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Alternative Recipes for Life Satisfaction: Evidence from Five World Regions

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Abstract

In most cross-national research on Life Satisfaction (LS) an implicit assumption appears to be that the correlates of LS are the same the world over; 'one size fits all'. Using data from the World Values Survey (1999–2014), we question this assumption by assessing the effects of differing personal values/life priorities on LS in five world regions: the West, Latin America, the Asian-Confucian region, ex-Communist Eastern Europe, and the Communist countries of China and Vietnam. We indicate that differing values - traditional family values, friendship and leisure values, materialistic values, political values, prosocial and environmental values, and religious values – are endorsed to varying degrees in different parts of the world, and vary in whether they have positive or negative effects on LS. Personal values provide the basis for *alternative 'recipes' affecting LS*. By 'recipes' we mean *linked set of values, attitudes, behavioural choices and domain satisfactions* that have a positive or negative effect on LS. We estimate structural equation models which indicate that differing values-based recipes help to account for large, unexpected differences between mean levels of LS in the five world regions, compared with the levels 'predicted' by GDP per capita. In particular, the high priority given to traditional family and religious recipes in Latin America helps to account for unexpectedly high LS in that region. Deficits in prosocial attitudes and behaviours partly account for low LS in ex-Communist Eastern Europe.

Keywords: Life satisfaction (LS), Personal values, Recipes affecting LS, Structural equation models, World values survey

Introduction: ‘Recipes’ for Life Satisfaction

In the annual World Happiness Reports issued by the United Nations, and in most other cross-national research on happiness or life satisfaction (LS), there appears to be an assumption that the correlates of LS are the same the world over. Most reviews of research, whether written by psychologists, sociologists or economists, are organised by dividing the correlates of LS into sub-sets (e.g. socio-economic correlates, personality traits, social networks, domain satisfactions) and summarising which correlates are strongly related to LS and which are only weakly related (Diener et al. 1999; Argyle 2001; Frey and Stutzer 2002; Layard 2008; United Nations 2012–18). The implication is that individuals will only enjoy high LS if they record high ratings on the variables that are strongly positively related to LS, and will record low LS if they rate low on these variables. It is not explicitly stated that there is no between-person nor between-country variation in the determinants of LS, but the implication is that ‘one size fits all’.

In view of the diversity of religions and belief systems, social and economic conditions and lifestyles in different parts of the world, a ‘one size fits all’ assumption has always seemed dubious. In previous papers we questioned the assumption and explored the possibility that there are alternative approaches to LS, based on personal values/life priorities (Headey and Wagner 2018, 2019). However, our evidence came from just two countries – Germany and Australia – both of them relatively rich, democratic and Christian-background countries. We showed that in these countries there are at least three linked sets of personal values/life priorities, behavioural choices and domain satisfactions, which we termed *alternative ‘recipes’ affecting LS*. Adherence to two of these recipes – a traditional family recipe and a prosocial, altruistic recipe - was linked to above average LS, whereas adherence to a materialistic (money and career) recipe was linked to below average LS.

In this paper, using data from the World Values Survey (WVS) for 1999–2014, we tentatively identity some additional ‘recipes’. A friendship and leisure values recipe appeals particularly to young people. A religious recipe, based on adherence to Christian, Moslem or Buddhist beliefs, tends to attract older people. Further, we make a distinction between two somewhat different political/prosocial recipes. The distinction lies between ‘hard’ politics – a recipe based on belief in the ‘importance’ of politics and political party activism – and a recipe based on ‘soft’ prosocial/altruistic and environmental values. A key finding, contrary to the ‘one size fits all assumption’, is that recipes based on religious values and political values promote above average LS in some world regions, but low LS in other regions. Further, it transpires that materialistic values, which are associated with low LS in the West, are linked to average or above average LS in less affluent parts of the world.

We also report that, in each country and world region, there is a small percentage of people who rate all values listed in the WVS as unimportant. These people apparently have no clear life priorities…and they have very low levels of LS.

It needs to be understood that when we refer to WVS respondents as apparently ‘following’ or ‘adhering to’ a set of values or a recipe, we are not claiming that most individuals have just one set of values that they consciously prioritise and intend as the basis of a recipe for LS. In fact, what we are calling ‘recipes’ are just statistical models – chains of empirically linked values, attitudes, choices, domain satisfactions and LS – from which it is inferred that many people live *as if* they were following a formula, a

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program, or a recipe. As in most surveys, WVS respondents are not directly asked about their motives, so we cannot claim that they are consciously following particular approaches to LS.

Research Results from Non-Western Countries

A secondary aim of the paper is to suggest part-explanations for recent survey evidence from non-Western countries that has astonished Western-based researchers. Until the last decade or so, nearly all published research on LS was based on North American or European data (but see Veenhoven 1991, 2018; Trommsdorff 2018). Recent papers based on worldwide surveys by the WVS and Gallup International have overturned much Western 'conventional wisdom' (Deaton 2008; United Nations 2012–18). Western-centric research appeared to show that most people record high to very high ratings on standard LS scales (Diener et al. 1999; Argyle 2001). It is now clear that most of the world's population do not view themselves as 'happy'; they record middle-range or low ratings.

Another piece of conventional wisdom was that even large income disparities make only a small difference to LS. To the contrary, worldwide evidence has now shown that GDP per capita has substantial effects on LS (Deaton 2008), although the strength of the relationship may taper off at high levels of income (Howell and Howell 2008; Jebb et al. 2018). Another key finding from international surveys is that, in some regions of the world, people have much higher average levels of LS, and in other regions much lower levels, than would be predicted by GDP per capita. In particular, Latin Americans rate much higher than predicted, and people in the ex-Communist countries of Eastern Europe rate much lower (Inglehart et al. 2008; Rojas 2018).

It is perhaps a reasonable inference that people could only become much happier or unhappier than predicted by their 'objective' economic circumstances as a result of developing an approach or recipe for living that disposed them towards happiness or unhappiness. So can we identify a special Latin American recipe which accounts for the high levels of LS reported in that region (Beytia 2015; Rojas 2018)? And what accounts for low levels in the former Communist countries?

Research on the Effects of Values/Life Priorities on LS

Research on the relationship between values and LS can only be regarded as exploratory, in part because there is no generally accepted classification of values in either psychology or anthropology. Many alternative approaches have been suggested; here we confine ourselves to reviewing research that has investigated linkages between values and LS.

Most studies of these linkages rest on the assumption that, if people succeed in realising values (goals) to which they attach high priority, their LS will increase (Omodei and Wearing 1990; Diener and Fujita 1995; Oishi et al. 1999; Schwarz and Sortheix 2018). Conversely, if they fail to realise priority values, their LS will decrease. This study rests on the same assumption, and seeks to identify 'recipes' – chains of attitudes, behavioural choices and domain satisfactions – through which values may be realised.

An alternative approach, adopted by some values theorists, is that certain values/life priorities are 'healthy' and likely to be associated with high LS, while other values are

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'unhealthy' and associated with lower LS. Deci and Ryan's (1985) theory of self-determination proposes that values that are chosen autonomously by an individual (also referred to as intrinsic values) are linked to high well-being, whereas values based on conforming to the demands of others, or seeking the recognition of others (extrinsic values) are linked to low well-being. Similarly, Schwarz (2012) suggests that values based on underlying motives of 'benevolence' and 'universalism' will usually be associated with high well-being, whereas values that reflect motives of conformity or desire for recognition will be linked to low well-being. Empirical research based on these ideas has found that prosocial, altruistic values (taken to be intrinsic) are generally linked to high LS, whereas materialistic values (taken to be extrinsic) are associated with lower LS (Schwarz and Sortheix 2018).

A third approach, stressed by the chief investigators of the WVS, Ronald F. Inglehart and Christian Welzel, is that the economic and subjective well-being of individuals in most, if perhaps not all countries, depends substantially on the extent to which their values, behaviours, ethnicity, religious affiliation, sexual orientation… are socially (and governmentally) approved or disapproved of in their home country (Inglehart et al. 2008; Esmer and Pettersson 2008; see also Akerlof and Kranton 2000; Trommsdorff 2015, 2018). We have tried to build on the Inglehart-Welzel insight in formulating the hypotheses about personal values listed below. It particularly affects hypotheses about political and religious values in Communist countries. Under Communism, citizens (especially party members) are expected to be strongly committed to the political values of the party and the State, both of which are officially viewed as working on their behalf, rather than in the interests of their class enemies. In these circumstances, we hypothesise that the WVS data will indicate that citizens of Communist countries give higher priority to political values than citizens in other parts of the world. We also expect to find stronger positive links between political values and LS in the Communist world than elsewhere. By contrast, religion and religious values are officially disapproved of by Communist regimes. So we expect to find that religious values will get low importance ratings in the Communist countries and will be associated with below-average LS.

