3% | 47,57 | 18,468 | 2203 | 48,3 | 17,109 | 13,13 | 3,502 | 2206 | 13,66 | 3,467 |
| | 5 | 51,1% | 48,7% | 47,79 | 18,712 | 2474 | 46,39 | 18,408 | 12,94 | 3,664 | 2465 | 13,2 | 3,624 |
| | 6 | 51,7% | 49,4% | 47,79 | 18,675 | 2414 | 46,89 | 18,375 | 13,37 | 3,489 | 2409 | 13,85 | 3,521 |
| | 7 | 51,6% | 49,3% | 48,17 | 19,269 | 2484 | 48,69 | 18,321 | 13,38 | 3,315 | 2490 | 14,12 | 3,411 |
| Great Britain | 1 | 51,5% | 53,7% | 45,6 | 18,415 | 2558 | 48,59 | 18,29 | 12,84 | 3,343 | 2569 | 12,71 | 3,41 |
| | 2 | 51,6% | | 45,65 | 18,655 | 1891 | | | 12,23 | 3,076 | 1880 | | |
| | 3 | 51,5% | | 45,9 | 18,806 | 2969 | | | 13,52 | 3,906 | 2928 | | |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 4 | 51,4% | 54,4% | 45,99 | 18,764 | 2325 | 49 | 18,516 | 13,61 | 3,718 | 2331 | 13,53 | 3,779 |
| | 5 | 50,4% | 56,2% | 45,42 | 18,914 | 2415 | 50 | 18,65 | 12,92 | 3,649 | 2399 | 13,09 | 3,711 |
| | 6 | 51,4% | 57,4% | 46,66 | 19,078 | 2270 | 52 | 18,975 | 13,45 | 3,622 | 2248 | 13,3 | 3,667 |
| | 7 | 51,3% | 54,5% | 46,96 | 18,701 | 2246 | 52,18 | 18,355 | 13,83 | 3,686 | 2254 | 13,55 | 3,749 |
| Greece | 1 | 51,3% | 56,9% | 45,89 | 18,759 | 2565 | 49,79 | 19,227 | 10,11 | 4,372 | 2559 | 9,7 | 4,612 |
| | 2 | 51,3% | 56,8% | 46,38 | 18,644 | 2406 | 50,09 | 18,942 | 10,24 | 4,423 | 2405 | 9,91 | 4,718 |
| | 4 | 51,2% | 54,7% | 45,79 | 17,544 | 2070 | 45,11 | 16,673 | 10,65 | 3,732 | 2052 | 11,38 | 3,914 |
| | 5 | 51,3% | 56,4% | 47,44 | 18,697 | 2714 | 47,58 | 18,673 | 10,78 | 4,281 | 2683 | 11,24 | 4,307 |
| Hungary | 1 | 52,9% | 52,1% | 45,03 | 18,454 | 1779 | 46,03 | 18,205 | 11,45 | 3,631 | 1779 | 11,66 | 3,716 |
| | 2 | 54,1% | | 45,56 | 18,693 | 1494 | | | 11,28 | 3,06 | 1486 | | |
| | 3 | 53,5% | 58,6% | 46,08 | 18,542 | 1595 | 51,15 | 18,559 | 11,96 | 3,662 | 1597 | 11,72 | 3,812 |
| | 4 | 53,4% | 54,6% | 46,3 | 18,863 | 1544 | 47,79 | 19,012 | 12,31 | 3,885 | 1538 | 12,26 | 3,8 |
| | 5 | 53,4% | 54,0% | 46,39 | 18,683 | 1561 | 47,52 | 18,301 | 12,43 | 3,775 | 1561 | 12,71 | 3,74 |
| | 6 | 53,1% | 55,5% | 46,65 | 18,57 | 2014 | 47,33 | 18,232 | 12,22 | 3,508 | 2009 | 12,33 | 3,475 |
| | 7 | 53,1% | 58,0% | 47,72 | 18,91 | 1698 | 49,97 | 18,362 | 11,92 | 3,556 | 1689 | 12,18 | 3,436 |
| Ireland | 1 | 50,8% | 54,0% | 41,9 | 17,57 | 2038 | 45,57 | 17,493 | 13,12 | 3,321 | 1983 | 13,03 | 3,38 |
| | 2 | 50,7% | 57,0% | 41,92 | 17,719 | 2286 | 48,01 | 17,73 | 12,94 | 3,383 | 2226 | 12,53 | 3,414 |
| | 3 | 50,5% | 54,3% | 42,67 | 17,803 | 1714 | 46,58 | 17,883 | 12,87 | 3,389 | 1797 | 12,74 | 3,516 |
| | 4 | 50,6% | 54,0% | 42,46 | 17,665 | 1758 | 47,68 | 17,925 | 14,15 | 3,697 | 1760 | 14,02 | 3,926 |
| | 5 | 50,9% | 53,9% | 42,68 | 18,109 | 2576 | 46,58 | 18,566 | 13,92 | 3,466 | 2561 | 13,53 | 3,532 |
| | 6 | 51,0% | 52,4% | 43,55 | 17,451 | 2626 | 47,41 | 17,798 | 14,27 | 3,393 | 2623 | 13,99 | 3,552 |
| | 7 | 51,1% | 54,0% | 44,3 | 17,785 | 2383 | 49,75 | 18,013 | 14,09 | 3,279 | 2383 | 13,74 | 3,493 |
| Netherlands | 1 | 50,5% | 55,7% | 44,1 | 17,143 | 2364 | 48,19 | 16,976 | 13,06 | 3,798 | 2340 | 12,86 | 4,05 |
| | 2 | 50,8% | 58,2% | 45,26 | 17,422 | 1879 | 49,45 | 17,195 | 12,58 | 3,587 | 1874 | 12,31 | 3,805 |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 3 | 50,9% | 54,0% | 45,81 | 17,481 | 1889 | 48,75 | 17,605 | 13,4 | 4,328 | 1880 | 13,17 | 4,572 |
| | 4 | 50,8% | 53,8% | 46,01 | 18,062 | 1778 | 49,32 | 17,714 | 13,4 | 4,158 | 1768 | 13,31 | 4,373 |
| | 5 | 50,8% | 54,3% | 46,34 | 17,778 | 1829 | 50,59 | 17,396 | 13,56 | 3,957 | 1811 | 13,4 | 4,311 |
| | 6 | 50,7% | 53,4% | 46,68 | 18,265 | 1845 | 51,23 | 17,851 | 13,69 | 3,852 | 1844 | 13,6 | 4,267 |
| | 7 | 50,8% | 55,6% | 46,8 | 18,418 | 1917 | 50,85 | 18,104 | 13,69 | 3,663 | 1901 | 13,72 | 3,935 |
| Norway | 1 | 50,9% | 46,0% | 45,33 | 17,79 | 2036 | 45,66 | 16,972 | 12,98 | 3,678 | 2030 | 13,26 | 3,587 |
| | 2 | 51,0% | 48,1% | 45,2 | 18,059 | 1760 | 45,39 | 17,189 | 12,66 | 3,312 | 1758 | 13,2 | 3,578 |
| | 3 | 51,0% | 49,0% | 45,79 | 18,66 | 1749 | 45,44 | 18,045 | 12,73 | 3,535 | 1737 | 13,37 | 3,797 |
| | 4 | 50,7% | 47,8% | 45,33 | 18,957 | 1548 | 45,56 | 17,752 | 12,56 | 3,796 | 1544 | 13,45 | 3,817 |
| | 5 | 50,8% | 47,9% | 45,9 | 18,964 | 1548 | 46,22 | 18,408 | 13,17 | 3,716 | 1544 | 13,58 | 3,718 |
| | 6 | 50,0% | 47,1% | 45,11 | 18,524 | 1624 | 45,93 | 18,054 | 12,65 | 4,22 | 1619 | 13,07 | 4,378 |
| | 7 | 48,5% | 46,8% | 45,8 | 19,034 | 1436 | 46,53 | 18,534 | 13,39 | 3,578 | 1434 | 13,86 | 3,707 |
| Poland | 1 | 52,3% | 51,6% | 43,08 | 18,518 | 2100 | 42,73 | 18,568 | 11,26 | 3,43 | 2103 | 11,39 | 3,418 |
| | 2 | 52,3% | 52,2% | 43,14 | 18,071 | 1716 | 42,15 | 18,018 | 11,47 | 3,203 | 1708 | 11,57 | 3,178 |
| | 3 | 52,4% | 52,6% | 43,53 | 18,439 | 1721 | 43,48 | 18,37 | 11,41 | 3,251 | 1702 | 11,5 | 3,269 |
| | 4 | 52,6% | 53,2% | 44,63 | 18,691 | 1619 | 44,64 | 18,978 | 12 | 3,606 | 1613 | 12,1 | 3,593 |
| | 5 | 52,5% | 52,9% | 44,81 | 18,773 | 1751 | 44,45 | 18,682 | 12,37 | 3,524 | 1736 | 12,48 | 3,537 |
| | 6 | 52,1% | 52,2% | 45,79 | 18,676 | 1898 | 46,12 | 18,792 | 12,28 | 3,496 | 1879 | 12,34 | 3,518 |
| | 7 | 52,1% | 54,9% | 46,29 | 18,611 | 1615 | 47,02 | 18,773 | 12,3 | 3,338 | 1596 | 12,3 | 3,415 |
| Portugal | 1 | 52,9% | 58,6% | 44,98 | 18,808 | 1511 | 48,35 | 18,691 | 7,08 | 4,374 | 1510 | 7,37 | 4,784 |
| | 2 | 52,5% | 60,0% | 45,74 | 18,878 | 2050 | 49,52 | 19,302 | 7,41 | 4,54 | 2036 | 7,44 | 4,819 |
| | 3 | 52,1% | 61,8% | 46,63 | 18,904 | 2222 | 51,55 | 18,852 | 7,49 | 4,676 | 2188 | 7,2 | 4,936 |
| | 4 | 52,2% | 61,7% | 46,63 | 19,401 | 2367 | 52,9 | 19,783 | 8,05 | 4,689 | 2336 | 7,69 | 5,021 |
| | 5 | 52,6% | 60,4% | 47,39 | 19,264 | 2150 | 54,5 | 19,093 | 8,01 | 4,816 | 2065 | 7,36 | 4,92 |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 6 | 53,2% | 60,7% | 48,31 | 18,973 | 2151 | 52,58 | 18,948 | 8,67 | 5,034 | 2126 | 8,06 | 4,914 |
| | 7 | 53,0% | 55,1% | 49,14 | 19,358 | 1265 | 52,8 | 19,277 | 9,1 | 4,953 | 1254 | 8,83 | 5,182 |
| Russia | 3 | 54,7% | 59,7% | 44,01 | 18,08 | 2401 | 46,23 | 18,811 | 12,5 | 3,18 | 2426 | 12,03 | 3,292 |
| | 4 | 54,7% | 61,3% | 43,83 | 18,411 | 2508 | 47,38 | 18,938 | 12,49 | 3,15 | 2511 | 12,28 | 3,151 |
| | 5 | 54,8% | 58,7% | 44,05 | 17,948 | 2595 | 46,5 | 18,495 | 12,43 | 3,211 | 2595 | 12,54 | 3,118 |
| | 6 | 55,6% | 61,3% | 43,41 | 18,644 | 2483 | 46,22 | 17,948 | 11,65 | 2,704 | 2484 | 12,88 | 2,894 |
| Switzerland | 1 | 51,7% | 51,4% | 44,85 | 18,272 | 2036 | 47,63 | 17,145 | 10,73 | 3,312 | 2033 | 10,85 | 3,492 |
| | 2 | 51,6% | 56,0% | 45,6 | 18,09 | 2141 | 48,03 | 17,988 | 10,64 | 3,171 | 2137 | 10,71 | 3,304 |
| | 3 | 51,5% | 54,8% | 46,47 | 18,612 | 1803 | 49,84 | 17,956 | 13,18 | 3,632 | 1799 | 13,37 | 3,736 |
| | 4 | 51,3% | 55,3% | 46,45 | 18,408 | 1819 | 48,71 | 18,196 | 11,33 | 3,481 | 1814 | 11,36 | 3,551 |
| | 5 | 51,9% | 49,1% | 48,55 | 19,027 | 1502 | 47,88 | 18,644 | 11,41 | 3,34 | 1498 | 11,39 | 3,342 |
| | 6 | 51,0% | 49,9% | 46,81 | 18,762 | 1493 | 47,28 | 18,769 | 11,87 | 3,694 | 1486 | 11,79 | 3,674 |
| | 7 | 51,0% | 49,9% | 46,95 | 18,854 | 1531 | 47,49 | 18,768 | 11,08 | 3,259 | 1527 | 11,04 | 3,246 |
| Slovakia | 2 | 51,9% | 49,5% | 42,77 | 18,533 | 1462 | 42,02 | 17,538 | 11,82 | 3,015 | 1472 | 11,99 | 2,956 |
| | 3 | 51,4% | 51,8% | 43,12 | 18,1 | 1722 | 43,38 | 17,771 | 12,33 | 3,289 | 1721 | 12,44 | 3,22 |
| | 4 | 52,4% | 62,1% | 43,45 | 17,521 | 1797 | 50,04 | 17,146 | 12,54 | 2,969 | 1800 | 12,68 | 3,079 |
| | 5 | 52,1% | 61,7% | 43,71 | 17,869 | 1990 | 50,54 | 17,195 | 12,8 | 2,892 | 1959 | 12,84 | 3,016 |
| | 6 | 52,2% | 59,3% | 44,47 | 17,262 | 1840 | 49,21 | 16,514 | 12,87 | 2,927 | 1828 | 13,04 | 2,924 |
| Slovenia | 1 | 51,5% | 52,3% | 44,23 | 18,565 | 1521 | 44,28 | 18,288 | 11,16 | 3,265 | 1515 | 11,37 | 3,391 |
| | 2 | 51,8% | 53,9% | 44,64 | 18,645 | 1428 | 45,49 | 18,984 | 11,3 | 3,357 | 1432 | 11,24 | 3,409 |
| | 3 | 51,4% | 54,5% | 45,41 | 18,599 | 1471 | 46,26 | 18,852 | 11,52 | 3,586 | 1460 | 11,62 | 3,599 |
| | 4 | 50,8% | 54,1% | 45,81 | 18,634 | 1286 | 46,74 | 18,968 | 11,6 | 3,564 | 1277 | 11,63 | 3,728 |
| | 5 | 50,7% | 53,7% | 46,3 | 18,349 | 1385 | 47,18 | 18,281 | 11,78 | 3,604 | 1394 | 11,89 | 3,715 |
| | 6 | 50,8% | 54,4% | 47,03 | 18,868 | 1257 | 48,38 | 18,731 | 11,75 | 3,611 | 1251 | 11,86 | 3,634 |