Some researchers have tended to focus attention on the effects of particular sets of values (e.g. altruistic values or materialistic values) on LS, rather than attempting more comprehensive coverage. We review some salient findings below.

Traditional Family Values

It is well known that married/partnered people are on average happier than unmarried/unpartnered people, and that a cohesive family and satisfaction with family life are closely related to high LS (Diener et al. 1999; Argyle 2001). It is a fairly obvious next step to show that strong commitment to family values is linked to above average LS (Inglehart et al. 2008; Schwarz 2012; Headey and Wagner 2018, 2019).

Friendship and Leisure Values

A well established finding in LS research is that people with good social networks and high levels of social interaction/participation in activities with friends and acquaintances are happier than average (Bradburn 1969; Diener et al. 1999; Argyle 2001;

Headey et al. 2010a). In this paper we extend this line of inquiry by investigating links between endorsing friendship and leisure values, related attitudes and choices, and LS.

Materialistic Values

Diener and Seligman (2002) and Nickerson et al. (2003) reported that individuals who prioritise materialistic values - financial and career success - are less happy than their less materialistic countrymen/women. We replicated their results, analysing Australian, British and German panel data (Headey 2008; Headey et al. 2010b; Headey and Wagner 2018, 2019). We also found that materialists are less rather more satisfied than average with their income and financial situation. Ng and Diener (2014) reported that in low income countries people place high priority on material goals, whereas in high income countries material and non-material goals are about equally prioritised.

Political, Prosocial and Environmental Values[1]

Dunn et al. (2008), analysing experimental data, showed that prosocial, altruistic people who spent money that had been donated to them on other people, rather than themselves, gained greater satisfaction from their expenditure (see also Aknin et al. 2019). Studies of volunteering – a clear form of prosocial behaviour – have shown that volunteers have above average levels of LS (Harlow and Cantor 1996; Thoits and Hewitt 2001). Our previous papers, based on panel data, have confirmed that people who prioritise prosocial values record well above average LS (Headey 2008; Headey et al. 2010a; Headey and Wagner 2018, 2019).

Religious Values

There has been extensive investigation of the hypothesis that religious people are more satisfied with life than non-religious people (Koenig and McCullogh 1998; Friedman and Martin 2011; Headey et al. 2010b). The evidence is not unambivalent, but on balance most studies show that the devoutly religious, especially if they attend church (mosque, synagogue etc) regularly, are more satisfied than average, and also live longer (Koenig and McCullogh 1998; Friedman and Martin 2011; Headey et al. 2014). The relationship between LS and longevity is almost certainly partly due to commitment to traditional family values, and also to a relatively healthy lifestyle with below average rates of smoking and alcohol consumption (Friedman and Martin 2011).

No Clear Values/Life Priorities

Emmons (1986, 1988, 1992) found that individuals who give relatively low ratings to all values have low LS. He inferred that just having values promotes LS by giving people a sense of purpose. Diener and Fujita (1995) investigated links between values/ life goals and resources, finding that people have higher LS if they prioritise values/ goals for which they have appropriate resources.

[1] By ‘prosocial’ values we mean values reflecting an intention to benefit other people and/or society as a whole.

Links between Values and LS in Non-Western Countries

As mentioned, we are particularly interested in identifying recipes that may be followed in non-Western countries; recipes that may be substantially different from those found in the West. Several possibilities have been suggested. Beytia (2015) and Rojas (2018) have analysed Gallup International data with a view to explaining high levels of LS in Latin America. They report that exceptionally warm, expressive family and interpersonal relationships, and a shared commitment to Catholic Christianity, provide much of the explanation.

Hitokoto and Uchida (2014) have explored the possibility that Japanese people have a different concept of happiness from people in the West. In the West happiness is conceived of as an individual attribute and goal. Hitokoto and Uchida believe that Japanese people prioritise a concept of 'interdependent happiness', meaning that an individual's happiness depends partly on the happiness of family and friends; this requires sensitivity to others` preferences, and presupposes placing a high value on interdependence and interpersonal harmony (see also Krys et al. 2019). In this paper we attempt to assess whether Japanese people, and people from countries with a Confucian heritage, seek to live in accordance with their parents' and friends' expectations, and whether this influences their LS.

Concepts and Measures of Values in the WVS

Reflecting the uncertainty of researchers about how best to classify values, the WVS has modified its approach over the decades. All waves of the survey have included items asking respondents about the importance they attach to six domains of life: family, work, friends, leisure, politics and religion. More recent waves also include an a priori classification of ten values developed by Schwarz (2012).[2] Schwartz aims to describe and measure what he regards as universal human values. He posits that values forma circular pattern; that is, they shade into each other. Two dimensions underlie the circle: 'self-enhancement versus self-transcendence' and 'conservation versus openness to change'. The values of tradition, conformity and security cluster at the conservation end of the dimension conservation – openness to change. At the openness-to-change end are values relating to stimulation and self-direction. Values relating to achievement (being 'very successful'),power('being rich') and hedonism ('having a good time') are at the self-enhancement end of the self-enhancement versus self-transcendence dimension; at the other end are values relating to benevolence (including family values; 'help the people living nearby; care for their needs') and universalism ('doing something for the good of society' and 'looking after the environment; care for nature'). Schwarz (2012) reports that in all societies family values are given highest priority by the largest segment of the population.

It may be noted that Schwarz does not include religious values in his classification. He claims that 'spirituality' is not a universal value, but is often closely linked to family values, tradition and conformity (Schwarz 2012). In view of the prevalence of religious beliefs and behaviours in all world regions, we prefer to include religious values as a distinct category.

[2] A third approach in the WVS involves asking about the qualities that are desirable in children. This is intended, in part, as a method of indirectly eliciting the values of adult respondents.

The classification of values in this paper is pragmatically based on the WVS data available; we certainly do not claim any new or well validated taxonomy. We have constructed six indices: a traditional family values index, a friendship and leisure values index, a materialistic values index, a political values measure, a prosocial and environmental values index and a religious values index. These indices make use of both the 'importance' ratings given to life domains (see the list above) with correlated items from Schwarz's list of values. Measurement details are provided in the Methods section.

Conceptual Framework: Values as the Basis for 'Recipes' of LS

As previously mentioned, our exploratory approach involves investigating possible 'recipes' of LS; recipes linking values, attitudes, behavioural choices, domain satisfactions and LS. We estimate statistical models based on the concepts and potential causal links set out in Fig. 1:

The outcome variable is *Life Satisfaction (LS)*. At the first step of the model are *values/life priorities* which are conceived of as linking and driving specific *attitudes* (e.g. 'making my parents proud', 'living up to what my friends expect') and *behavioural choices* (e.g. time spent with family/relatives, time spent on voluntary work), which are included at the second and third steps of the model. Values, attitudes and behavioural choices then influence *domain satisfactions* (e.g. satisfaction with one's financial situation, confidence in the political system). Finally, all antecedent variables jointly influence *Life Satisfaction*.

Socio-economic variables are also included in all our statistical models, mainly as 'controls' (details in the Methods section). They are viewed as causally antecedent to values. In principle, personality traits should also be included, since it is known that LS is affected by the traits of neuroticism, extroversion, agreeableness and conscientiousness (Lucas 2008). However, this is infeasible with the WVS, which has only measured traits in a few countries. We included trait measures in previous papers not based on WVS data, and found that they had only small effects on links between values and LS (Headey and Wagner 2018, 2019). They might, nevertheless, be a source of unobserved heterogeneity and estimation bias in the current paper.

Two assumptions underlying the analysis

1. *It is assumed that people want to be happy; that happiness is an important goal for most people.*

In survey research on life goals/priorities it has nearly always been found that one of the goals that respondents rate as most important is 'happiness'; this being the term used,

Fig. 1 Concepts and assumptions about possible causal links. To avoid clutter, Fig. 1 only shows arrows linking variables adjacent to each other in the model. Some additional direct links (e.g. from values to domain satisfactions) are also estimated

rather than ‘life satisfaction’ (Cantril 1965; Rokeach 1973). In some recent studies respondents have been presented with decision-making scenarios in which they have to choose between prioritising their own happiness/LS, or prioritising other goals including other people’s happiness. It transpires that most people in most scenarios prioritise their own happiness (Benjamin et al. 2010; Adler et al. 2015).

2. *It is not assumed that people hold values, and may act in accordance with those values, solely or mainly with a view to promoting their own happiness/LS.*

Given the centrality of the goal for happiness/LS, it is reasonable to investigate empirical relationships between values and LS. As recent experimental evidence has confirmed (Wang and Milyavskaya 2019), people gain satisfaction from acting in accordance with their own values (see also Rokeach 1973; Schwarz 2012). Behaviour consistent with one’s values reinforces a sense of self-efficacy and of ‘self-values-behaviour fit’ (Trommsdorff 2015, 2018). However, it is *not* assumed in this paper that the main, let alone the sole reason that people endorse and may act according to personal values is to promote their own LS. As already mentioned, values are often held because an individual believes they are morally right. Further, by definition, prosocial values may require an individual to take decisions that put the interests of other people first, and may be detrimental to the LS of the individual concerned.