| Country | ESS round | Share of female respondents | | Age of respondent, calculated | | | | | | Years of full-time education completed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | Filtered unweighted | Total weighted | | | Filtered unweighted | | | Total weighted | | | Filtered unweighted | |
| | | | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 7 | 50,8% | 54,3% | 47,67 | 18,464 | 1224 | 49,33 | 18,559 | 12,18 | 3,398 | 1222 | 12,19 | 3,415 |
| Spain | 1 | 51,2% | 52,9% | 45,29 | 19,019 | 1709 | 48,33 | 19,218 | 10,43 | 5,578 | 1570 | 10,24 | 5,532 |
| | 2 | 51,2% | 48,8% | 45,37 | 18,801 | 1642 | 44,77 | 18,503 | 11,06 | 5,539 | 1623 | 11,16 | 5,518 |
| | 3 | 50,8% | 51,5% | 46,06 | 18,904 | 1877 | 45,59 | 18,705 | 11,82 | 5,541 | 1769 | 11,69 | 5,345 |
| | 4 | 51,1% | 53,1% | 45,98 | 18,686 | 2571 | 46,8 | 18,997 | 11,58 | 5,304 | 2516 | 10,88 | 5,035 |
| | 5 | 51,1% | 50,6% | 46,34 | 18,545 | 1880 | 45,61 | 18,162 | 12,36 | 5,511 | 1849 | 12,46 | 5,51 |
| | 6 | 51,0% | 51,1% | 46,87 | 18,102 | 1888 | 47,37 | 17,82 | 12,86 | 6,022 | 1867 | 12,51 | 5,999 |
| | 7 | 51,2% | 48,5% | 47,94 | 18,532 | 1925 | 48,15 | 18,42 | 13,1 | 5,889 | 1874 | 12,73 | 5,766 |
| Sweden | 1 | 50,9% | 49,0% | 45,85 | 18,124 | 2089 | 46 | 18,332 | 12,29 | 3,338 | 2086 | 12,05 | 3,469 |
| | 2 | 50,8% | 49,3% | 46,23 | 18,286 | 1948 | 46,71 | 18,494 | 12,48 | 3,271 | 1943 | 12,13 | 3,426 |
| | 3 | 50,8% | 50,7% | 46,56 | 18,503 | 2154 | 46,69 | 18,5 | 12,65 | 3,531 | 2145 | 12,63 | 3,627 |
| | 4 | 50,7% | 49,9% | 46,91 | 19,334 | 1830 | 47,37 | 19,155 | 12,7 | 3,621 | 1819 | 12,73 | 3,64 |
| | 5 | 50,5% | 52,2% | 46,86 | 19,268 | 1497 | 48,49 | 19,146 | 12,52 | 3,546 | 1491 | 12,65 | 3,612 |
| | 6 | 50,4% | 48,8% | 47,05 | 19,097 | 1845 | 48,17 | 18,815 | 12,63 | 3,313 | 1846 | 12,87 | 3,369 |
| | 7 | 49,7% | 50,1% | 47,78 | 20,13 | 1790 | 49,64 | 19,757 | 12,95 | 3,51 | 1789 | 13,19 | 3,568 |
| Ukraine | 2 | 55,2% | 63,8% | 44,92 | 18,377 | 2030 | 49,93 | 18,707 | 11,48 | 3,159 | 1986 | 11,5 | 3,466 |
| | 3 | 55,4% | 62,1% | 45,33 | 18,482 | 2002 | 48,59 | 18,777 | 11,39 | 3,604 | 1929 | 11,49 | 3,675 |
| | 4 | 55,4% | 63,7% | 44,86 | 17,93 | 1845 | 48,85 | 18,583 | 12,26 | 3,425 | 1787 | 11,83 | 3,427 |
| | 5 | 55,6% | 62,9% | 45,02 | 18,308 | 1931 | 50,08 | 18,857 | 12,7 | 2,921 | 1862 | 12,16 | 3,186 |
| | 6 | 54,7% | 64,4% | 44,66 | 17,899 | 2176 | 48,53 | 18,721 | 12,55 | 3,294 | 2136 | 12,43 | 3,42 |

## *Appendix 6*. Socio-economic background

| Country | ESS round | Feeling about household's income nowadays | | | | Subjective general health | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | Filtered unweighted | | Total weighted | | Filtered unweighted | |
| | | Living com-fortably | Very difficult | Living com-fortably | Very difficult | Very good | Very bad | Very good | Very bad |
| Total (Grand mean) | | 28,10% | 7,70% | 28,50% | 7,80% | 23,40% | 1,40% | 22,30% | 1,50% |
| Austria | 1 | 31,4% | 4,3% | 30,9% | 5,0% | 34,7% | 0,7% | 34,3% | 0,9% |
| | 2 | 39,5% | 2,8% | 38,4% | 3,3% | 32,2% | 1,0% | 32,2% | 0,9% |
| | 3 | 38,8% | 3,3% | 36,2% | 3,5% | 31,6% | 0,9% | 32,2% | 0,8% |
| | 7 | 30,7% | 2,4% | 29,7% | 2,5% | 32,3% | 1,1% | 31,3% | 0,9% |
| Belgium | 1 | 37,4% | 3,5% | 41,9% | 2,8% | 24,5% | 0,9% | 25,7% | 0,8% |
| | 2 | 34,2% | 4,7% | 36,1% | 4,5% | 23,9% | 0,7% | 25,1% | 0,7% |
| | 3 | 35,5% | 5,3% | 37,9% | 4,5% | 22,5% | 0,8% | 22,4% | 0,7% |
| | 4 | 34,8% | 4,2% | 36,8% | 3,7% | 21,9% | 0,6% | 22,5% | 0,5% |
| | 5 | 36,3% | 5,6% | 39,2% | 4,6% | 24,0% | 0,9% | 23,9% | 0,7% |
| | 6 | 32,7% | 5,7% | 34,9% | 5,2% | 21,5% | 0,9% | 22,2% | 0,8% |
| | 7 | 35,5% | 4,8% | 36,4% | 4,6% | 21,9% | 0,6% | 22,8% | 0,6% |
| Bulgaria | 3 | 1,3% | 36,6% | | | 16,5% | 3,0% | | |
| | 4 | 1,3% | 31,7% | 1,3% | 33,8% | 22,3% | 2,1% | 16,9% | 2,5% |
| | 5 | 0,9% | 36,3% | 0,9% | 37,9% | 25,7% | 2,3% | 19,2% | 2,8% |
| | 6 | 1,3% | 41,1% | 1,1% | 42,6% | 25,0% | 2,3% | 17,0% | 3,1% |
| Cyprus | 3 | 20,1% | 2,3% | | | 39,1% | 0,9% | | |
| | 4 | 24,6% | 4,9% | 24,9% | 4,9% | 50,7% | 0,9% | 52,1% | 1,1% |
| | 5 | 22,9% | 10,0% | 21,2% | 9,7% | 48,9% | 1,3% | 41,4% | 1,9% |
| | 6 | 13,3% | 14,5% | 14,9% | 14,6% | 49,1% | 0,8% | 44,4% | 0,9% |
| Czech Republic | 1 | 10,3% | 6,9% | 10,1% | 7,6% | 18,0% | 1,8% | 12,6% | 2,1% |
| | 2 | 9,1% | 12,4% | 8,7% | 13,8% | 21,5% | 1,3% | 17,6% | 1,5% |
| | 4 | 13,6% | 6,9% | 13,0% | 7,6% | 23,7% | 1,9% | 20,6% | 2,1% |
| | 5 | 12,6% | 13,0% | 11,7% | 15,1% | 22,0% | 2,1% | 19,7% | 2,3% |
| | 6 | 13,6% | 10,2% | 12,4% | 10,4% | 29,0% | 1,0% | 26,0% | 0,9% |
| | 7 | 13,6% | 7,1% | 12,2% | 8,1% | 28,6% | 0,5% | 27,3% | 0,4% |
| Denmark | 1 | 62,6% | 1,6% | 64,8% | 1,5% | 43,3% | 1,5% | 43,6% | 1,1% |
| | 2 | 62,4% | 1,2% | 63,9% | 1,2% | 37,5% | 1,4% | 38,2% | 1,1% |
| | 3 | 66,4% | 1,4% | 67,3% | 1,3% | 39,0% | 0,8% | 38,7% | 0,8% |
| | 4 | 66,0% | 1,1% | 69,0% | 0,8% | 35,3% | 1,4% | 37,3% | 1,0% |
| | 5 | 67,5% | 1,3% | 69,7% | 1,2% | 36,4% | 1,1% | 37,4% | 0,9% |
| | 6 | 64,2% | 1,6% | 67,3% | 1,4% | 36,6% | 1,2% | 38,3% | 1,0% |
| | 7 | 65,3% | 1,5% | 67,8% | 1,4% | 37,0% | 1,5% | 39,0% | 1,2% |
| Estonia | 2 | 5,7% | 13,1% | 5,5% | 12,8% | 8,3% | 2,9% | 7,7% | 3,2% |
| | 3 | 9,2% | 7,5% | 9,1% | 7,5% | 9,2% | 1,3% | 8,0% | 1,4% |
| | 4 | 10,7% | 5,8% | 10,0% | 5,8% | 10,3% | 1,9% | 9,8% | 2,2% |
| | 5 | 11,7% | 7,9% | 10,8% | 8,4% | 12,9% | 1,1% | 11,5% | 1,4% |
| | 6 | 9,7% | 10,1% | 8,9% | 10,9% | 12,6% | 1,7% | 11,4% | 2,2% |
| | 7 | 14,1% | 6,8% | 12,9% | 7,1% | 11,8% | 2,0% | 10,8% | 2,1% |
| Finland | 1 | 21,5% | 3,7% | 21,5% | 3,6% | 20,8% | 0,7% | 20,9% | 0,7% |
| | 2 | 22,1% | 3,4% | | | 21,4% | 0,7% | | |

| Country | ESS round | Feeling about household's income nowadays | | | | Subjective general health | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | Filtered unweighted | | Total weighted | | Filtered unweighted | |
| | | Living com-fortably | Very difficult | Living com-fortably | Very difficult | Very good | Very bad | Very good | Very bad |
| | 3 | 22,7% | 2,3% | 22,8% | 2,2% | 20,1% | 0,6% | 20,0% | 0,5% |
| | 4 | 23,6% | 2,9% | 24,0% | 2,8% | 20,9% | 0,5% | 20,7% | 0,6% |
| | 5 | 20,9% | 3,7% | 21,8% | 3,5% | 21,6% | 1,3% | 21,3% | 1,4% |
| | 6 | 23,2% | 3,1% | 23,8% | 2,9% | 19,7% | 0,5% | 19,3% | 0,4% |
| | 7 | 24,4% | 2,6% | 25,0% | 2,3% | 21,7% | 0,7% | 20,8% | 0,7% |
| France | 1 | | | | | 19,80% | 1,90% | | |
| | 2 | | | | | 21,40% | 0,80% | | |
| | 3 | 29,80% | 1,60% | 29,20% | 1,80% | 20,50% | 0,60% | 19,20% | 0,60% |
| | 4 | 33,10% | 1,70% | 33,40% | 1,90% | 21,60% | 0,90% | 20,80% | 1,00% |
| | 5 | 31,90% | 2,10% | 30,60% | 2,50% | 22,60% | 0,80% | 20,10% | 1,10% |
| | 6 | 29,80% | 1,80% | 28,50% | 2,00% | 20,70% | 1,30% | 18,40% | 1,40% |
| | 7 | 31,50% | 1,90% | 32,10% | 2,40% | 18,90% | 1,60% | 17,90% | 1,60% |
| Germany (Eastern part) | 1 | 18,8% | 4,8% | 19,7% | 4,7% | 13,7% | 1,9% | 13,2% | 1,7% |
| | 2 | 21,7% | 4,7% | 21,9% | 4,1% | 13,7% | 2,1% | 13,2% | 1,7% |
| | 3 | 17,8% | 7,1% | 18,3% | 6,0% | 16,8% | 2,8% | 15,3% | 2,7% |
| | 4 | 19,4% | 4,4% | 21,2% | 4,1% | 14,3% | 2,1% | 13,6% | 1,8% |
| | 5 | 23,9% | 4,7% | 25,0% | 4,7% | 10,9% | 1,1% | 10,6% | 1,2% |
| | 6 | 21,8% | 5,8% | 23,5% | 5,7% | 9,3% | 1,5% | 8,8% | 1,1% |
| | 7 | 29,0% | 4,4% | 32,4% | 3,4% | 10,2% | 1,8% | 11,1% | 1,2% |
| Germany (Western part) | 1 | 30,10% | 2,70% | 33,70% | 2,20% | 14,60% | 1,40% | 15,20% | 1,20% |
| | 2 | 28,10% | 4,40% | 31,10% | 3,60% | 17,40% | 1,80% | 17,20% | 1,10% |
| | 3 | 25,40% | 4,50% | 27,00% | 3,80% | 19,90% | 1,20% | 19,50% | 1,10% |
| | 4 | 30,30% | 4,00% | 33,30% | 3,20% | 16,00% | 1,50% | 15,90% | 1,30% |
| | 5 | 34,00% | 3,50% | 36,00% | 3,10% | 15,20% | 1,70% | 15,80% | 1,60% |
| | 6 | 37,20% | 3,20% | 39,70% | 2,60% | 16,30% | 1,40% | 17,70% | 1,30% |
| | 7 | 40,70% | 2,80% | 44,10% | 2,10% | 17,70% | 1,30% | 18,30% | 1,40% |
| Great Britain | 1 | 41,70% | 1,70% | 40,50% | 2,00% | 31,10% | 1,40% | 30,60% | 1,20% |
| | 2 | 38,00% | 3,60% | | | 30,30% | 1,40% | | |
| | 3 | 42,60% | 2,40% | | | 32,70% | 1,20% | | |
| | 4 | 38,00% | 3,90% | 36,60% | 4,20% | 31,20% | 1,30% | 30,20% | 1,50% |
| | 5 | 34,70% | 5,20% | 35,60% | 4,90% | 29,60% | 1,40% | 29,60% | 1,70% |
| | 6 | 37,50% | 4,80% | 37,90% | 5,10% | 31,10% | 1,10% | 28,40% | 1,40% |
| | 7 | 40,20% | 3,90% | 39,40% | 4,30% | 29,90% | 1,60% | 27,70% | 2,00% |
| Greece | 1 | 10,70% | 15,20% | 10,50% | 17,10% | 45,00% | 1,50% | 40,00% | 2,00% |
| | 2 | 9,30% | 13,10% | 8,90% | 13,70% | 45,70% | 0,80% | 41,00% | 1,10% |
| | 4 | 9,30% | 19,50% | 10,10% | 17,50% | 47,30% | 1,00% | 48,40% | 1,10% |
| | 5 | 5,90% | 28,40% | 6,00% | 27,40% | 44,90% | 1,20% | 45,30% | 1,20% |
| Hungary | 1 | 6,10% | 11,80% | 6,40% | 11,60% | 8,50% | 4,40% | 8,10% | 4,30% |
| | 2 | 6,90% | 11,80% | | | 11,20% | 3,80% | | |
| | 3 | 6,30% | 11,80% | 6,00% | 13,10% | 12,60% | 3,50% | 9,90% | 4,20% |
| | 4 | 4,60% | 15,00% | 4,40% | 14,60% | 13,90% | 3,50% | 12,90% | 3,90% |
| | 5 | 6,60% | 17,40% | 6,90% | 15,90% | 14,90% | 3,50% | 14,20% | 3,50% |

| Country | ESS round | Feeling about household's income nowadays | | | | Subjective general health | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | Filtered unweighted | | Total weighted | | Filtered unweighted | |
| | | Living com-fortably | Very difficult | Living com-fortably | Very difficult | Very good | Very bad | Very good | Very bad |
| | 6 | 6,30% | 22,50% | 6,40% | 21,60% | 16,30% | 2,70% | 16,10% | 2,70% |
| | 7 | 6,20% | 10,50% | 6,60% | 9,10% | 15,00% | 3,20% | 13,30% | 3,60% |
| Ireland | 1 | 39,00% | 3,80% | 38,20% | 3,50% | 44,20% | 0,50% | 41,90% | 0,50% |
| | 2 | 51,30% | 1,40% | 48,00% | 1,90% | 46,40% | 0,20% | 42,60% | 0,40% |
| | 3 | 48,00% | 1,70% | 46,10% | 1,90% | 37,80% | 0,20% | 36,20% | 0,30% |
| | 4 | 30,70% | 5,00% | 31,30% | 4,90% | 45,50% | 0,40% | 41,00% | 0,50% |
| | 5 | 21,40% | 9,80% | 20,10% | 10,90% | 44,90% | 0,30% | 39,20% | 0,40% |
| | 6 | 23,60% | 9,60% | 22,00% | 10,30% | 43,30% | 0,30% | 38,90% | 0,50% |
| | 7 | 29,90% | 5,90% | 27,30% | 7,20% | 42,20% | 0,30% | 37,40% | 0,30% |
| Netherlands | 1 | 53,80% | 1,10% | 52,40% | 1,40% | 20,10% | 0,40% | 18,80% | 0,60% |
| | 2 | 46,60% | 3,20% | 44,10% | 3,60% | 16,50% | 0,30% | 14,80% | 0,40% |
| | 3 | 48,80% | 2,80% | 45,90% | 3,30% | 15,50% | 0,50% | 14,00% | 0,70% |
| | 4 | 51,80% | 1,70% | 49,10% | 2,20% | 16,10% | 0,50% | 14,70% | 0,60% |
| | 5 | 49,30% | 2,10% | 47,40% | 3,00% | 13,90% | 0,40% | 13,00% | 0,60% |
| | 6 | 49,60% | 2,50% | 47,20% | 3,00% | 20,10% | 0,50% | 17,40% | 0,60% |
| | 7 | 48,60% | 3,30% | 47,90% | 3,30% | 21,40% | 0,50% | 18,80% | 0,60% |
| Norway | 1 | 53,00% | 1,70% | 52,90% | 1,60% | 30,70% | 0,70% | 31,20% | 0,70% |
| | 2 | 51,20% | 2,40% | 53,40% | 2,50% | 31,10% | 1,10% | 32,10% | 1,20% |
| | 3 | 53,40% | 1,90% | 55,20% | 1,70% | 31,40% | 0,60% | 33,20% | 0,50% |
| | 4 | 60,20% | 1,20% | 61,50% | 0,90% | 31,70% | 0,60% | 32,90% | 0,50% |
| | 5 | 58,60% | 1,40% | 59,30% | 1,20% | 32,70% | 0,60% | 33,40% | 0,60% |
| | 6 | 58,50% | 1,90% | 59,60% | 1,50% | 34,20% | 1,20% | 35,20% | 1,00% |
| | 7 | 63,00% | 1,40% | 63,60% | 1,40% | 33,00% | 1,00% | 34,50% | 0,90% |
| Poland | 1 | 4,80% | 5,70% | 5,20% | 5,40% | 12,80% | 2,30% | 13,00% | 2,20% |
| | 2 | 4,90% | 5,50% | 5,10% | 5,10% | 14,10% | 3,20% | 14,10% | 3,20% |
| | 3 | 6,10% | 3,00% | 5,90% | 2,90% | 15,00% | 2,70% | 15,10% | 2,20% |
| | 4 | 10,10% | 2,80% | 10,20% | 2,70% | 15,50% | 2,40% | 16,30% | 2,30% |
| | 5 | 9,90% | 3,40% | 10,40% | 3,10% | 17,90% | 2,60% | 17,80% | 2,40% |
| | 6 | 7,90% | 3,40% | 8,10% | 3,20% | 18,10% | 1,60% | 17,30% | 1,60% |
| | 7 | 10,10% | 2,30% | 10,00% | 2,30% | 18,00% | 1,30% | 17,70% | 1,40% |
| Portugal | 1 | 7,70% | 9,50% | 9,00% | 9,90% | 8,10% | 2,00% | 6,80% | 1,80% |
| | 2 | 9,10% | 9,10% | 8,70% | 10,30% | 9,20% | 2,10% | 7,90% | 2,30% |
| | 3 | 8,10% | 12,10% | 7,70% | 14,10% | 8,80% | 3,10% | 6,30% | 3,10% |
| | 4 | 6,30% | 11,00% | 5,90% | 14,90% | 12,70% | 2,20% | 9,50% | 2,80% |
| | 5 | 6,00% | 11,90% | 6,10% | 13,70% | 15,40% | 1,80% | 10,20% | 2,20% |
| | 6 | 5,10% | 10,60% | 4,00% | 12,40% | 16,10% | 1,30% | 13,90% | 2,00% |
| | 7 | 12,90% | 10,80% | 12,80% | 11,60% | 10,40% | 2,60% | 9,80% | 2,90% |
| Russia | 3 | 4,40% | 21,70% | 4,10% | 24,60% | 4,80% | 1,90% | 4,30% | 2,30% |
| | 4 | 4,70% | 18,20% | 4,40% | 21,00% | 4,80% | 2,30% | 3,30% | 3,20% |
| | 5 | 6,10% | 14,80% | 6,00% | 16,10% | 5,90% | 1,60% | 4,80% | 1,70% |
| | 6 | 6,50% | 15,00% | 6,80% | 14,70% | 6,00% | 2,00% | 5,10% | 1,50% |
| Switzerland | 1 | 52,3% | 1,2% | 51,3% | 1,5% | 29,8% | 0,2% | 29,1% | 0,4% |
| | 2 | 48,1% | 2,2% | 46,5% | 2,7% | 31,3% | 0,4% | 30,2% | 0,3% |

| Country | ESS round | Feeling about household's income nowadays | | | | Subjective general health | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | Filtered unweighted | | Total weighted | | Filtered unweighted | |
| | | Living com-fortably | Very difficult | Living com-fortably | Very difficult | Very good | Very bad | Very good | Very bad |
| | 3 | 50,8% | 2,9% | 49,9% | 2,7% | 34,3% | 0,6% | 32,7% | 0,7% |
| | 4 | 52,2% | 1,6% | 50,5% | 2,0% | 36,4% | 0,6% | 34,4% | 0,5% |
| | 5 | 51,9% | 2,5% | 53,2% | 2,5% | 34,4% | 0,5% | 35,1% | 0,5% |
| | 6 | 55,2% | 2,6% | 56,5% | 2,3% | 34,8% | 0,7% | 34,4% | 0,6% |
| | 7 | 57,0% | 2,4% | 57,6% | 2,3% | 33,4% | 0,5% | 33,3% | 0,5% |
| Slovakia | 2 | 5,90% | 18,30% | 6,10% | 17,30% | 15,00% | 2,50% | 16,10% | 2,20% |
| | 3 | 11,00% | 12,30% | 11,30% | 11,90% | 17,20% | 2,20% | 16,60% | 1,80% |
| | 4 | 12,00% | 7,10% | 11,50% | 8,50% | 19,60% | 1,40% | 13,50% | 1,70% |
| | 5 | 11,40% | 10,10% | 9,60% | 11,90% | 19,10% | 1,70% | 13,90% | 2,40% |
| | 6 | 9,80% | 13,80% | 8,90% | 14,20% | 26,10% | 0,50% | 19,90% | 1,00% |
| Slovenia | 1 | 37,10% | 2,60% | 38,00% | 2,80% | 13,70% | 2,40% | 13,80% | 2,30% |
| | 2 | 40,10% | 2,90% | 40,20% | 3,10% | 15,60% | 1,60% | 15,30% | 1,90% |
| | 3 | 45,00% | 2,70% | 45,10% | 2,60% | 13,90% | 2,50% | 13,90% | 2,60% |
| | 4 | 39,30% | 3,50% | 40,20% | 3,40% | 14,00% | 1,40% | 13,50% | 1,70% |
| | 5 | 37,20% | 4,50% | 38,00% | 4,60% | 19,40% | 1,90% | 19,50% | 2,00% |
| | 6 | 35,50% | 7,00% | 35,00% | 7,10% | 22,90% | 1,80% | 21,40% | 1,90% |
| | 7 | 38,40% | 4,90% | 37,60% | 5,00% | 17,80% | 1,60% | 16,70% | 1,80% |
| Spain | 1 | 29,8% | 4,3% | 30,1% | 4,1% | 18,9% | 2,0% | 17,4% | 2,3% |
| | 2 | 35,7% | 3,1% | 37,1% | 2,9% | 15,8% | 1,2% | 16,3% | 0,9% |
| | 3 | 33,5% | 2,7% | 33,9% | 2,6% | 15,3% | 1,4% | 15,6% | 1,5% |
| | 4 | 29,1% | 4,2% | 26,6% | 4,0% | 24,4% | 0,9% | 22,7% | 0,9% |
| | 5 | 32,7% | 5,7% | 32,6% | 5,6% | 19,6% | 1,0% | 20,6% | 0,8% |
| | 6 | 26,2% | 7,7% | 24,5% | 8,4% | 19,0% | 1,3% | 18,3% | 1,4% |
| | 7 | 30,5% | 6,4% | 29,9% | 6,4% | 19,1% | 1,3% | 18,4% | 1,3% |
| Sweden | 1 | 54,50% | 1,60% | 53,90% | 1,40% | 30,60% | 0,70% | 30,30% | 0,80% |
| | 2 | 54,60% | 1,70% | 53,90% | 1,60% | 31,00% | 1,10% | 30,80% | 1,00% |
| | 3 | 59,00% | 1,60% | 58,70% | 1,60% | 32,20% | 0,60% | 32,40% | 0,50% |
| | 4 | 60,20% | 1,60% | 60,30% | 1,60% | 30,80% | 0,80% | 30,70% | 0,90% |
| | 5 | 63,20% | 2,10% | 63,80% | 1,90% | 33,20% | 0,90% | 32,80% | 0,80% |
| | 6 | 53,90% | 3,60% | 54,70% | 3,20% | 34,30% | 0,80% | 33,80% | 0,80% |
| | 7 | 61,70% | 2,10% | 62,90% | 1,80% | 31,80% | 1,20% | 31,10% | 1,20% |
| Ukraine | 2 | 1,10% | 31,00% | 1,30% | 32,70% | 2,40% | 3,50% | 2,20% | 4,70% |
| | 3 | 1,30% | 30,00% | 1,30% | 30,70% | 4,30% | 4,80% | 2,90% | 4,80% |
| | 4 | 1,20% | 27,40% | 1,00% | 31,90% | 4,50% | 3,10% | 3,30% | 4,10% |
| | 5 | 2,70% | 26,90% | 1,90% | 30,20% | 3,10% | 3,90% | 2,40% | 5,60% |
| | 6 | 2,80% | 25,30% | 2,30% | 29,50% | 4,30% | 2,60% | 4,00% | 3,50% |