Data and Methods

The World Values Study 1999–2014

The WVS began in the early 1980s and now comprises six waves of data; the latest being for 2010–14. A seventh wave is currently in the field. Data have been collected in 99 countries in all parts of the world, although not all countries are included in each wave. There are over 350,000 respondents on file. The surveys are repeat cross-sections; there is no panel component.

The data quality of the WVS has been subject to some criticism (Deaton 2008; Slomczynski et al. 2017). In its early days the chief investigators sensibly concentrated on getting data from as many countries as possible, but this carried downside risks. In middle and low income countries, samples tended to over-represent urban, middle class populations, and in some cases seriously under-represented the rural and urban poor (Deaton 2008).[3]

Detailed checks by Polish researchers have shown that in the first three waves of the survey, the WVS, like several other international datasets that were also scrutinised, contains an unacceptably large number of duplicate and possibly faked records (Slomczynski et al. 2017). It was clear that most problems occurred in low income countries where the infrastructure for conducting surveys was inadequate, or in some cases, non-existent before the WVS was launched. The researchers who made these checks published detailed results, which indicate that the three most recent waves of the

[3] Deaton (2008) notes that this was in part deliberate in order to facilitate comparisons with urban Westerners.

WVS, and international survey projects generally from about 1995 onwards, contain few duplicate records. On this basis we are reasonably confident of the validity of the Waves 4–6 data (1999–2014) for the 41 countries analysed here.

Plainly, it is infeasible to report results for each country separately. So taking our cue partly from studies published by the founders of the WVS (Inglehart et al. 2008; Esmer and Pettersson 2008), countries were divided into the following relatively homogeneous groupings: -.

Western countries ($N = 32{,}482$)[4]: Australia, Britain, Canada, Finland, France, Germany, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland and USA. These are all countries with high per capita incomes, democratic political institutions and a Christian background.

Latin America ($N = 26{,}354$): Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru and Uruguay. These are middle-income countries, with more or less democratic political institutions and Christian background. All except Uruguay are predominantly Catholic.

Confucian countries ($N = 16{,}503$): Hong Kong (part of China but separately sampled in the WVS), Japan, South Korea, Singapore and Taiwan. These Asian countries have advanced economies, democratic institutions and a Confucian and Buddhist cultural background.

Ex-Communist countries: Russia and Eastern Europe ($N = 24{,}980$): Armenia, Belarus, Bulgaria, Estonia, Georgia, Hungary, Moldova, Poland, Romania, Russia, Slovenia and Ukraine. These are middle income countries, ex-Communist, and with Christian backgrounds. (Ex-Communist Moslem countries to the south of the former Soviet Union are not included).

Communist countries ($N = 7654$) China and Vietnam. These are the two remaining Communist countries in the WVS sample. They share elements of Confucian and Buddhist culture with the other Asian-Confucian countries listed above.

The main parts of the world not included in the paper are the Moslem countries of the Middle East and Asia, and also sub-Saharan Africa. We omitted them partly due to our own ignorance of conditions in those regions, and partly due to concerns about data quality.

Measures

Life Satisfaction (0–100)

The final outcome variable in all analyses is LS, measured in the WVS on a 1–10 scale with the end-points labelled ‘dissatisfied’ and ‘satisfied’. For ease of interpretation we transformed this scale to run from 0 to 100, so that maximum likelihood and regression coefficients can be treated as ‘quasi-percentiles’. Single item measures of LS are less satisfactory than the best available multi-item measures, but they are internationally widely used in household panel surveys and are generally regarded as acceptably reliable and valid (Diener et al. 1999).

[4] Sample sizes in this section refer to numbers of respondents who provided valid LS ratings.

Explanatory Variables[5]

Personal Values

Our key explanatory variables are measures of personal values/life priorities. As previously mentioned, the WVS in all six completed waves has asked respondents about the 'importance' of six domains of life: family, friends, leisure, work, politics and religion. The 4-point response scale runs from 'very important' to 'not at all important'. Also included is the question: 'How important is God in your life?' (1–10 scale).

Schwarz's (2012) distinctive approach to the measurement of values was outlined in the previous section. The standard version of his questionnaire comprises 57 items. However, the WVS just includes single items measuring each of his ten values, plus an additional one; 'looking after the environment; take care of nature'. The question format requires the interviewer to describe an imaginary person and then ask respondents to say how like themselves that person is.[6] The response scale runs from 1 to 6, 'very much like me' to 'not at all like me'.[7] A typical item is, 'It is important to this person to be rich'.

As previously noted, Schwarz conceives of his values as forming a circle. This implies that each value in the circle should be more highly correlated with the two on either side of it than with any other value. When we tested this, we found that the WVS data do not consistently support a circular conceptualisation, although for the most part the values that Schwarz claims to be relatively close to each other proved to be so.

From the standpoint of this paper, it is necessary to assess the empirical relationships between the two sets of values just described (the life domain importance ratings and Schwarz values), and also between both sets and the other components of LS recipes: attitudes, behavioural choices, domain satisfactions and LS. Somewhat to our surprise we found that, in general, the simple life domain importance ratings correlated as strongly with other components of the recipes as the Schwarz values; they also have fewer missing values in the WVS dataset. Both sets of measures are used in the indices described below.

- *Traditional family values index* The measures in the family values index are the Schwarz item, 'It is important to this person to help the people living nearby; to care for their needs' which Schwarz specifically intends as a measure of traditional, conservative family values (Schwarz 2012), and the life domain measure of the importance of the family.[8] The rank order correlation (Spearman's rho) between the

[5] To facilitate interpretation of results, all explanatory variables (except 'number of children') have been rescaled to run from 0 to 10. This means that the relative 'importance' of variables as explanations of a particular outcome can be readily compared.

[6] This format is based on a version of Schwarz's instrument referred to as the Portrait Values Questionnaire.

[7] Again, we reversed the scale so that a high score means 'very much like me'.

[8] From a narrowly statistical standpoint, it might have been reasonable to include the Schwarz items measuring tradition ('follow the traditions handed down by one's religion or family') and conformity ('always behave properly') in this index. They both correlate over 0.30 with 'help the people nearby'. However, their inclusion would have had the effect of downgrading the mean rating of 'family values' in four of the five world regions to a lower level than at least one other set of values. In our view this would have been a distortion, since almost all studies of values ever conducted indicate that family values receive top rating. In this dataset 'importance of family' is rated higher than any other domain, and 'help the people nearby' is rated higher than any other Schwarz item.

two measures is 0.16.[9] In this index (and the others described below) component items are weighted equally.

- *Friendship and leisure values index* The life domain items about the importance of friends and the importance of leisure are included in this index; the Spearman correlation between them is 0.31.
- *Materialistic values index* This index is comprised of two Schwarz items: 'It is important to this person to be rich' and 'It is important to this person to be very successful; to have people recognise one's achievements' (Spearman's rho = 0.39).
- *(i) Political values and (ii) prosocial and environmental values* Our initial intention was to construct a prosocial values index by combining the domain rating of the 'importance of politics' with the Schwarz items about the importance of 'doing something for the good of society' and 'looking after the environment'. However, the correlation between the domain rating and each of the Schwarz items is only 0.03. It became clear that a distinction needs to be drawn between commitment to 'hard' politics and commitment to 'soft' prosocial and environmental values. The upshot is that political values are measured by the single item 'importance of politics', while the well correlated Schwarz items (Spearman's rho = 0.40) form a prosocial and environmental values index
- *Religious values index* The *religious values index* is comprised of two items: ratings of the importance of religion and the importance of 'God in your life' (Spearman's rho = 0.75).

Attitudes and Perceptions Linked to Values

The specific attitudes that we expect to be linked to traditional family values are 'one of my main goals in life has been to make my parents proud' (4-point scale) and children owe 'respect and love for their parents' (options: 'always respect' or 'respect if earned').

An attitude expected to be linked to friendship and leisure values is 'I make an effort to live up to what my friends expect' (4-point agree-disagree scale).

We expect materialistic values to be reflected in a focus on paid work. So we expect materialists will tend to agree with the attitude that 'hard work brings success'. We also expect to find that materialistic people are in relatively demanding jobs; jobs which might help them realise their goals. A 'demanding job' index was constructed from three 1–10 scale items relating to whether respondents perceived their main job as 'manual' versus 'non-manual', 'routine' versus 'not routine', and requiring 'no independence' versus 'complete independence'.

It was hypothesised that people who hold political and/or prosocial and environmental values would be opposed to 'civic cheating'. The *opposed to civic cheating index* is comprised of three highly correlated items based on questions about whether it is justifiable (1 = 'always justifiable' 10 = 'never justifiable') to 'claim government benefits to which you are not entitled', 'cheat on taxes' and 'someone accepting a

[9] This is only a moderate correlation. However, it is also the case that the two items correlate to about the same degree with all other variables – measures of attitudes, behavioural choices and the domain satisfaction – in the family values recipe.

bribe'. It was also expected that a sub-set of these respondents would endorse the item, 'I would give part of my income for the environment' (4-point agree-disagree scale).