*Appendix 7*. Social capital

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| Total (Grand mean) | | 98,0657 | 123,4315 | 298561 | 94,0324 | 120,1207 | 4,98 | 2,451 | 298647 | 5,01 | 2,46 |
| Austria | 1 | 97,0661 | 117,6103 | 2247 | 90,9126 | 111,367 | 5,07 | 2,481 | 2243 | 5,07 | 2,491 |
| | 2 | 90,176 | 112,4501 | 2246 | 91,1774 | 112,1584 | 5,1 | 2,395 | 2236 | 5,15 | 2,353 |
| | 3 | 112,5756 | 128,4042 | 2394 | 109,7263 | 125,3791 | 5,05 | 2,404 | 2391 | 5,09 | 2,385 |
| | 7 | 74,2516 | 91,83099 | 1792 | 69,2908 | 86,17942 | 5,07 | 2,268 | 1791 | 4,97 | 2,303 |
| Belgium | 1 | 106,518 | 125,7255 | 1895 | 105,5248 | 124,3716 | 4,65 | 2,437 | 1890 | 4,86 | 2,372 |
| | 2 | 103,4474 | 120,8796 | 1774 | 100,9216 | 118,5076 | 4,7 | 2,364 | 1776 | 4,79 | 2,343 |
| | 3 | 106,9006 | 125,0261 | 1792 | 106,4355 | 124,1976 | 4,9 | 2,296 | 1798 | 4,97 | 2,28 |
| | 4 | 100,5954 | 119,5664 | 1760 | 99,825 | 118,397 | 5,06 | 2,114 | 1759 | 5,14 | 2,112 |
| | 5 | 100,3958 | 117,6685 | 1704 | 101,1441 | 117,8082 | 4,94 | 2,113 | 1704 | 5,05 | 2,089 |
| | 6 | 90,317 | 110,9065 | 1868 | 89,0301 | 109,5033 | 5,04 | 2,142 | 1869 | 5,1 | 2,128 |
| | 7 | 93,9156 | 112,6897 | 1768 | 93,7228 | 112,441 | 4,97 | 2,19 | 1769 | 5,02 | 2,176 |
| Bulgaria | 3 | 114,4359 | 139,736 | 1371 | | | 3,33 | 2,764 | 1377 | | |
| | 4 | 121,7856 | 142,7522 | 2218 | 110,5477 | 136,2313 | 3,46 | 2,609 | 2217 | 3,42 | 2,57 |
| | 5 | 110,8971 | 136,0966 | 2422 | 100,8546 | 129,6798 | 3,52 | 2,545 | 2422 | 3,49 | 2,562 |
| | 6 | 102,9894 | 132,7549 | 2240 | 94,6997 | 127,0162 | 3,35 | 2,52 | 2241 | 3,33 | 2,487 |
| Cyprus | 3 | 69,0436 | 105,8145 | 959 | | | 4,23 | 2,674 | 994 | | |
| | 4 | 66,4512 | 102,477 | 1181 | 62,8705 | 98,53667 | 4,48 | 2,584 | 1212 | 4,61 | 2,591 |
| | 5 | 65,5303 | 96,33733 | 1080 | 59,6155 | 89,70494 | 3,9 | 2,424 | 1079 | 3,7 | 2,354 |
| | 6 | 66,9378 | 97,43986 | 1112 | 59,2788 | 87,32975 | 3,61 | 2,442 | 1116 | 3,61 | 2,464 |
| Czech Republic | 1 | 74,1175 | 105,3327 | 1355 | 61,5069 | 89,73447 | 4,29 | 2,389 | 1347 | 4,3 | 2,399 |
| | 2 | 57,6644 | 86,67495 | 2972 | 53,8948 | 82,14378 | 4,3 | 2,386 | 2990 | 4,16 | 2,4 |
| | 4 | 83,4423 | 109,8996 | 2014 | 77,6437 | 103,4928 | 4,77 | 2,574 | 2010 | 4,67 | 2,568 |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 5 | 71,3601 | 96,55692 | 2384 | 66,6756 | 89,77677 | 4,57 | 2,487 | 2382 | 4,46 | 2,473 |
| | 6 | 86,98 | 117,9603 | 1998 | 81,7354 | 113,4572 | 4,41 | 2,39 | 1988 | 4,38 | 2,402 |
| | 7 | 70,7583 | 102,5638 | 2135 | 67,7271 | 97,89194 | 4,55 | 2,353 | 2147 | 4,35 | 2,297 |
| Denmark | 1 | 106,4759 | 118,3006 | 1498 | 103,5987 | 114,9188 | 6,92 | 2,03 | 1498 | 7 | 1,996 |
| | 2 | 96,9543 | 112,9782 | 1486 | 95,1235 | 111,0239 | 6,64 | 2,163 | 1477 | 6,78 | 2,142 |
| | 3 | 107,73 | 120,6904 | 1504 | 101,4338 | 115,0339 | 6,9 | 2,114 | 1497 | 7,04 | 2,074 |
| | 4 | 120,4558 | 130,119 | 1609 | 113,7904 | 125,1989 | 6,7 | 2,16 | 1609 | 6,93 | 2,026 |
| | 5 | 128,1413 | 134,6697 | 1575 | 123,2557 | 131,7527 | 6,73 | 1,889 | 1573 | 6,85 | 1,888 |
| | 6 | 119,2886 | 133,0767 | 1649 | 116,2598 | 131,0316 | 6,86 | 1,883 | 1643 | 6,99 | 1,855 |
| | 7 | 108,9774 | 124,5177 | 1499 | 108,1133 | 123,2901 | 6,75 | 1,98 | 1499 | 6,92 | 1,91 |
| Estonia | 2 | 84,3795 | 119,2972 | 1984 | 81,1407 | 117,004 | 5,18 | 2,101 | 1971 | 5,19 | 2,101 |
| | 3 | 112,061 | 138,3575 | 1507 | 103,7721 | 133,4774 | 5,31 | 2,26 | 1490 | 5,34 | 2,222 |
| | 4 | 94,8794 | 128,6008 | 1656 | 86,8154 | 122,5329 | 5,45 | 2,219 | 1653 | 5,44 | 2,227 |
| | 5 | 65,5354 | 99,40699 | 1793 | 62,9541 | 97,29885 | 5,66 | 2,276 | 1783 | 5,67 | 2,302 |
| | 6 | 60,1635 | 93,25486 | 2375 | 58,1241 | 91,62973 | 5,49 | 2,198 | 2369 | 5,49 | 2,223 |
| | 7 | 57,7727 | 88,79051 | 2047 | 55,2849 | 86,12508 | 5,55 | 2,156 | 2047 | 5,58 | 2,159 |
| Finland | 1 | 103,1072 | 122,3415 | 2000 | 102,8652 | 121,9888 | 6,47 | 1,952 | 1998 | 6,46 | 1,955 |
| | 2 | 100,2699 | 118,5544 | 2021 | | | 6,51 | 1,83 | 2015 | | |
| | 3 | 98,5524 | 117,8882 | 1895 | 94,2019 | 114,2506 | 6,56 | 1,85 | 1895 | 6,57 | 1,862 |
| | 4 | 93,6695 | 113,2989 | 2194 | 91,0872 | 110,6415 | 6,43 | 1,907 | 2193 | 6,45 | 1,904 |
| | 5 | 95,6788 | 115,8262 | 1877 | 93,3953 | 113,9323 | 6,48 | 1,902 | 1877 | 6,51 | 1,9 |
| | 6 | 91,9496 | 114,4745 | 2194 | 87,3109 | 110,1569 | 6,56 | 1,827 | 2196 | 6,59 | 1,821 |
| | 7 | 91,1778 | 112,2507 | 2085 | 88,0976 | 109,5223 | 6,68 | 1,864 | 2084 | 6,74 | 1,849 |
| France | 1 | 113,3816 | 131,2967 | 1511 | | | 4,37 | 2,26 | 1510 | | |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 2 | 112,7672 | 129,8575 | 1814 | | | 4,47 | 2,276 | 1817 | | |
| | 3 | 106,4246 | 125,7312 | 1986 | 101,7743 | 121,1514 | 4,4 | 2,257 | 1985 | 4,45 | 2,246 |
| | 4 | 113,2056 | 130,7281 | 2071 | 109,3552 | 127,0875 | 4,36 | 2,15 | 2069 | 4,45 | 2,156 |
| | 5 | 107,24 | 127,6996 | 1724 | 104,313 | 124,0196 | 4,25 | 2,169 | 1726 | 4,34 | 2,204 |
| | 6 | 109,7484 | 128,2843 | 1965 | 102,492 | 122,8162 | 4,41 | 2,08 | 1968 | 4,44 | 2,115 |
| | 7 | 97,6814 | 118,0882 | 1916 | 102,0101 | 120,8408 | 4,57 | 2,197 | 1916 | 4,65 | 2,169 |
| Germany (Eastern part) | 1 | 81,2818 | 110,2335 | 582 | 76,2045 | 104,6813 | 4,32 | 2,398 | 581 | 4,4 | 2,401 |
| | 2 | 65,9941 | 95,40421 | 533 | 62,938 | 91,66332 | 4,46 | 2,245 | 533 | 4,51 | 2,232 |
| | 3 | 86,3572 | 114,4265 | 574 | 79,5305 | 108,1791 | 4,51 | 2,435 | 574 | 4,51 | 2,414 |
| | 4 | 60,6587 | 86,48684 | 526 | 55,7349 | 78,74858 | 4,4 | 2,521 | 526 | 4,48 | 2,502 |
| | 5 | 68,5294 | 97,03043 | 552 | 68,0817 | 96,77742 | 4,28 | 2,306 | 552 | 4,29 | 2,297 |
| | 6 | 65,1087 | 94,62107 | 539 | 64,2784 | 93,00741 | 4,56 | 2,327 | 540 | 4,57 | 2,303 |
| | 7 | 60,0946 | 84,55389 | 549 | 59,0152 | 81,66476 | 4,58 | 2,35 | 549 | 4,75 | 2,302 |
| Germany (Western part) | 1 | 80,006 | 102,2238 | 2412 | 78,7985 | 99,37197 | 4,64 | 2,361 | 2410 | 4,78 | 2,303 |
| | 2 | 77,7876 | 104,2274 | 2332 | 77,3917 | 102,7902 | 4,78 | 2,352 | 2332 | 4,92 | 2,302 |
| | 3 | 74,7257 | 100,165 | 2340 | 70,5336 | 94,64553 | 4,77 | 2,312 | 2339 | 4,86 | 2,281 |
| | 4 | 78,7638 | 101,8101 | 2223 | 74,7603 | 96,74969 | 4,95 | 2,25 | 2221 | 5,05 | 2,263 |
| | 5 | 85,0864 | 108,0015 | 2473 | 86,7212 | 109,0565 | 4,78 | 2,385 | 2475 | 4,81 | 2,348 |
| | 6 | 77,4115 | 99,29234 | 2418 | 78,2772 | 99,94911 | 4,97 | 2,178 | 2417 | 5,09 | 2,134 |
| | 7 | 76,2545 | 99,5088 | 2491 | 73,2003 | 95,15168 | 5,12 | 2,141 | 2494 | 5,28 | 2,081 |
| Great Britain | 1 | 91,1 | 109,3096 | 2576 | 91,4693 | 108,3791 | 5,06 | 2,178 | 2577 | 5,06 | 2,215 |
| | 2 | 108,5513 | 128,4996 | 1894 | | | 5,15 | 2,147 | 1893 | | |
| | 3 | 104,9349 | 124,6307 | 2977 | | | 5,34 | 2,135 | 2964 | | |
| | 4 | 101,246 | 123,3337 | 2352 | 97,3894 | 119,8423 | 5,29 | 2,184 | 2348 | 5,28 | 2,233 |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 5 | 98,1552 | 120,6926 | 2421 | 95,3062 | 117,4313 | 5,24 | 2,176 | 2417 | 5,37 | 2,154 |
| | 6 | 87,9274 | 114,1824 | 2283 | 84,5309 | 109,507 | 5,36 | 2,082 | 2276 | 5,38 | 2,118 |
| | 7 | 85,8752 | 111,8716 | 2263 | 81,4074 | 106,6936 | 5,35 | 2,158 | 2258 | 5,37 | 2,212 |
| Greece | 1 | 68,589 | 106,1933 | 2560 | 65,8786 | 104,2606 | 3,66 | 2,518 | 2563 | 3,63 | 2,511 |
| | 2 | 41,4079 | 68,13023 | 2397 | 38,6297 | 65,7756 | 3,86 | 2,418 | 2405 | 3,89 | 2,428 |
| | 4 | 55,8595 | 87,83176 | 2072 | 57,8378 | 89,1116 | 3,91 | 2,269 | 2070 | 3,93 | 2,264 |
| | 5 | 49,387 | 83,96928 | 2707 | 49,2047 | 83,76439 | 4,02 | 2,352 | 2713 | 4,02 | 2,325 |
| Hungary | 1 | 57,6889 | 99,26696 | 1778 | 57,2409 | 98,92903 | 4,05 | 2,382 | 1770 | 4,07 | 2,391 |
| | 2 | 50,9758 | 86,49731 | 1498 | | | 4,04 | 2,311 | 1489 | | |
| | 3 | 53,0607 | 91,50225 | 1602 | 50,941 | 91,5111 | 4,38 | 2,564 | 1595 | 4,3 | 2,571 |
| | 4 | 52,7608 | 93,02101 | 1541 | 51,8244 | 91,66738 | 4,1 | 2,289 | 1538 | 4,17 | 2,342 |
| | 5 | 47,7318 | 85,18632 | 1560 | 45,4293 | 81,81347 | 4,48 | 2,321 | 1557 | 4,5 | 2,322 |
| | 6 | 36,5626 | 68,66027 | 2006 | 34,7469 | 65,53432 | 4,8 | 2,369 | 2005 | 4,77 | 2,359 |
| | 7 | 38,2143 | 69,35549 | 1695 | 35,2461 | 64,27004 | 4,16 | 2,372 | 1695 | 4,19 | 2,357 |
| Ireland | 1 | 98,1404 | 115,4806 | 2042 | 88,1296 | 106,0961 | 5,46 | 2,468 | 2033 | 5,47 | 2,483 |
| | 2 | 78,307 | 98,02904 | 2280 | 68,5077 | 88,97478 | 5,81 | 2,32 | 2281 | 5,88 | 2,377 |
| | 3 | 98,9833 | 122,1463 | 1808 | 89,7765 | 114,8677 | 5,35 | 2,379 | 1791 | 5,32 | 2,405 |
| | 4 | 99,8951 | 122,8098 | 1764 | 89,594 | 114,0151 | 5,46 | 2,162 | 1763 | 5,44 | 2,218 |
| | 5 | 78,0175 | 106,0391 | 2576 | 68,5913 | 96,91509 | 5,28 | 2,278 | 2571 | 5,12 | 2,3 |
| | 6 | 74,592 | 103,0079 | 2619 | 65,2617 | 93,39864 | 5,19 | 2,405 | 2623 | 5,07 | 2,444 |
| | 7 | 80,2969 | 109,8309 | 2383 | 72,0026 | 101,2367 | 5,25 | 2,328 | 2389 | 5,13 | 2,408 |
| Netherlands | 1 | 106,1125 | 120,6202 | 2364 | 102,2056 | 117,6025 | 5,72 | 2,095 | 2363 | 5,73 | 2,141 |
| | 2 | 99,8596 | 113,0046 | 1881 | 98,566 | 111,8995 | 5,87 | 1,978 | 1880 | 5,8 | 2,031 |
| | 3 | 124,3929 | 131,378 | 1887 | 118,6712 | 127,9523 | 5,8 | 2,022 | 1887 | 5,72 | 2,084 |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 4 | 112,0648 | 122,3648 | 1778 | 107,8702 | 119,4528 | 5,96 | 2,006 | 1776 | 5,9 | 2,074 |
| | 5 | 110,9921 | 122,0048 | 1825 | 106,6716 | 118,8767 | 6,03 | 1,995 | 1827 | 6,01 | 2,033 |
| | 6 | 111,3244 | 121,3205 | 1845 | 104,484 | 116,6235 | 5,95 | 1,969 | 1843 | 5,93 | 2,024 |
| | 7 | 120,5637 | 130,4683 | 1919 | 114,7678 | 126,5524 | 5,99 | 1,798 | 1917 | 5,99 | 1,862 |
| Norway | 1 | 163,8532 | 149,9789 | 2036 | 164,7824 | 150,2706 | 6,55 | 1,984 | 2036 | 6,6 | 1,965 |
| | 2 | 173,1832 | 151,7756 | 1758 | 173,4308 | 151,6367 | 6,54 | 1,968 | 1758 | 6,63 | 1,929 |
| | 3 | 139,125 | 140,431 | 1745 | 140,882 | 141,0682 | 6,75 | 1,841 | 1745 | 6,83 | 1,822 |
| | 4 | 136,0322 | 140,1794 | 1548 | 129,4331 | 136,6279 | 6,5 | 1,891 | 1549 | 6,62 | 1,837 |
| | 5 | 135,5284 | 138,8991 | 1548 | 130,9843 | 135,9834 | 6,62 | 1,927 | 1547 | 6,67 | 1,888 |
| | 6 | 126,5172 | 134,1867 | 1622 | 124,1946 | 132,3169 | 6,63 | 1,776 | 1620 | 6,7 | 1,738 |
| | 7 | 117,2718 | 130,7827 | 1436 | 116,113 | 129,6808 | 6,54 | 1,774 | 1435 | 6,61 | 1,774 |
| Poland | 1 | 68,221 | 104,3827 | 2104 | 70,6844 | 107,0705 | 3,68 | 2,326 | 2097 | 3,72 | 2,326 |
| | 2 | 67,982 | 104,9214 | 1711 | 69,6702 | 106,0149 | 3,57 | 2,353 | 1706 | 3,59 | 2,342 |
| | 3 | 72,9842 | 111,1871 | 1711 | 71,7969 | 110,0496 | 4,06 | 2,378 | 1712 | 4,08 | 2,382 |
| | 4 | 64,0081 | 98,76026 | 1608 | 65,4863 | 100,3758 | 4,15 | 2,38 | 1615 | 4,18 | 2,384 |
| | 5 | 62,0506 | 95,98853 | 1737 | 62,4516 | 96,2654 | 4,33 | 2,41 | 1748 | 4,38 | 2,39 |
| | 6 | 55,903 | 90,70733 | 1877 | 56,5157 | 90,94261 | 4,11 | 2,424 | 1892 | 4,07 | 2,415 |
| | 7 | 57,1678 | 89,26871 | 1598 | 56,4591 | 89,18471 | 3,93 | 2,448 | 1612 | 3,93 | 2,435 |
| Portugal | 1 | 191,8443 | 162,7388 | 1511 | 177,3234 | 160,0657 | 4,19 | 2,363 | 1505 | 3,98 | 2,287 |
| | 2 | 197,5233 | 156,0789 | 2043 | 185,704 | 156,0059 | 3,9 | 2,178 | 2049 | 3,86 | 2,159 |
| | 3 | 242,7217 | 152,8228 | 2213 | 226,0923 | 156,7844 | 4,11 | 2,341 | 2183 | 4,14 | 2,355 |
| | 4 | 181,1458 | 159,8756 | 2358 | 162,9699 | 157,5437 | 3,69 | 2,314 | 2364 | 3,66 | 2,333 |
| | 5 | 222,1299 | 158,4839 | 2144 | 209,2162 | 159,6117 | 3,86 | 2,25 | 2138 | 3,74 | 2,248 |
| | 6 | 195,6811 | 158,6482 | 2143 | 183,6028 | 157,5803 | 3,67 | 2,334 | 2149 | 3,61 | 2,359 |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| | 7 | 195,92 | 160,3648 | 1263 | 186,1217 | 159,9382 | 3,67 | 2,473 | 1262 | 3,7 | 2,513 |
| Russia | 3 | 88,7178 | 125,7685 | 2369 | 82,4473 | 119,3112 | 3,95 | 2,741 | 2393 | 3,76 | 2,768 |
| | 4 | 80,0811 | 115,863 | 2457 | 73,6863 | 109,3965 | 3,97 | 2,629 | 2490 | 3,94 | 2,658 |
| | 5 | 81,7867 | 117,2611 | 2547 | 76,7329 | 111,7636 | 4,14 | 2,573 | 2577 | 4,19 | 2,602 |
| | 6 | 88,2567 | 125,0905 | 2419 | 75,8749 | 113,6824 | 4,36 | 2,629 | 2456 | 4,45 | 2,684 |
| Switzerland | 1 | 99,0035 | 115,1393 | 2035 | 92,6248 | 108,7521 | 5,63 | 2,144 | 2035 | 5,64 | 2,16 |
| | 2 | 93,4845 | 107,8554 | 2139 | 89,2733 | 103,2125 | 5,7 | 2,134 | 2141 | 5,71 | 2,166 |
| | 3 | 98,9162 | 111,3255 | 1804 | 93,1037 | 105,0475 | 5,68 | 2,127 | 1802 | 5,74 | 2,165 |
| | 4 | 90,7035 | 105,3505 | 1817 | 89,296 | 103,5904 | 5,7 | 2,12 | 1815 | 5,73 | 2,145 |
| | 5 | 93,1421 | 108,7039 | 1506 | 91,4075 | 106,7742 | 5,64 | 2,209 | 1505 | 5,65 | 2,185 |
| | 6 | 86,6829 | 104,1231 | 1489 | 83,6199 | 100,9779 | 5,67 | 2,074 | 1493 | 5,7 | 2,068 |
| | 7 | 89,3903 | 106,5523 | 1531 | 87,3973 | 104,8758 | 5,7 | 2,185 | 1532 | 5,73 | 2,188 |
| Slovakia | 2 | 120,0873 | 140,252 | 1500 | 115,42 | 136,8234 | 4,04 | 2,298 | 1496 | 4,03 | 2,296 |
| | 3 | 113,5833 | 136,3542 | 1753 | 109,9137 | 134,1338 | 4,29 | 2,402 | 1754 | 4,31 | 2,369 |
| | 4 | 90,2869 | 121,8263 | 1803 | 82,9988 | 115,8141 | 4,04 | 2,485 | 1802 | 4,01 | 2,493 |
| | 5 | 93,1121 | 122,6918 | 1986 | 80,3127 | 111,2677 | 4,02 | 2,481 | 1977 | 4 | 2,538 |
| | 6 | 95,7762 | 124,0818 | 1834 | 87,9179 | 117,8505 | 4,05 | 2,463 | 1830 | 3,95 | 2,451 |
| Slovenia | 1 | 80,5376 | 112,6036 | 1518 | 78,4993 | 109,989 | 3,96 | 2,515 | 1512 | 4,01 | 2,524 |
| | 2 | 81,4741 | 110,8761 | 1438 | 78,893 | 108,5003 | 4,15 | 2,459 | 1437 | 4,09 | 2,474 |
| | 3 | 78,4172 | 109,9762 | 1470 | 77,4256 | 109,4124 | 4,03 | 2,652 | 1472 | 4,06 | 2,658 |
| | 4 | 70,8718 | 101,0028 | 1285 | 70,0017 | 100,6578 | 4,29 | 2,436 | 1278 | 4,29 | 2,47 |
| | 5 | 77,7446 | 107,5004 | 1402 | 74,8599 | 104,8794 | 3,96 | 2,431 | 1398 | 4,05 | 2,472 |
| | 6 | 75,6131 | 102,4337 | 1254 | 73,3558 | 100,1268 | 4,52 | 2,478 | 1255 | 4,57 | 2,477 |
| | 7 | 76,382 | 105,4752 | 1223 | 73,8862 | 103,8999 | 4,11 | 2,371 | 1220 | 4,08 | 2,367 |