A 4-item cluster of attitudes expected to be related to religious values concern the ability of churches (mosques, synagogues etc) to give answers to 'moral problems', 'problems of family life', 'people's spiritual needs' and 'social problems'. These items are just answered 'yes' or 'no'.

Behavioural Choices Linked to Values

The behavioural choices expected to be linked to family values are having more children and spending more time than most other people with parents and other relatives (Headey and Wagner 2019). The natural logarithm of number of children in the family is the measure included in our statistical models; the logarithm is preferred because the unadjusted measure has a long upper tail. Time spent with relatives is asked on a 1–4 scale with the end-points labelled 'weekly' and 'not at all'.

Subscribing to friendship and leisure values is expected to be linked to the amount of time one chooses to spend with friends. This is asked on the same 1–4 scale as time with relatives. We hypothesised that, for a sub-set of people with friendship and leisure values, there would be a link to being 'active in sport' ('active', 'inactive' or 'not involved').

In previous research we found that people who subscribe to materialistic values work longer hours than average (Headey and Wagner 2019). Unfortunately, there is no measure of work hours in the WVS. A behavioural measure that might be linked to materialism is saving money, although for low income people around the world this may be nearly impossible. The WVS includes a single item asking respondents whether during the past year they have 'saved money', 'just got by', 'spent and not borrowed', or 'spent and borrowed'.

Behavioural choices expected to be linked to political, and also to prosocial and environmental values are being an active member of a political party, an active member of an environmental group, and being active in voluntary work. Questions about these activities just ask respondents whether they are 'active', 'inactive' or 'not involved'.

Religious values are expected to be linked to frequency of church (mosque, synagogue etc) attendance and also to being active in voluntary work.

Domain Satisfactions and Proxy Measures

Our research is based on an assumption that individuals who appear to be following a particular recipe for LS may expect, or at least hope to achieve an above average level of satisfaction in the domain (or domains) of life to which their recipe most closely relates. Not all domain satisfactions that we would ideally want to include are in the WVS. So, in addition to the satisfaction measures that are available, we use measures of 'confidence' and 'trust' which may be regarded as reasonably close proxies for domain satisfactions.

The obvious domain satisfaction for individuals who prioritise family values is satisfaction with family life. A measure of satisfaction with 'home life' was asked in earlier waves of the WVS but is not available in waves 4–6. So we use a proxy measure of 'trust in family'; respondents answer on a 5-point scale running from 'trust completely' to 'not trust at all'.

There is no obviously suitable item for measuring the domain satisfaction of individuals who prioritise friendship and leisure values. Ideal items would relate to satisfaction with one's friends and social life, and also satisfaction with leisure. A dichotomous item included in many international surveys, 'Most people can be trusted' (versus 'you can't be too careful') has been included in our models. As anticipated, it is only modestly related to friendship and leisure values.

A domain satisfaction that is expected to be linked to materialistic values is satisfaction with one's financial situation. This is measured by a single item on a 1–10 scale ('dissatisfied to 'satisfied').[10]

Political, prosocial and environmental values are expected to be linked to confidence in governmental institutions and confidence in the environmental movement. We constructed an index of 'confidence in the political system' based on five items relating to 'confidence in government', 'confidence in the political parties', 'confidence in the civil service', confidence in the justice system' and 'confidence in the police'. These items are asked on a 4-point scale with the end-points labelled 'a great deal' and 'none at all'. A single 4-point item measures confidence in the environmental movement.

There is no obvious domain satisfaction in the WVS that is appropriate for people with strong religious values. So a 4-point item about 'confidence' in churches (synagogues, mosques etc) serves as a proxy for satisfaction with one's religious or spiritual life.

Data Analysis: Structural Equation Modelling

Structural equation modelling, rather than OLS regression, is an appropriate technique when the aim is to estimate a 'system' of equations, rather than a single equation. The structural equations in this article are estimated by maximum likelihood analysis.

The equation underlying a standard structural equation model, expressed in matrix form, is:

$$Y = BetaY + GammaX + alpha + zeta$$

In this notation, Beta is the matrix of coefficients for those endogenous variables (Y) which predict other endogenous variables. Gamma is the matrix of coefficients linking exogenous variables (X) to endogenous variables (Y). Alpha is a vector of the intercepts of the endogenous variables. The error terms, the zetas, are assumed to have a mean of zero and to be uncorrelated with X variables in the same equation.

In assessing the fit of structural equation models, it is necessary to assess the overall fit between estimates for several equations and the model input; a variance-covariance matrix. Several measures of fit are normally used. The root mean squared error of approximation (RMSEA) is based on comparing differences (residuals) between the actual input matrix with the matrix implied by model estimates. It is conventional to regard a RMSEA under 0.05 as satisfactory (Bentler 1990; Browne and Cudeck 1993).

[10] Job satisfaction is not available for most countries in waves 4–6 of the WVS.

Additional assessments of the fit of one's model are provided by the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI). The CFI is based on a likelihood ratio (LR) chi-square test and takes account of the contribution of each estimate in the model to overall goodness of fit. The TLI is useful because it rewards parsimony by adjusting for the degrees of freedom in a model. It penalises models that include explanatory variables that account for little variance, although they may be just statistically significant. CFI and TLI fits above 0.95 are usually regarded as acceptable (Bentler 1990; Browne and Cudeck 1993; Satorra and Bentler 1994; Kline 2016).

A final valuable measure of fit is the coefficient of determination (CD). In regression analysis the CD is the R-squared for the dependent variable. In structural equation models the CD is a measure of fit for all endogenous variables.

We used the STATA 14 module for structural equation modelling to generate results (Stata Corporation 2017). This software package includes an option, which we employ, to impute missing values using a maximum likelihood approach. Simulation studies suggest that this method of imputation reduces bias in estimates relative to relying on unimputed data (Allison 2001; Stata Corporation 2017).

RESULTS: Recipes for LS in the West, Latin America, the Asian-Confucian Region, the ex-Communist Region and under Communism

This section begins with evidence documenting large differences among world regions in the levels of LS actually reported by survey respondents, compared with levels predicted by GDP per capita. Next comes an overview of inter-regional similarities and differences in the net effects of the six sets of values on LS. These results provide the first indications that (1) differences in LS among regions are partly due to differences of values, and that (2) recipes which have a positive effect on LS in some regions, have a negative effect in others. The main part of the Results section is then devoted to describing inter-regional differences in the full recipes; linked sets of values- attitudes-behavioural choices-domain satisfactions…and LS.

In some World Regions LS Is Much higher than Predicted by Per Capita Income; in Others Much Lower

To show how widely LS in some world regions differs from levels predicted by GDP per capita, we first regressed individual LS (i.e. all cases in all regions: $N = 107{,}973$) on national estimates of GDP per capita at purchasing power parity (PPP).[11] We then regressed the residuals – the variance in LS *not* accounted for by GDP per capita – on dummy variables for the five world regions (see also United Nations 2012–18). The United States, which conveniently records a mean level of LS that is almost exactly in line with expectations based on GDP per capita, is used as the reference (baseline) in the equation reported in Table 1. That is, each of the regional regression coefficients in column 3 of the table is an estimate of the difference between that region's LS and American LS, adjusting for GDP. Recall that the LS scale runs from zero to 100, so results can be interpreted as quasi-percentiles.

[11] International Monetary Fund (2018).

In the Latin American region people record both the highest unadjusted mean LS (73.57) and, remarkably, LS levels which are, on average, 8.10 quasi-percentiles higher than expected on the basis of GDP. Ex-Communist Eastern Europe is the unhappiest region with a mean LS of 55.49, which is 11.20 percentiles lower than predicted.[12] In contrast to the ex-Communist region, the two remaining Communist countries in the dataset – China and Vietnam – do not have lower ratings than predicted by GDP. China is almost exactly in line with its predicted rating, while Vietnam rates 4.76 percentiles above. The Asian-Confucian-Buddhist region is also marked by low LS. Its LS mean is 63.24, which is 6.87 percentiles below the predicted level.

Detailed checks show that nearly all countries within each region record mean levels of LS that are broadly in line with their regional profile, again using the US as a baseline. All the countries in the Latin American region have higher means than the US, adjusting for GDP per capita. Of the countries in the ex-Communist region, all except Poland and Slovenia, have lower adjusted LS ratings than the US; the Polish and Slovenian ratings being about the same as the American. All of the Asian-Confucian countries have lower mean LS than the US, adjusting for income.

Somewhat contrary to expectation, the Western countries in the dataset have relatively diverse levels of LS. The extreme cases are New Zealand and France. In New Zealand mean LS is 6.68 percentiles higher than predicted, while in France it is 4.32 percentiles lower.

Overview: The Effects of Values on LS in Five World Regions

Table 2 gives an overview of mean ratings of the six values in each region; an indication of population priorities. Table 3 then reports regressions estimates of the effects of values – the key part of recipes – on LS. Given that all values are measured on a 0–10 scale, the metric regression coefficients (bs) in Table 3 can be interpreted as indicating the relative weight or impact of each value on LS, net of the effects of other values.

Results are mainly but not entirely in line with our hypotheses. As expected, family values receive the highest priority/importance rating in all regions. Family values also have the greatest effect on LS in three regions – the Asian-Confucian region, ex-Communist Eastern Europe and the Communist countries - but in the West friendship and leisure values have a greater effect ($b = 1.40$ versus $b = 0.73$ for family values), and in Latin America religious values have about the same effect ($b = 1.18$ compared with $b = 1.11$ for family values).[13]

We hypothesised that materialistic values would receive a lower mean importance rating in the relatively wealthy Western and Asian-Confucian regions than in the less well-off Latin American and East European regions, and also than in the Communist countries. The evidence confirms this hypothesis. However, the hypothesis that materialistic values would everywhere be negatively associated with LS was falsified. Perhaps understandably in hindsight, a negative relationship is only found in the two relatively wealthy regions. In Latin America and the Communist countries the

[12] The United Nations (2012–18) reports rising levels of LS in recent years in both Latin America and Eastern Europe. However, in the latest waves of both the Gallup World Survey and the World Values Survey, Latin America still recorded the highest mean LS out of the regions considered here, and Eastern Europe still recorded the lowest mean.

[13] This difference is not statistically significant at the 0.05 level.

Table 1 Differences in LS among World Regions: Column 2: unadjusted LS means. Column 3: residuals net of GDP per capita ($N = 107{,}793$)

World Regions (reference= US)	*Mean LS (0–100) not adjusted for ln GDP* per capita *(col 2)*[b]	*Residuals of LS (0–100) net of ln GDP* per capita *(col 3)*
Western countries (US omitted)[a]	71.88	0.78[ns]
Latin America	73.57	8.10***
Asian-Confucian region	63.24	−6.87***
Ex-Communist E. Europe	55.49	−11.20***
China	63.48	−0.28 [ns]
Vietnam	64.51	4.76***
R-squared (adjusted)		*8.92%***

a. US mean = 71.67.

b. Means are weighted so that all countries within a region are equally weighted, based on (notional) national samples of 1500. Weights are supplied by WVS data managers.

*** significant at 0.001 ** significant at 0.01 * significant at 0.05 ns not significant

relationship between materialistic values and LS is not statistically significant, while in the ex-Communist region – the region with the lowest overall LS – it is actually positive ($b = 0.32$ $p < 0.001$).

Family values, friendship and leisure values, and prosocial and environmental values are positively linked to LS in all regions. Political values ('importance of politics'), on the other hand, are only strongly positively related to LS in the Communist countries ($b = 0.67$ $p < 0.001$). In the West there is a positive but weak relationship ($b = 0.12$ $p < 0.01$), in Latin America and the Asian-Confucian region the relationship is not statistically significant, and in ex-Communist Eastern Europe it is actually negative ($b = -0.20$ $p < 0.001$). This last finding is a first indication of disillusion with politics and prosocial activities in Eastern Europe.

Table 2 Differences In Values/Life Priorities Among Regions: Mean Ratings[a]

Values	*West mean (0–10)*	*Latin America mean (0–10)*	*Asia mean (0–10)*	*Ex-Communist mean (0–10)*	*China, Vietnam mean (0–10)*
Family values	8.72	9.04	8.38	9.04	8.40
Friendship, leisure values	8.14	7.28	7.68	7.29	6.55
Materialistic values	3.85	4.23	4.06	4.85	5.59
Political values	4.70	3.89	5.07	3.60	5.64
Prosocial, environmental values	6.77	7.37	6.02	7.03	7.13
Religious values	4.62	7.68	4.96	6.47	3.12
N	22,715	15,668	10,036	21,653	4852

a. Means are weighted so that all countries within a region are equally weighted, based on (notional) national samples of 1500. Weights are supplied by WVS data managers

*** significant at 0.001 ** significant at 0.01 * significant at 0.05 ns not significant

Table 3 Differences In Values/Life Priorities Among Regions: OLS regresssions[a]

Values	*West LS (0–100)*	*Latin America LS (0–100)*	*Asia LS (0–100)*	*Ex-Communist LS (0–100)*	*China, Vietnam LS (0–100)*
Family values	0.73***	1.11***	1.00***	1.79***	1.16***
Friendship, leisure values	1.40***	0.92***	0.95***	1.16***	0.44*
Materialistic values	−0.42***	−0.07[ns]	−0.62***	0.32***	0.18[ns]
Political values	0.12**	−0.02[ns]	−0.01[ns]	−0.20***	0.67***
Prosocial, environmental values	0.42***	0.97***	0.41***	0.92***	0.89***
Religious values	0.25***	1.18***	0.35***	−0.22***	−0.42***
R-squared	*11.30%***	*6.77%*	*9.75%*	*19.18%*	*11.95%***
N	*22,715*	*15,668*	*10,036*	*21,653*	*4852*

a. Controls: gender, age, age-squared, partner status, educational attainment and household income

*** significant at 0.001 ** significant at 0.01 * significant at 0.05 ns not significant

Religious values are positively related with LS in the West, Latin America and the Asian-Confucian region. As hypothesised, religious values are negatively related ($b = -0.42$ $p < 0.01$) to LS in the Communist countries, where the State is hostile. The negative link in the ex-Communist countries ($b = -0.22$ $p < 0.001$) is contrary to hypothesis. A reasonable post hoc explanation is that religious families were discriminated against under the previous regime with lasting effects on their LS.[14]

In the affluent, relatively leisured West, not only do friendship and leisure values receive a higher mean rating than in other regions, they also have a substantial positive effect on LS ($b = 1.40$ $p < 0.001$). Mean ratings of the 'importance' of both religious and materialistic values are comparatively low in the West, although the former are positively linked to LS.

In Latin America religion receives a higher mean rating (7.68 on the 0–10 scale) than in any other region. Variance in commitment to both family values and religious values have large effects on LS. These are first indications that Beytia (2015) and Rojas (2018) are probably right in attributing exceptionally high LS in Latin America to the quality of family and interpersonal relationships, and to shared commitment to Catholic Christianity.

In the Asian-Confucian region family values receive the highest mean rating. Religion (Buddhism, Taoism) gets a fairly low rating; considerably lower than in Latin America or Eastern Europe, although higher than the West. However, variance in religious commitment is moderately positively related to LS ($b = 0.35$ $p < 0.001$).

The ex-Communist and still Communist regions provide a striking contrast. In China and Vietnam, in line with society-wide norms, political values receive a much higher mean rating than in any other region, and are positively related to LS ($b = 0.67$ $p < 0.001$).[15] However, religious values, negatively viewed by the State, receive by far the lowest level of endorsement (mean = 3.12 on the 0–10 scale) of any region, and the more strongly people endorse these values the less happy they are ($b = -0.42$ $p < 0.01$).

[14] A plausible conjecture was that younger religious people in Eastern Europe would report higher LS, but this proved not to be the case.

[15] The mean ratings of values were similar in China and Vietnam, as were regression coefficients. So results for the two countries are combined in Tables 2 and 3.

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Materialistic values receive stronger endorsement in the ex-Communist and Communist countries than in other regions. We had no prior expectation that this would be the case, but it may well be a priority that a Communist State would approve of.

Evidence Specific to the Six Main Recipes

This section provides evidence relating to the full recipes: values, attitudes, behavioural choices, domain satisfactions and LS. To save space we do not present structural equation models for each recipe in each world region (i.e. 25 models). Instead we invoke the recipes primarily to address the puzzle outlined earlier. Why do some regions record levels of LS that are well above what would be predicted by their GDP per capita, while others are well below?

The Traditional Family Values Recipe: Putting the Family First, Having More Children, Spending Time with Relatives

Figure 2 give structural equation estimates for a traditional family values model/recipe in Latin America where LS is well above the level predicted by GDP. The final outcome variable is LS. On the far left, at the first step of the model, are family values. Then come attitude measures, behavioural choices and the proxy measure of domain satisfaction 'Trust in own family'.[16] In analysing the data, we hypothesised that family values would be positively linked to the attitude of wanting to 'make my parents proud', and also to the choices of having a relatively large number of children and spending more time than average with family relatives. Further, family values were expected to be linked to 'trust in family' and to relatively high levels of LS.