| Country | ESS round | How many days a year socially meet with friends, relatives or colleagues | | | | | Most people can be trusted or you can't be too careful | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total weighted | | | Filtered unweighted | | Total weighted | | | Filtered unweighted | |
| | | Mean | Std. Deviation | N | Mean | Std. Deviation | Mean | Std. Deviation | N | Mean | Std. Deviation |
| Spain | 1 | 137,1562 | 144,4136 | 1707 | 131,8463 | 142,4667 | 4,89 | 2,263 | 1710 | 4,88 | 2,248 |
| | 2 | 131,9703 | 140,3838 | 1658 | 135,121 | 141,7551 | 4,9 | 2,235 | 1660 | 4,94 | 2,202 |
| | 3 | 142,1964 | 144,2024 | 1875 | 144,4838 | 144,6277 | 5,11 | 2 | 1870 | 5,13 | 1,996 |
| | 4 | 134,3575 | 141,1361 | 2574 | 132,5592 | 141,0349 | 4,99 | 2,017 | 2565 | 4,88 | 2,021 |
| | 5 | 124,4409 | 135,8314 | 1885 | 122,8789 | 135,0652 | 5,1 | 1,96 | 1880 | 5,13 | 1,952 |
| | 6 | 118,9531 | 133,8588 | 1886 | 116,2678 | 132,4968 | 5,15 | 2,138 | 1888 | 5,13 | 2,148 |
| | 7 | 114,5822 | 130,7975 | 1921 | 115,1633 | 131,5984 | 4,87 | 2,117 | 1920 | 4,86 | 2,109 |
| Sweden | 1 | 117,0181 | 131,485 | 2092 | 116,7766 | 131,6115 | 6,11 | 2,158 | 2085 | 6,1 | 2,178 |
| | 2 | 111,3866 | 127,7848 | 1945 | 111,729 | 128,2672 | 6,12 | 2,21 | 1944 | 6,07 | 2,256 |
| | 3 | 110,1292 | 125,5586 | 2154 | 109,0053 | 124,5573 | 6,29 | 2,035 | 2151 | 6,3 | 2,044 |
| | 4 | 115,6337 | 128,131 | 1830 | 115,5161 | 128,3162 | 6,32 | 1,985 | 1829 | 6,35 | 1,976 |
| | 5 | 130,1375 | 138,0655 | 1497 | 126,019 | 136,0275 | 6,3 | 1,992 | 1491 | 6,34 | 1,977 |
| | 6 | 139,4495 | 142,2004 | 1845 | 135,2608 | 140,5107 | 5,99 | 2,087 | 1843 | 6,02 | 2,082 |
| | 7 | 132,6251 | 139,2876 | 1790 | 127,7434 | 136,7564 | 6,2 | 2,008 | 1790 | 6,25 | 2,006 |
| Ukraine | 2 | 86,6699 | 118,7734 | 2015 | 76,9116 | 112,0359 | 4,44 | 2,591 | 2020 | 4,29 | 2,618 |
| | 3 | 86,7886 | 119,2401 | 1966 | 80,9851 | 115,292 | 4,08 | 2,807 | 1981 | 3,96 | 2,737 |
| | 4 | 81,6505 | 115,7972 | 1804 | 79,1983 | 113,9078 | 4,02 | 2,675 | 1834 | 4 | 2,776 |
| | 5 | 87,4323 | 122,0283 | 1890 | 88,0313 | 122,8911 | 4,12 | 2,554 | 1913 | 4,16 | 2,511 |
| | 6 | 72,4806 | 105,7225 | 2119 | 71,3825 | 104,4791 | 4,46 | 2,63 | 2156 | 4,43 | 2,666 |