It should be mentioned that the Latin American family values model, and all subsequent models in this section, are a close fit to the underlying WVS data. In the family values model the RMSEA is 0.01, the CFI and the TLI are both 1.00, the coefficient of determination (variance accounted for in all endogenous variables combined) is 55.5%. The Chi-square likelihood ratio test is 4.97 ($df = 6$) $p = 0.55$.[17]

The statistical links shown in this model (and in regions not shown) are in line with our hypotheses. In all regions family values are quite strongly linked to the claim that, 'One of my main goals in life has been to make my parents proud'. Family values are also linked (in each region) to having more children and spending more time with relatives than most other people…to a relatively high degree of 'Trust in own family' and to above-average LS.

The direct effects of values on these outcomes are shown in Fig. 2. It is also useful to assess total effects. Total effects equal direct effects plus the sum of multiplied indirect effects (Stata Corporation 2017). Usefully, the Stata structural equation software prints total effects routinely.[18] In Latin America the total effect of family values on LS –

[16] Controls are in place for gender, age, age-squared, partner status, educational attainment and household income.

[17] This last result means that there was no statistically significant difference, even at the 0.05 level, between the actual data covariance matrix and the matrix implied by the model in Figure 2.

[18] Total effects reported in relation to the 'recipes' are just slightly different from the R-squared estimates in Tables 3. The differences are due to the fact that only one set of values, and not all six, are included in the models of the 'recipes'.

clearly the outcome that matters most – is 1.25 ($p < 0.001$). This is a stronger effect than in any other world region.

Beijer (2015) and Rojas (2018) claim that one reason Latin Americans report such high LS is that they give priority to traditional family life, and enjoy especially warm, sharing relationships within the family. In Table 4 pairwise inter-regional comparisons are made between mean levels of each component of the family values recipe. Mean ratings are reported for Latin America and two other regions in which family values have high priority: the West and the Asian-Confucian region. Column (5) in Table 4 reports t-tests of differences-of-means between Latin America and the West. Column (6) shows t-tests for differences between Latin America and the Asian-Confucian region, and in column (7) the t-tests compare the West and the Asian-Confucian region.

The evidence is strongly supportive of Beytia's and Rojas's claim. In Latin America there is stronger endorsement than in the other regions of almost all components of the family values recipe: the importance of family, the importance of 'Helping the people nearby; take care of their needs', the aim of living to 'Make my parents proud', and the belief that 'Parents are owed respect and love'.[19] Latin Americans also have more children and report spending more time with relatives (including parents) than people in the other regions. The only variable in the recipe on which Latin Americans do not rate highest is 'Trust in own family'; they rate somewhat lower than Westerners, and do not differ significantly from people in the Asian-Confucian region. Overall, then, it is reasonable to infer that a 'successful' family values recipe is one reason why reported LS in Latin America is higher than in the other two regions even on an unadjusted scale, and higher still after adjusting for per capita income.

On balance, the evidence about family values in the Asian-Confucian region is somewhat unexpected and may contribute to an explanation of low LS in the region. We had expected to find strong endorsement of all components of the family values recipe (Hofstede 1991; Hitokoto and Uchida (2014). However, it appears that endorsement is much less strong than in Latin America, and about the same as the West. The two statements of filial piety that Asians agree with more than Westerners relate to 'Make my parents proud' and 'Parents are owed respect and love'. But both are only weakly related to LS.[20]

Finally, it may be mentioned that in all regions women subscribe somewhat more strongly to family values than men. Also, people at the upper end of the household income distribution are more family-oriented than lower income people.

Friendship and Leisure Values: The Importance of Friends and Leisure

Figure 3 sets out a recipe based on friendship and leisure values for the West. The West is selected because it is the region in which friendship and leisure values have the highest mean rating.

In all regions there are significant linkages between friendship and leisure values, the attitude of 'Making an effort to live up to what my friends expect', and the behavioural choice of spending more time than average in the company of friends. In the West and the Asian-Confucian region the link between friendship and leisure values and being active in sport is also significant, but not so in Latin America. The ideal domain

[19] This variable is not included in the family recipe model only because it is missing for too many cases.

[20] The Spearman rank order correlation of both attitudes with LS in the Asian-Confucian region is only 0.06.

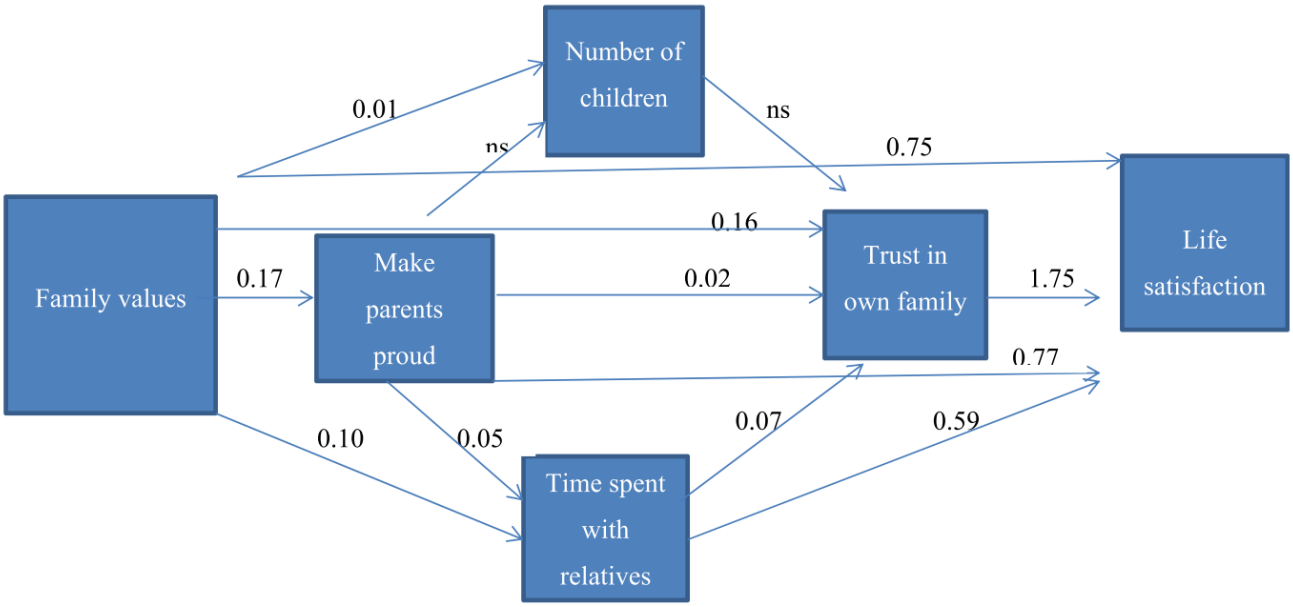

Fig. 2 Family Values Recipe: Latin America ($N = 26{,}543$). Controls: gender, age, age-squared, marital/partner status. Coefficients are significant at the 0.001 level unless otherwise shown. ns = not significant at 0.05. Model fit: RMSEA = 0.01 CFI = 1.00 TLI = 1.00 CD = 55.5%. Chi-square (df = 6) 4.97 ($p = 0.55$)

satisfactions for inclusion in this recipe would have been 'satisfaction with your friends and social life' and 'satisfaction with your leisure time'. The dichotomous proxy measure, 'Most people can be trusted', is a mediocre substitute. It has positive, statistically significant links with most components of the recipe, but is negatively related in the West and Latin America to 'Making an effort to live up to what friends expect'.

The beneficial effects of a recipe based on friendship and leisure values are stronger in the relatively leisured West than other regions. In the West, these values have a total positive effect on LS of 1.59 percentiles, time spent with friends has a total effect of 2.83 percentiles, and being active in sport 0.73 percentiles. So these three components of the recipe, in combination, add 5.15 percentiles to LS. This is a larger increment than is found in any other world region.

Hitokoto and Uchida (2014) regard 'conformity', which they term 'ordinariness' (in the sense of deliberately acting in an ordinary way, so as not to draw attention to yourself), as a key component of an Asian-Confucian inter-dependent concept of happiness. 'Making an effort to live up to what my friends expect' is an aim that conformists would be expected to endorse. A series of t-tests confirms Hitokoto and Uchida's expectation. In the Asian-Confucian region there is much stronger endorsement of living as one's friends expect than in the West, Latin America, or the formerly Communist countries of Eastern Europe. However, this aim is even more strongly endorsed in the two Communist countries, China and Vietnam, but they too are Asian countries with a Confucian and Buddhist heritage. It may also be the case that Communism encourages social conformity.

A limitation of living as one's friends expect is that, in the Asian-Confucian region, it is only weakly linked to LS; the bivariate correlation (Spearman's rho) being 0.03 and the total effect 0.81. This is another example of people in the region pursuing life priorities which do little to improve their overall LS.[21]

[21] Latin America is the only region in which there is a moderate positive relationship between 'living as one's friends expect' and LS; Spearman's rho = 0.09 ($p < 0.001$).