*Appendix 8*. Building multi-level models

| | **Model 1 (intercept-only model)** | | | **Model 2 (samples as subgroups)** | | | **Model 3 (samples nested within countries)** | | | **Model 4 (fixed-effect model)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. |
| Intercept | 7,200632 | 0,003880 | 0,000000 | 7,215267 | 0,058466 | 0,000000 | 7,122054 | 0,146513 | 0,000000 | 6,946398 | 0,147559 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | | | | | | | | | 0,037382 | 0,001284 | 0,000000 |
| Between-person difference (Residual) | 4,032843 | 0,011019 | 0,000000 | 3,493513 | 0,009548 | 0,000000 | 3,493508 | 0,009548 | 0,000000 | 3,482514 | 0,009518 | 0,000000 |
| Level 2 intercept variance | | | | 0,520899 | 0,059782 | 0,000000 | 0,034477 | 0,004574 | 0,000000 | 0,033816 | 0,004492 | 0,000000 |
| Level 3 intercept variance | | | | | | | 0,551461 | 0,155072 | 0,000376 | 0,558634 | 0,157015 | 0,000374 |
| Number of Parameters | 2 | | | 3 | | | 4 | | | 5 | | |
| AIC | 1133820,578383 | | | 1096211,508578 | | | 1095922,193522 | | | 1095078,293440 | | |
| -2 Log Likelihood | 1133816,578383 | | | 1096205,508578 | | | 1095914,193522 | | | 1095068,293440 | | |

*Appendix 9*. Building multi-level models (2)

| | **Model 5 (random effect at level 2)** | | | **Model 6 (unstructured random effect at level 2)** | | | **Model 7 (random effects at level 2 & 3)** | | | **Model 8 (unstructured random effects at level 2 & 3)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. |
| Intercept | 6,947240 | 0,141874 | 0,000000 | 6,941549 | 0,149336 | 0,000000 | 6,948120 | 0,141951 | 0,000000 | 6,948225 | 0,141656 | 0,000000 |
| Degree of individual religiosity (fixed effect) | 0,037550 | 0,003014 | 0,000000 | 0,037470 | 0,003108 | 0,000000 | 0,036109 | 0,006478 | 0,000007 | 0,036082 | 0,006468 | 0,000007 |
| Between-person difference (Residual) | 3,473004 | 0,009495 | 0,000000 | 3,472837 | 0,009494 | 0,000000 | 3,472824 | 0,009494 | 0,000000 | 3,472823 | 0,009494 | 0,000000 |
| Level 2 intercept variance | 0,036807 | 0,005577 | 0,000000 | 0,067635 | 0,013486 | 0,000001 | 0,040205 | 0,006136 | 0,000000 | 0,040253 | 0,006147 | 0,000000 |
| Level 2 intercept+slope interaction | | | | -0,006539 | 0,001430 | 0,000005 | -0,001312 | 0,000476 | 0,005817 | -0,001317 | 0,000477 | 0,005735 |
| Level 2 slope variance | 0,001125 | 0,000157 | 0,000000 | 0,001212 | 0,000168 | 0,000000 | 0,000214 | 0,000058 | 0,000210 | 0,000214 | 0,000058 | 0,000209 |
| Level 3 intercept variance | 0,515027 | 0,145318 | 0,000394 | 0,566479 | 0,159599 | 0,000386 | 0,514936 | 0,145476 | 0,000401 | 0,512758 | 0,144930 | 0,000403 |
| Level 3 intercept+slope interaction | | | | | | | | | | 0,002479 | 0,004700 | 0,597974 |
| Level 3 slope variance | | | | | | | 0,001003 | 0,000302 | 0,000905 | 0,001000 | 0,000301 | 0,000909 |
| Number of Parameters | 6 | | | 7 | | | 8 | | | 9 | | |
| AIC | 1094627,772229 | | | 1094599,902332 | | | 1094491,486085 | | | 1094493,205532 | | |
| -2 Log Likelihood | 1094615,772229 | | | 1094585,902332 | | | 1094475,486085 | | | 1094475,205532 | | |

*Appendix 10*. Effect of religiosity dimensions

| | | Model 9 (denomination) | | | Model 10 (church attendance) | | | Model 11 (prayer) | | | Model 12 (gender) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. |
| Intercept | | 6,991231 | 0,137515 | 0,000000 | 6,992857 | 0,137468 | 0,000000 | 6,975946 | 0,137368 | 0,000000 | 6,971268 | 0,137432 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | 0,041945 | 0,006427 | 0,000001 | 0,041128 | 0,006412 | 0,000001 | 0,051034 | 0,006542 | 0,000000 | 0,051209 | 0,006541 | 0,000000 |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,082687 | 0,012797 | 0,000000 | -0,083821 | 0,012809 | 0,000000 | -0,073303 | 0,012820 | 0,000000 | -0,073405 | 0,012820 | 0,000000 |
| | Protestant | 0,068154 | 0,013663 | 0,000001 | 0,067711 | 0,013664 | 0,000001 | 0,081311 | 0,013685 | 0,000000 | 0,081328 | 0,013685 | 0,000000 |
| | Eastern Orthodox | -0,282063 | 0,021354 | 0,000000 | -0,281778 | 0,021354 | 0,000000 | -0,273753 | 0,021351 | 0,000000 | -0,273514 | 0,021352 | 0,000000 |
| | Other Christian | -0,066070 | 0,033741 | 0,050217 | -0,070609 | 0,033813 | 0,036782 | -0,036056 | 0,033866 | 0,287024 | -0,036627 | 0,033870 | 0,279522 |
| | Islam | -0,334333 | 0,029393 | 0,000000 | -0,338409 | 0,029460 | 0,000000 | -0,313476 | 0,029487 | 0,000000 | -0,314640 | 0,029508 | 0,000000 |
| | Jewish & Eastern religions | -0,185347 | 0,045015 | 0,000038 | -0,187368 | 0,045026 | 0,000032 | -0,168173 | 0,045020 | 0,000187 | -0,168726 | 0,045023 | 0,000179 |
| | Religious in the past | -0,072421 | 0,013918 | 0,000000 | -0,072064 | 0,013919 | 0,000000 | -0,072530 | 0,013912 | 0,000000 | -0,072496 | 0,013912 | 0,000000 |
| Frequency of attending religious occasions | | | | | 0,000228 | 0,000111 | 0,040480 | 0,000608 | 0,000114 | 0,000000 | 0,000606 | 0,000114 | 0,000000 |
| Frequency of prayer | | | | | | | | -0,000505 | 0,000031 | 0,000000 | -0,000501 | 0,000032 | 0,000000 |
| Gender: male (ref.: female) | | | | | | | | | | | 0,007712 | 0,007414 | 0,298250 |
| Between-person difference (Residual) | | 3,468019 | 0,009481 | 0,000000 | 3,467969 | 0,009481 | 0,000000 | 3,464641 | 0,009472 | 0,000000 | 3,464627 | 0,009472 | 0,000000 |
| Level 2 intercept variance | | 0,040708 | 0,006209 | 0,000000 | 0,040733 | 0,006212 | 0,000000 | 0,040624 | 0,006192 | 0,000000 | 0,040636 | 0,006194 | 0,000000 |
| Level 2 intercept+slope interaction | | -0,001353 | 0,000482 | 0,004968 | -0,001357 | 0,000482 | 0,004883 | -0,001327 | 0,000477 | 0,005455 | -0,001329 | 0,000478 | 0,005402 |
| Level 2 slope variance | | 0,000215 | 0,000058 | 0,000212 | 0,000215 | 0,000058 | 0,000214 | 0,000210 | 0,000057 | 0,000246 | 0,000210 | 0,000057 | 0,000245 |
| Level 3 intercept variance | | 0,482145 | 0,136509 | 0,000412 | 0,481792 | 0,136413 | 0,000413 | 0,481067 | 0,136203 | 0,000412 | 0,480996 | 0,136184 | 0,000413 |
| Level 3 intercept+slope interaction | | -0,001714 | 0,004520 | 0,704509 | -0,001608 | 0,004497 | 0,720697 | -0,001697 | 0,004563 | 0,710001 | -0,001712 | 0,004560 | 0,707375 |
| Level 3 slope variance | | 0,000970 | 0,000293 | 0,000943 | 0,000961 | 0,000291 | 0,000956 | 0,000996 | 0,000300 | 0,000895 | 0,000994 | 0,000299 | 0,000896 |
| Number of Parameters | | 16 | | | 17 | | | 18 | | | 19 | | |
| AIC | | 1094134,830340 | | | 1094132,634256 | | | 1093877,358640 | | | 1093878,276692 | | |
| -2 Log Likelihood | | 1094102,830340 | | | 1094098,634256 | | | 1093841,358640 | | | 1093840,276692 | | |

*Appendix 11*. Controlling socio-demographic and socio-economic background

| | | Model 13 (age) | | | Model 14 (education) | | | Model 15 (income) | | | Model 16 (health) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. |
| Intercept | | 6,897265 | 0,135181 | 0,000000 | 6,874043 | 0,136852 | 0,000000 | 5,353477 | 0,087809 | 0,000000 | 3,643336 | 0,089344 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | 0,057441 | 0,006525 | 0,000000 | 0,060156 | 0,006359 | 0,000000 | 0,060154 | 0,005466 | 0,000000 | 0,061022 | 0,004928 | 0,000000 |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,005870 | 0,012760 | 0,645495 | -0,005009 | 0,012713 | 0,693587 | -0,048059 | 0,012170 | 0,000078 | -0,061403 | 0,011763 | 0,000000 |
| | Protestant | 0,165753 | 0,013637 | 0,000000 | 0,152819 | 0,013589 | 0,000000 | 0,085312 | 0,013016 | 0,000000 | 0,056992 | 0,012583 | 0,000006 |
| | Eastern Orthodox | -0,247804 | 0,021186 | 0,000000 | -0,254608 | 0,021107 | 0,000000 | -0,164875 | 0,020185 | 0,000000 | -0,143895 | 0,019481 | 0,000000 |
| | Other Christian | -0,078596 | 0,033606 | 0,019350 | -0,093000 | 0,033485 | 0,005481 | -0,032025 | 0,032066 | 0,317929 | -0,023927 | 0,031012 | 0,440395 |
| | Islam | -0,470611 | 0,029369 | 0,000000 | -0,395039 | 0,029311 | 0,000000 | -0,123045 | 0,028118 | 0,000012 | -0,117082 | 0,027188 | 0,000017 |
| | Jewish & Eastern religions | -0,232400 | 0,044675 | 0,000000 | -0,269818 | 0,044521 | 0,000000 | -0,188484 | 0,042635 | 0,000010 | -0,157580 | 0,041236 | 0,000133 |
| | Religious in the past | -0,026356 | 0,013820 | 0,056508 | -0,061040 | 0,013791 | 0,000010 | -0,068848 | 0,013205 | 0,000000 | -0,048115 | 0,012773 | 0,000165 |
| Frequency of attending religious occasions | | 0,000932 | 0,000113 | 0,000000 | 0,000937 | 0,000113 | 0,000000 | 0,000741 | 0,000108 | 0,000000 | 0,000429 | 0,000104 | 0,000039 |
| Frequency of prayer | | -0,000179 | 0,000032 | 0,000000 | -0,000144 | 0,000032 | 0,000006 | 0,000007 | 0,000030 | 0,829959 | 0,000147 | 0,000029 | 0,000001 |
| Gender: male (ref.: female) | | 0,017836 | 0,007357 | 0,015336 | 0,014334 | 0,007331 | 0,050537 | -0,043267 | 0,007030 | 0,000000 | -0,074846 | 0,006804 | 0,000000 |
| Age of respondent (grand mean centred) | | -0,013489 | 0,000206 | 0,000000 | -0,011123 | 0,000212 | 0,000000 | -0,011017 | 0,000203 | 0,000000 | -0,001091 | 0,000210 | 0,000000 |
| Years of full-time education completed (group mean centred) | | | | | 0,043248 | 0,000976 | 0,000000 | 0,014337 | 0,000955 | 0,000000 | 0,000601 | 0,000929 | 0,517931 |
| Feeling about household's income (ref.: very difficult | Living comfortably on present income | | | | | | | 2,200571 | 0,015492 | 0,000000 | 1,822651 | 0,015248 | 0,000000 |
| | Coping on present income | | | | | | | 1,721856 | 0,014110 | 0,000000 | 1,441250 | 0,013837 | 0,000000 |