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Table 4 The Family Values Recipe: t-tests of differences between the West, Latin America (LA) and the Asian-Confucian (A-C) region

Components of the family values 'recipe' (0–10 scale)[a] (1)	Latin America: mean ratings (0–10 scale) (2)	The West: mean ratings (0–10 scale) (3)	Asian-Confucian region: mean ratings (0–10 scale) (4)	T-test: Comparing Latin America & the West (5)	T-test: Comparing Latin America & the A-C region (6)	T-test Comparing the West & the A-C region (7)
Importance of the family	9.64	9.59	9.60	LA high $p<0.001$	LA high $p<0.001$	ns
Importance: helping the people nearby	7.84	7.29	6.07	LA high $p<0.001$	LA high $p<0.001$	West high $p<0.001$
Make parents proud	7.58	6.04	6.60	LA high $p<0.001$	LA high $p<0.001$	A-C high $p<0.001$
Parents owed respect & love	8.91	8.11	8.67	LA high $p<0.001$	LA high $p<0.001$	A-C high $p<0.001$
Number of children	2.10	1.70	1.56	LA high $p<0.001$	LA high $p<0.001$	West high $p<0.001$
Time with relatives	5.66	5.29	5.19	LA high $p<0.001$	LA high $p<0.001$	West high $p<0.001$
Trust in own family	7.63	7.73	7.75	West high $p<0.001$	$p<0.001$ A-C high	ns

a. All variables except number of children are measured on a 0–10 scale.

ns not significant at the 0.05 level.

It should be mentioned that, in all regions except Latin America, friendship and leisure values are more commonly endorsed by people under 35 than by middle-aged or older people. It is unclear why Latin America is an exception to the general pattern.

Materialistic Values Recipe: Work Hard, Aim to Be Rich and Successful

The results in this section run mainly counter to our expectations. In previous papers, analysing German and Australian data, we found evidence of what we termed an 'unsuccessful' recipe linking materialistic values to working longer hours than average and, crucially, to recording low LS and low levels of satisfaction with one's family income (Headey and Wagner 2018, 2019). However, in this paper, we find negative links between materialistic values and LS only in the two relatively well-off regions – the West and the Asian-Confucian region – but positive or statistically non-significant relationships in the three less well-off regions: Latin America, ex-Communist Eastern Europe and the Communist countries.

Figures 4 and 5 set out materialistic values recipes for the West and for ex-Communist Eastern Europe. The West is selected as the wealthiest region where materialistic values are given quite low priority. Ex-Communist Eastern Europe is selected as a less well-off region where materialistic values are a higher priority than in most other regions and where links to financial satisfaction and LS are actually positive.

In both the West and the East European region (and in the regions for which
Figures are not shown) there are statistically significant positive relationships between materialistic values, the attitude that 'Hard work brings success', holding a demanding and presumably quite well paid job (non-routine, non-manual, requiring initiative),[22] and regularly saving money. These results are in line with our hypotheses. However, Fig. 4 shows that, while in the West the link between materialistic values and LS is negative, in the ex-Communist region (Fig. 5) it is strongly positive ($b = 0.38$). The total effect of materialistic values on LS in the West is.

−0.24, while in the ex-Communist region it is 0.86.

Suppose that Western materialists manage to achieve their main goal of financial success – are they then relatively satisfied with life (Nickerson et al. 2003)? In a previous paper, we reported that German people with materialistic values only record above average LS if their household income is in the top 5% of the distribution, and even then they remain relatively dissatisfied with their income (Headey and Wagner 2019). The results for the Western countries in our WVS file more or less replicate the German results. Among people at the top level of household income (incomes are grouped into 10 levels by the WVS data managers), materialistic values are not significantly related either to LS or satisfaction with one's financial situation.[23] For people at the other nine levels, the link between materialistic values and both outcomes is negative. Results are somewhat similar for the Asian-Confucian region. There we find a statistically significant positive relationship between materialistic values and LS for people at the top two levels of income, and a negative relationship at other levels.

[22] The WVS collects data on household income, but not specifically on labour earnings.

[23] In the equations underlying results in this paragraph the dependent variable is either LS or satisfaction with one's financial situation, and the explanatory variables are the six values, plus socio-economic variables that are included as 'controls'.

Materialism declines quite sharply with age (Schwarz 2012). In all regions combined, the Spearman rank order correlation between age and materialistic values is −0.22. Again, taking all regions together, people under 35 have a mean rating of 4.86 on the 0–10 materialism scale, in the 35–54 age range the mean is 4.26, and for people age 55+ it is 3.73. In the two well-off regions, better educated people are less materialistic than people with less formal education.[24] In the less well-off regions, educational level is positively related to materialism. In all regions materialistic values are positively linked to household income.

Political, Prosocial and Environmental Values: 'importance of politics', Prosocial and Environmental Concerns, Volunteering

This section on political, prosocial and environmental values needs to be read in conjunction with the next one on religious values. As expected, these values are all at least moderately linked to prosocial behaviours in all regions; that is, to volunteering and to political and environmental activism. Political linkages are stronger in some regions, while religious values are stronger in others. In the ex-Communist region neither set of links is strong, leading to a deficit in prosocial activity.

Let us focus particularly on the Communist countries and the ex-Communist region. Structural equation models,[25] supplemented by t-tests, show that there is much stronger commitment to the attitudes (opposition to civic cheating, willingness to pay for environmental protection), behavioural choices (party and environmental group membership) and domain satisfactions linked to political and prosocial values in the Communist countries than the ex-Communist region. Statistically significant differences between the two regions are found in regard to being active in voluntary work, being an active member of a political party, being active in an environmental group, willingness to pay part of one's income for environmental protection, confidence in the political system, and confidence in the environmental movement.[26] In both regions, as expected, political values are more strongly linked than prosocial values to party membership and confidence in the political system, while prosocial values are more linked to environmental group membership and confidence in the environmental movement.

The difference in confidence in the political system is particularly striking. The index measuring confidence in the system has five components – confidence in the Government, the political parties, the civil service, the justice system and the police – and on all of them the Communist countries rate higher than the ex-Communist region. The index score in the Communist countries is 7.42[27] versus 3.87 in the ex-Communist countries. Reported confidence in the system is, in fact, significantly higher in the Communist countries than in every other region. The ex-Communist countries have the

[24] In the equation underlying these results the dependent variable is the materialistic values index and the explanatory variables are gender, age, age-squared, educational level and household income.
[25] Figures showing the structural equation models are omitted; they would need to include too many variables for clear visual presentation.
[26] The only link that is stronger in the ex-Communist region is between endorsement of prosocial values and opposition to civic cheating.
[27] 6.96 in China, 8.41 in Vietnam.

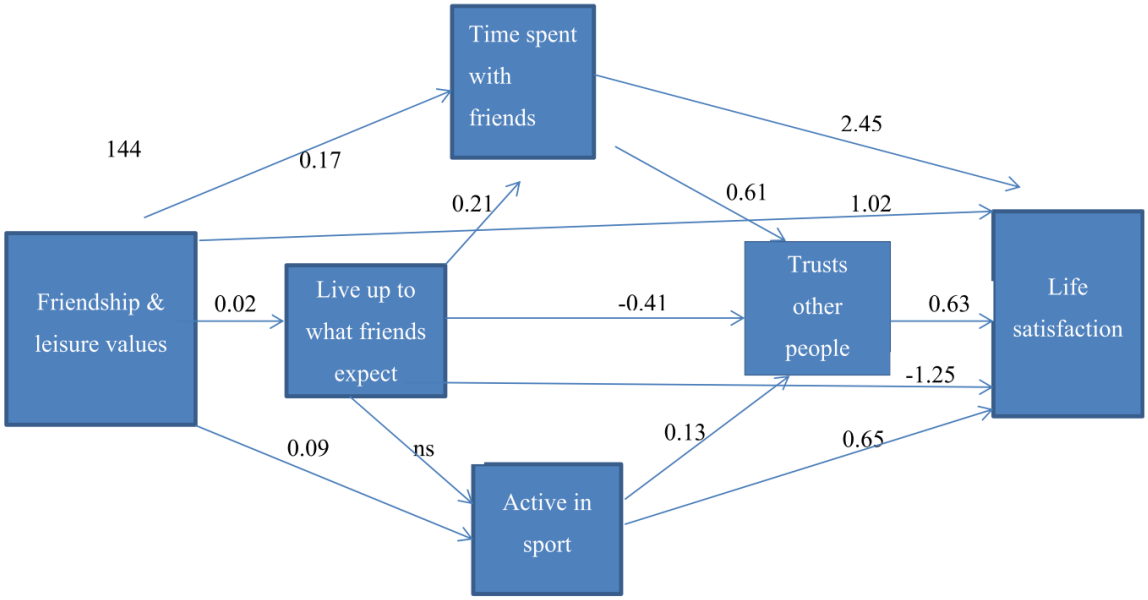

Fig. 3 Friendship and Leisure Values Recipe: The West ($N = 32{,}672$). Controls: gender, age, age-squared, marital/partner status, educational level and household income. Coefficients are significant at the 0.001 level unless otherwise shown. ns = not significant at 0.05. Model fit: RMSEA = 0.00 CFI = 1.00 TLI = 1.00 CD = 40.7%. Chi-square (df = 6) 5.58 ($p = 0.47$)

lowest rating except for Latin America (mean = 3.56), which has a marked history of political dictatorship and corruption.[28]

The total effect of political values combined with prosocial and environmental values on LS in the Communist countries is 2.02 quasi-percentiles, compared with 1.15 percentiles in the ex-Communist region. A political and/or prosocial values-based recipe clearly works well for some people; it appears to be one factor contributing to medium-to-high levels of LS in the Communist countries.