| | | Model 13 (age) | | | Model 14 (education) | | | Model 15 (income) | | | Model 16 (health) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. | Estimate | Std. Error | Sig. |
| on present income) | Difficult on present income | | | | | | | 0,949801 | 0,014668 | 0,000000 | 0,800302 | 0,014256 | 0,000000 |
| Subjective general health (ref: Very bad) | Very good | | | | | | | | | | 2,600240 | 0,028964 | 0,000000 |
| | Good | | | | | | | | | | 2,112240 | 0,028135 | 0,000000 |
| | Fair | | | | | | | | | | 1,595961 | 0,027957 | 0,000000 |
| | Bad | | | | | | | | | | 0,848114 | 0,029645 | 0,000000 |
| Between-person difference (Residual) | | 3,409731 | 0,009322 | 0,000000 | 3,384975 | 0,009254 | 0,000000 | 3,103955 | 0,008486 | 0,000000 | 2,903658 | 0,007938 | 0,000000 |
| Level 2 intercept variance | | 0,043798 | 0,006562 | 0,000000 | 0,042654 | 0,006413 | 0,000000 | 0,025705 | 0,004158 | 0,000000 | 0,025803 | 0,004108 | 0,000000 |
| Level 2 intercept+slope interaction | | -0,001476 | 0,000491 | 0,002630 | -0,001443 | 0,000482 | 0,002766 | -0,000877 | 0,000361 | 0,015199 | -0,001092 | 0,000364 | 0,002719 |
| Level 2 slope variance | | 0,000207 | 0,000056 | 0,000237 | 0,000204 | 0,000056 | 0,000254 | 0,000171 | 0,000049 | 0,000509 | 0,000175 | 0,000048 | 0,000290 |
| Level 3 intercept variance | | 0,464481 | 0,131707 | 0,000421 | 0,476514 | 0,134974 | 0,000415 | 0,189411 | 0,054355 | 0,000493 | 0,179234 | 0,051578 | 0,000511 |
| Level 3 intercept+slope interaction | | -0,001951 | 0,004473 | 0,662688 | -0,002664 | 0,004425 | 0,547098 | -0,002815 | 0,002462 | 0,252975 | -0,005039 | 0,002342 | 0,031430 |
| Level 3 slope variance | | 0,000991 | 0,000297 | 0,000865 | 0,000936 | 0,000282 | 0,000899 | 0,000674 | 0,000207 | 0,001146 | 0,000533 | 0,000168 | 0,001493 |
| Number of Parameters | | | 20 | | | 21 | | | 24 | | | 28 | |
| AIC | | | 1089608,739825 | | | 1087655,259528 | | | 1064367,387315 | | | 1046497,109205 | |
| -2 Log Likelihood | | | 1089568,739825 | | | 1087613,259528 | | | 1064319,387315 | | | 1046441,109205 | |

*Appendix 12*. Controlling social capital and sample-level economic and religious background

| | | Model 17 (social network) | | | Model 18 (trust) | | | Model 19 (GDP) | | | Model 20 (mean religiosity) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| Intercept | | 3,538892 | 0,087934 | 0,000000 | 3,205696 | 0,078118 | 0,000000 | 3,201511 | 0,061249 | 0,000000 | 2,912317 | 0,165379 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | 0,061046 | 0,004976 | 0,000000 | 0,056707 | 0,004946 | 0,000000 | 0,056725 | 0,004954 | 0,000000 | 0,056693 | 0,004950 | 0,000000 |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,058314 | 0,011722 | 0,000001 | -0,051329 | 0,011633 | 0,000010 | -0,051196 | 0,011626 | 0,000011 | -0,051204 | 0,011624 | 0,000011 |
| | Protestant | 0,056433 | 0,012539 | 0,000007 | 0,044589 | 0,012446 | 0,000340 | 0,043988 | 0,012444 | 0,000408 | 0,044042 | 0,012442 | 0,000400 |
| | Eastern Orthodox | -0,142477 | 0,019416 | 0,000000 | -0,134386 | 0,019258 | 0,000000 | -0,133279 | 0,019222 | 0,000000 | -0,133816 | 0,019223 | 0,000000 |
| | Other Christian | -0,020338 | 0,030901 | 0,510432 | -0,008317 | 0,030670 | 0,786253 | -0,008390 | 0,030670 | 0,784432 | -0,008214 | 0,030670 | 0,788841 |
| | Islam | -0,111772 | 0,027091 | 0,000037 | -0,090443 | 0,026890 | 0,000770 | -0,091154 | 0,026888 | 0,000699 | -0,091092 | 0,026886 | 0,000704 |
| | Jewish & Eastern religions | -0,157922 | 0,041087 | 0,000121 | -0,152590 | 0,040780 | 0,000183 | -0,153281 | 0,040780 | 0,000171 | -0,153030 | 0,040780 | 0,000175 |
| | Religious in the past | -0,051212 | 0,012727 | 0,000057 | -0,059226 | 0,012632 | 0,000003 | -0,059180 | 0,012630 | 0,000003 | -0,059172 | 0,012631 | 0,000003 |
| Frequency of attending religious occasions | | 0,000331 | 0,000104 | 0,001450 | 0,000274 | 0,000103 | 0,007943 | 0,000274 | 0,000103 | 0,007755 | 0,000274 | 0,000103 | 0,007817 |
| Frequency of prayer | | 0,000114 | 0,000029 | 0,000098 | 0,000148 | 0,000029 | 0,000000 | 0,000148 | 0,000029 | 0,000000 | 0,000148 | 0,000029 | 0,000000 |
| Gender: male (ref.: female) | | -0,079956 | 0,006781 | 0,000000 | -0,083548 | 0,006730 | 0,000000 | -0,083519 | 0,006730 | 0,000000 | -0,083582 | 0,006730 | 0,000000 |
| Age of respondent (grand mean centred) | | 0,000623 | 0,000213 | 0,003465 | 0,000138 | 0,000212 | 0,515216 | 0,000125 | 0,000212 | 0,554240 | 0,000129 | 0,000212 | 0,541585 |
| Years of full-time education completed (group mean centred) | | 0,003068 | 0,000928 | 0,000939 | -0,002902 | 0,000925 | 0,001711 | -0,002890 | 0,000925 | 0,001788 | -0,002885 | 0,000925 | 0,001825 |
| Feeling about household's income (ref.: very difficult on | Living comfortably on present income | 1,809920 | 0,015197 | 0,000000 | 1,730086 | 0,015134 | 0,000000 | 1,729367 | 0,015135 | 0,000000 | 1,729180 | 0,015135 | 0,000000 |
| | Coping on present income | 1,437225 | 0,013788 | 0,000000 | 1,387878 | 0,013706 | 0,000000 | 1,387564 | 0,013706 | 0,000000 | 1,387433 | 0,013706 | 0,000000 |

| | | Model 17 (social network) | | | Model 18 (trust) | | | Model 19 (GDP) | | | Model 20 (mean religiosity) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| present income) | Difficult on present income | 0,800877 | 0,014205 | 0,000000 | 0,778396 | 0,014103 | 0,000000 | 0,778356 | 0,014102 | 0,000000 | 0,778279 | 0,014102 | 0,000000 |
| Subjective general health (ref: Very bad) | Very good | 2,578649 | 0,028864 | 0,000000 | 2,491468 | 0,028680 | 0,000000 | 2,490234 | 0,028680 | 0,000000 | 2,490288 | 0,028680 | 0,000000 |
| | Good | 2,109285 | 0,028034 | 0,000000 | 2,046436 | 0,027842 | 0,000000 | 2,045550 | 0,027842 | 0,000000 | 2,045583 | 0,027842 | 0,000000 |
| | Fair | 1,594274 | 0,027856 | 0,000000 | 1,559755 | 0,027653 | 0,000000 | 1,559258 | 0,027654 | 0,000000 | 1,559298 | 0,027653 | 0,000000 |
| | Bad | 0,843800 | 0,029538 | 0,000000 | 0,829523 | 0,029318 | 0,000000 | 0,829340 | 0,029318 | 0,000000 | 0,829395 | 0,029318 | 0,000000 |
| Frequency of meeting others socially | | 0,001281 | 0,000029 | 0,000000 | 0,001247 | 0,000029 | 0,000000 | 0,001246 | 0,000029 | 0,000000 | 0,001246 | 0,000029 | 0,000000 |
| Trust in people | | | | | 0,093826 | 0,001472 | 0,000000 | 0,093768 | 0,001472 | 0,000000 | 0,093779 | 0,001472 | 0,000000 |
| Gross Domestic Product, purchase power parity (standardised, grand mean centred) | | | | | | | | 0,240865 | 0,037939 | 0,000000 | 0,252469 | 0,039542 | 0,000000 |
| Sample-level average degree of individual religiosity | | | | | | | | | | | 0,062188 | 0,032624 | 0,060828 |
| Between-person difference (Residual) | | 2,882774 | 0,007881 | 0,000000 | 2,839869 | 0,007764 | 0,000000 | 2,839870 | 0,007764 | 0,000000 | 2,839872 | 0,007764 | 0,000000 |
| Level 2 intercept variance | | 0,026376 | 0,004175 | 0,000000 | 0,024249 | 0,003885 | 0,000000 | 0,020162 | 0,003354 | 0,000000 | 0,019310 | 0,003280 | 0,000000 |
| Level 2 intercept+slope interaction | | -0,001027 | 0,000359 | 0,004191 | -0,000920 | 0,000338 | 0,006570 | -0,000725 | 0,000311 | 0,019959 | -0,000715 | 0,000307 | 0,020130 |
| Level 2 slope variance | | 0,000164 | 0,000047 | 0,000441 | 0,000153 | 0,000045 | 0,000675 | 0,000153 | 0,000045 | 0,000655 | 0,000153 | 0,000045 | 0,000659 |
| Level 3 intercept variance | | 0,172649 | 0,049794 | 0,000526 | 0,130302 | 0,037956 | 0,000597 | 0,069919 | 0,020878 | 0,000811 | 0,086731 | 0,028509 | 0,002349 |
| Level 3 intercept+slope interaction | | -0,004822 | 0,002308 | 0,036711 | -0,004239 | 0,002010 | 0,034995 | -0,003411 | 0,001527 | 0,025479 | -0,004274 | 0,001808 | 0,018102 |
| Level 3 slope variance | | 0,000548 | 0,000171 | 0,001390 | 0,000543 | 0,000170 | 0,001383 | 0,000545 | 0,000170 | 0,001378 | 0,000544 | 0,000170 | 0,001375 |
| Number of Parameters | | 29 | | | 30 | | | 31 | | | 32 | | |
| AIC | | 1044569,205049 | | | 1040538,164730 | | | 1040509,016165 | | | 1040508,146387 | | |
| -2 Log Likelihood | | 1044511,205049 | | | 1040478,164730 | | | 1040447,016165 | | | 1040444,146387 | | |

*Appendix 13*. Controlling sample-level religiosity and social capital with country-level religious culture

| | | Model 21 (average share of religiously affiliated people) | | | Model 22 (average frequency of meeting others socially) | | | Model 23 (average frequency of attending religious occasions) | | | Model 25 (country-level variance of effect of religious belonging) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| Intercept | | 2,972762 | 0,154422 | 0,000000 | 3,137591 | 0,171668 | 0,000000 | 3,198391 | 0,179359 | 0,000000 | 3,199219 | 0,180532 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | 0,056584 | 0,004953 | 0,000000 | 0,056640 | 0,004957 | 0,000000 | 0,056698 | 0,004944 | 0,000000 | 0,056816 | 0,005368 | 0,000000 |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,050389 | 0,011627 | 0,000015 | -0,049877 | 0,011622 | 0,000018 | -0,050436 | 0,011619 | 0,000014 | -0,040244 | 0,018391 | 0,034566 |
| | Protestant | 0,044560 | 0,012443 | 0,000342 | 0,044654 | 0,012438 | 0,000330 | 0,044871 | 0,012432 | 0,000307 | 0,038416 | 0,019727 | 0,057534 |
| | Eastern Orthodox | -0,132921 | 0,019222 | 0,000000 | -0,134282 | 0,019206 | 0,000000 | -0,132876 | 0,019188 | 0,000000 | -0,126423 | 0,025926 | 0,000004 |
| | Other Christian | -0,007800 | 0,030671 | 0,799258 | -0,007265 | 0,030670 | 0,812748 | -0,007292 | 0,030669 | 0,812068 | -0,002903 | 0,033728 | 0,931436 |
| | Islam | -0,090385 | 0,026887 | 0,000775 | -0,090664 | 0,026882 | 0,000745 | -0,090274 | 0,026878 | 0,000783 | -0,087284 | 0,030392 | 0,004371 |
| | Jewish & Eastern religions | -0,152788 | 0,040780 | 0,000179 | -0,152518 | 0,040780 | 0,000184 | -0,152440 | 0,040779 | 0,000185 | -0,156451 | 0,043201 | 0,000305 |
| | Religious in the past | -0,058956 | 0,012630 | 0,000003 | -0,058876 | 0,012631 | 0,000003 | -0,059099 | 0,012630 | 0,000003 | -0,057633 | 0,012899 | 0,000008 |
| Frequency of attending religious occasions | | 0,000276 | 0,000103 | 0,007477 | 0,000276 | 0,000103 | 0,007310 | 0,000272 | 0,000103 | 0,008248 | 0,000267 | 0,000103 | 0,009629 |
| Frequency of prayer | | 0,000148 | 0,000029 | 0,000000 | 0,000148 | 0,000029 | 0,000000 | 0,000148 | 0,000029 | 0,000000 | 0,000149 | 0,000029 | 0,000000 |
| Gender: male (ref.: female) | | -0,083595 | 0,006730 | 0,000000 | -0,083606 | 0,006730 | 0,000000 | -0,083628 | 0,006730 | 0,000000 | -0,082780 | 0,006745 | 0,000000 |
| Age of respondent (grand mean centred) | | 0,000128 | 0,000212 | 0,546424 | 0,000128 | 0,000212 | 0,545076 | 0,000131 | 0,000212 | 0,535480 | 0,000150 | 0,000213 | 0,480555 |
| Years of full-time education completed (group mean centred) | | -0,002887 | 0,000925 | 0,001812 | -0,002883 | 0,000925 | 0,001834 | -0,002884 | 0,000925 | 0,001826 | -0,002941 | 0,000928 | 0,001524 |
| Feeling about household's income | Living comfortably on present income | 1,729136 | 0,015135 | 0,000000 | 1,729389 | 0,015134 | 0,000000 | 1,729226 | 0,015134 | 0,000000 | 1,731011 | 0,015174 | 0,000000 |

| | | Model 21 (average share of religiously affiliated people) | | | Model 22 (average frequency of meeting others socially) | | | Model 23 (average frequency of attending religious occasions) | | | Model 25 (country-level variance of effect of religious belonging) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| (ref.: very difficult on present income | Coping on present income | 1,387417 | 0,013706 | 0,000000 | 1,387628 | 0,013705 | 0,000000 | 1,387567 | 0,013705 | 0,000000 | 1,390369 | 0,013742 | 0,000000 |
| | Difficult on present income | 0,778227 | 0,014102 | 0,000000 | 0,778341 | 0,014102 | 0,000000 | 0,778303 | 0,014101 | 0,000000 | 0,779589 | 0,014141 | 0,000000 |
| Subjective general health (ref: Very bad) | Very good | 2,490346 | 0,028680 | 0,000000 | 2,489935 | 0,028680 | 0,000000 | 2,489987 | 0,028680 | 0,000000 | 2,489116 | 0,028761 | 0,000000 |
| | Good | 2,045579 | 0,027842 | 0,000000 | 2,045273 | 0,027842 | 0,000000 | 2,045275 | 0,027841 | 0,000000 | 2,044109 | 0,027922 | 0,000000 |
| | Fair | 1,559289 | 0,027653 | 0,000000 | 1,559049 | 0,027653 | 0,000000 | 1,559052 | 0,027653 | 0,000000 | 1,557958 | 0,027733 | 0,000000 |
| | Bad | 0,829439 | 0,029318 | 0,000000 | 0,829324 | 0,029318 | 0,000000 | 0,829389 | 0,029318 | 0,000000 | 0,826442 | 0,029402 | 0,000000 |
| Frequency of meeting others socially | | 0,001246 | 0,000029 | 0,000000 | 0,001249 | 0,000029 | 0,000000 | 0,001249 | 0,000029 | 0,000000 | 0,001245 | 0,000029 | 0,000000 |
| Trust in people | | 0,093763 | 0,001472 | 0,000000 | 0,093777 | 0,001472 | 0,000000 | 0,093785 | 0,001472 | 0,000000 | 0,093688 | 0,001476 | 0,000000 |
| Gross Domestic Product, purchase power parity (standardised, grand mean centred) | | 0,243964 | 0,036662 | 0,000000 | 0,256542 | 0,037174 | 0,000000 | 0,263805 | 0,037121 | 0,000000 | 0,260357 | 0,037150 | 0,000000 |
| Sample-level average degree of individual religiosity | | 0,146768 | 0,044632 | 0,001288 | 0,160118 | 0,043495 | 0,000331 | 0,133309 | 0,045720 | 0,004150 | 0,132249 | 0,045847 | 0,004559 |
| Sample-level share of belonging to a religious denomination | | -0,749344 | 0,249198 | 0,003230 | -0,658707 | 0,244287 | 0,007979 | -0,734662 | 0,247769 | 0,003589 | -0,749952 | 0,248635 | 0,003070 |
| Sample-level average frequency of meeting others socially | | | | | -0,002957 | 0,000819 | 0,000442 | -0,003306 | 0,000810 | 0,000079 | -0,003295 | 0,000813 | 0,000087 |

| | Model 21 (average share of religiously affiliated people) | | | Model 22 (average frequency of meeting others socially) | | | Model 23 (average frequency of attending religious occasions) | | | Model 25 (country-level variance of effect of religious belonging) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| Sample-level average frequency of attending religious occasions | | | | | | | 0,011288 | 0,004997 | 0,026198 | 0,012118 | 0,005010 | 0,017512 |
| Between-person difference (Residual) | 2,839871 | 0,007764 | 0,000000 | 2,839869 | 0,007764 | 0,000000 | 2,839866 | 0,007764 | 0,000000 | 2,836932 | 0,007777 | 0,000000 |
| Level 2 intercept variance | 0,019184 | 0,003258 | 0,000000 | 0,017149 | 0,003002 | 0,000000 | 0,016527 | 0,002915 | 0,000000 | 0,016633 | 0,002932 | 0,000000 |
| Level 2 intercept+slope interaction | -0,000741 | 0,000308 | 0,016050 | -0,000706 | 0,000296 | 0,017168 | -0,000698 | 0,000293 | 0,017307 | -0,000707 | 0,000295 | 0,016550 |
| Level 2 slope variance | 0,000152 | 0,000045 | 0,000663 | 0,000153 | 0,000045 | 0,000639 | 0,000155 | 0,000045 | 0,000596 | 0,000157 | 0,000045 | 0,000516 |
| Level 3 intercept variance | 0,067545 | 0,022207 | 0,002353 | 0,091089 | 0,030706 | 0,003013 | 0,114783 | 0,040275 | 0,004372 | 0,120348 | 0,042554 | 0,004682 |
| Level 3 intercept+slope interaction | -0,003645 | 0,001614 | 0,023898 | -0,004968 | 0,001949 | 0,010811 | -0,006187 | 0,002291 | 0,006910 | -0,007118 | 0,002592 | 0,006039 |
| Level 3 slope variance | 0,000545 | 0,000170 | 0,001371 | 0,000546 | 0,000170 | 0,001365 | 0,000542 | 0,000170 | 0,001382 | 0,000654 | 0,000203 | 0,001267 |
| Level 3 variance in the effect of denominational belonging | | | | | | | | | | 0,002565 | 0,001075 | 0,016988 |
| Number of Parameters | 33 | | | 34 | | | 35 | | | 36 | | |
| AIC | 1040501,893816 | | | 1040492,696515 | | | 1040490,634222 | | | 1034820,339951 | | |
| -2 Log Likelihood | 1040435,893816 | | | 1040424,696515 | | | 1040420,634222 | | | 1034748,339951 | | |

## *Appendix 14*. Sample-level average frequency of payer

| | | Model 24a | | | Model 24b | | |
|---|---|---|---|---|---|---|---|
| | | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| Intercept | | 3,201750 | 0,190312 | 0,000000 | 3,208237 | 0,190093 | 0,000000 |
| Degree of individual religiosity (fixed effect) | | 0,056699 | 0,004944 | 0,000000 | 0,056669 | 0,004955 | 0,000000 |
| Religious affiliation (ref: not religious) | Roman Catholic | -0,050431 | 0,011619 | 0,000014 | -0,049934 | 0,011619 | 0,000017 |
| | Protestant | 0,044867 | 0,012432 | 0,000307 | 0,044649 | 0,012435 | 0,000330 |
| | Eastern Orthodox | -0,132877 | 0,019188 | 0,000000 | -0,134056 | 0,019198 | 0,000000 |
| | Other Christian | -0,007293 | 0,030669 | 0,812034 | -0,007295 | 0,030670 | 0,811984 |
| | Islam | -0,090266 | 0,026878 | 0,000784 | -0,090496 | 0,026881 | 0,000761 |
| | Jewish & Eastern religions | -0,152441 | 0,040779 | 0,000185 | -0,152515 | 0,040779 | 0,000184 |
| | Religious in the past | -0,059100 | 0,012630 | 0,000003 | -0,058959 | 0,012631 | 0,000003 |
| Frequency of attending religious occasions | | 0,000272 | 0,000103 | 0,008244 | 0,000276 | 0,000103 | 0,007439 |
| Frequency of prayer | | 0,000147 | 0,000029 | 0,000000 | 0,000147 | 0,000029 | 0,000000 |
| Gender: male (ref.: female) | | -0,083630 | 0,006730 | 0,000000 | -0,083636 | 0,006730 | 0,000000 |
| Age of respondent (grand mean centred) | | 0,000131 | 0,000212 | 0,535396 | 0,000129 | 0,000212 | 0,541448 |
| Years of full-time education completed (group mean centred) | | -0,002884 | 0,000925 | 0,001827 | -0,002883 | 0,000925 | 0,001837 |
| Feeling about household's income (ref.: very difficult on present income | Living comfortably on present income | 1,729225 | 0,015134 | 0,000000 | 1,729353 | 0,015134 | 0,000000 |
| | Coping on present income | 1,387568 | 0,013705 | 0,000000 | 1,387633 | 0,013705 | 0,000000 |
| | Difficult on present income | 0,778304 | 0,014101 | 0,000000 | 0,778349 | 0,014102 | 0,000000 |
| Subjective general health (ref: Very bad) | Very good | 2,489988 | 0,028680 | 0,000000 | 2,489953 | 0,028680 | 0,000000 |
| | Good | 2,045275 | 0,027841 | 0,000000 | 2,045272 | 0,027842 | 0,000000 |
| | Fair | 1,559051 | 0,027653 | 0,000000 | 1,559041 | 0,027653 | 0,000000 |
| | Bad | 0,829389 | 0,029318 | 0,000000 | 0,829339 | 0,029318 | 0,000000 |
| Frequency of meeting others socially | | 0,001249 | 0,000029 | 0,000000 | 0,001249 | 0,000029 | 0,000000 |
| Trust in people | | 0,093785 | 0,001472 | 0,000000 | 0,093781 | 0,001472 | 0,000000 |
| Gross Domestic Product, purchase power parity (standardised, grand mean centred) | | 0,263870 | 0,037145 | 0,000000 | 0,259204 | 0,037299 | 0,000000 |
| Sample-level average degree of individual religiosity | | 0,131489 | 0,056074 | 0,020376 | 0,123796 | 0,056394 | 0,029756 |
| Sample-level share of belonging to a religious denomination | | -0,734962 | 0,247957 | 0,003599 | -0,683769 | 0,246820 | 0,006421 |

| | Model 24a | | | Model 24b | | |
|---|---|---|---|---|---|---|
| | **Estimate** | **Std. Error** | **Sig.** | **Estimate** | **Std. Error** | **Sig.** |
| Sample-level average frequency of meeting others socially | -0,003306 | 0,000812 | 0,000081 | -0,003037 | 0,000817 | 0,000303 |
| Sample-level average frequency of attending religious occasions | 0,011113 | 0,006040 | 0,068181 | | | |
| Sample-level average frequency of prayer | 0,000089 | 0,001557 | 0,954705 | 0,001433 | 0,001301 | 0,272680 |
| Between-person difference (Residual) | 2,839866 | 0,007764 | 0,000000 | 2,839873 | 0,007764 | 0,000000 |
| Level 2 intercept variance | 0,016529 | 0,002916 | 0,000000 | 0,017040 | 0,003000 | 0,000000 |
| Level 2 intercept+slope interaction | -0,000699 | 0,000294 | 0,017281 | -0,000708 | 0,000296 | 0,016655 |
| Level 2 slope variance | 0,000155 | 0,000045 | 0,000603 | 0,000152 | 0,000045 | 0,000661 |
| Level 3 intercept variance | 0,115042 | 0,040633 | 0,004636 | 0,099871 | 0,034793 | 0,004099 |
| Level 3 intercept+slope interaction | -0,006198 | 0,002301 | 0,007060 | -0,005437 | 0,002102 | 0,009692 |
| Level 3 slope variance | 0,000542 | 0,000170 | 0,001381 | 0,000545 | 0,000170 | 0,001361 |
| Number of Parameters | | 36 | | | 35 | |
| AIC | | 1040492,631057 | | | 1040493,627262 | |
| -2 Log Likelihood | | 1040420,631057 | | | 1040423,627262 | |

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