In all regions men (on average) assign greater importance to politics than women. In contrast, prosocial and environmental values are more strongly endorsed by women, except in the Communist countries. In the Communist countries it is clear that the party is more effective in mobilising men than women for all kinds of political, prosocial and environmental activities. In most regions younger people tend to be apolitical, but the Communist countries are again an exception; younger people there are just about as politically involved as their elders. In all regions, as expected, better educated people are more active in political and prosocial activities than less educated people (Verba 1987).

Religious values recipe: importance of religion, 'God in my life' and links to prosocial activities.

Figures 6 and 7 outline recipes based on religious values in, respectively, Latin America, the ex-Communist region and the Communist countries.

In Latin America, there are quite strong links between religious values, the belief that 'Churches give answers to moral problems, problems of family life, people's spiritual problems and social problems', and the behavioural choices of attending religious services and engaging in voluntary work. Religious values, beliefs and behaviours are then linked to 'confidence in churches' and to LS. The total effect of

[28] Latin America also records the highest mean rating on the civic cheating index (1.78 on the 0–10 scale). The ex-Communist region has the next highest rating at 1.42.

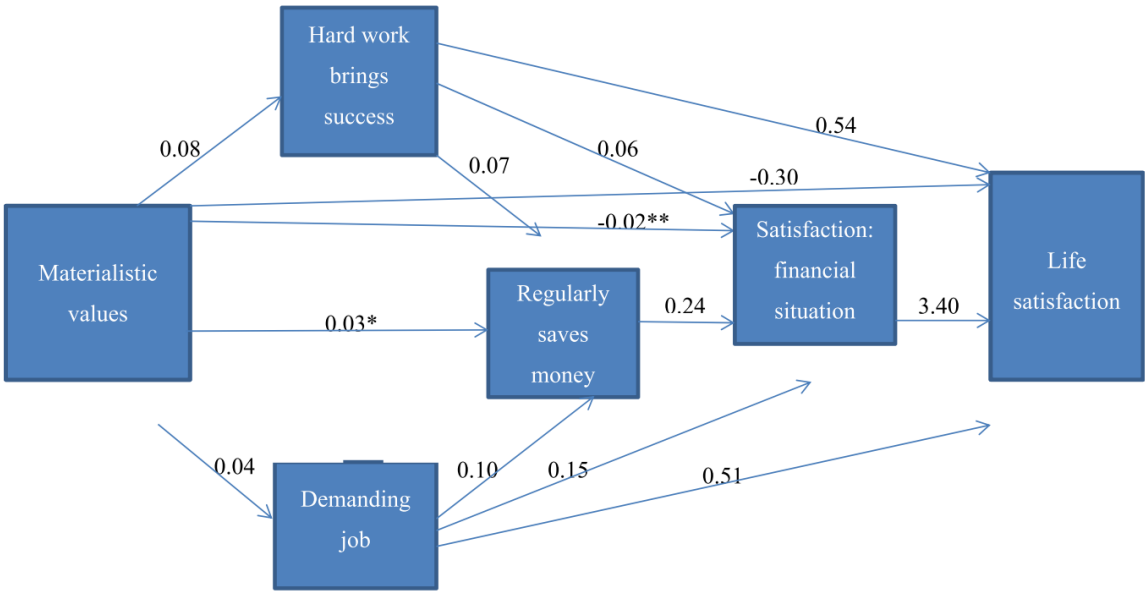

Fig. 4 Materialistic Values Recipe: The West ($N = 17{,}970$). Controls: gender, age, age-squared, marital/partner status and educational level. Coefficients are significant at the 0.001 level unless otherwise shown. **significant at the 0.01 level * significant at 0.05 ns not significant at 0.05. Model fit: RMSEA = 0.01 CFI = 1.00 TLI 0.99 CD = 27.3%. Chi-square (df = 1) 4.22 ($p = 0.04$)

religious values on LS is 1.60 quasi-percentiles. Additionally, volunteering has a positive total effect of 0.90 percentiles.

It seems clear that religious values, along with family values, make a substantial contribution to the high average LS reported in all Latin American countries. T-tests confirm that mean levels of commitment to religious values are higher in Latin America than in other regions, as is belief that 'Churches give answers…', and attendance at religious services.

When it comes to prosocial activities, it appears that the ex-Communist region has fallen between two stools. A part-explanation put forward in the previous section was

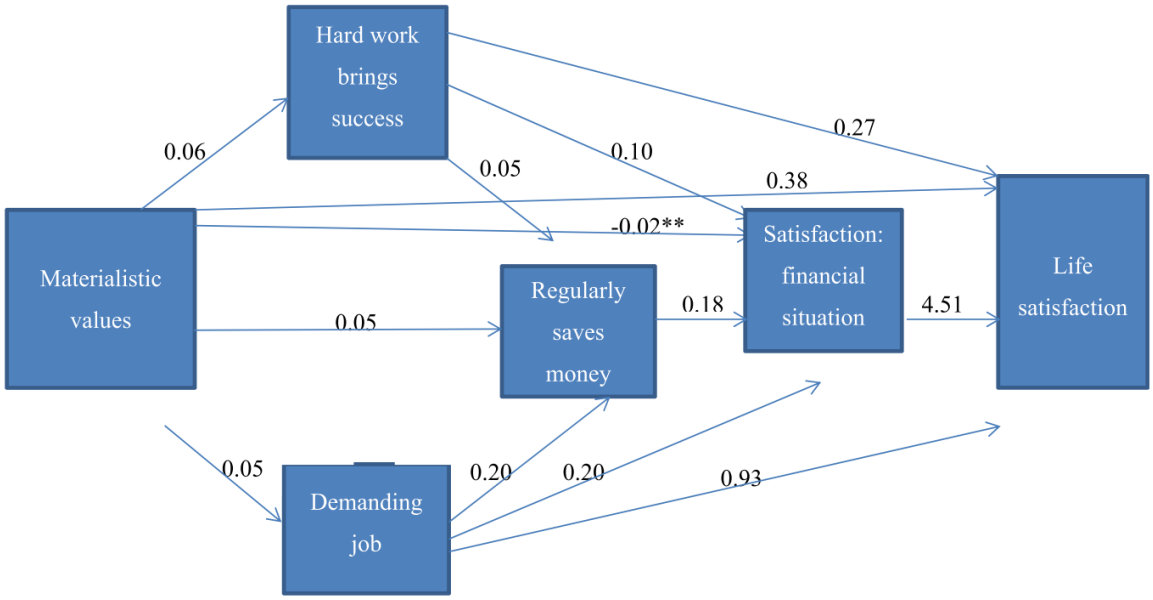

Fig. 5 Materialistic Values Recipe: Ex-Communist Eastern Europe ($N = 12{,}474$). Controls: gender, age, age-squared, marital/partner status and educational level. Coefficients are significant at the 0.001 level unless otherwise shown. ns not significant at 0.05. Model fit: RMSEA = 0.01 CFI = 1.00 TLI 1.00 CD = 18.6%. Chi-square (df = 7) 14.78 (p = 0.04)

that links between prosocial values and prosocial behaviours are unusually weak (Fig. 7). Figure 7 now indicates that the same can be said of the link between religious values and volunteering, which is actually slightly negative ($b = -0.01$ $p < 0.05$). What seems to have happened is that, following the collapse of communism, the churches have not yet been able to replace the degree of commitment to prosocial activities previously promoted by the Communist party and affiliated organisations (Meier and Stutzer 2004).

Finally, it bears repeating that people who engage in political and prosocial activities report above average LS. This is clearly the case, whether the activities are motivated primarily by secular or religious values. This finding has been reported many times in affluent Western countries, where large segments of the population – over half in the US - undertake some kind of voluntary work (Harlow and Cantor 1996; Thoits and Hewitt 2001). The WVS data show that, while volunteering is less prevalent in less affluent parts of the world, it is everywhere linked to above average LS.

Combinations of Values/Recipes: Implications for LS

It is fairly obvious that, while some people may be primarily motivated by one set of values (e.g. some monks, some terrorists), most of us are influenced by combinations of values to which we give high or moderately high priority (Cantril 1965; Schwarz 2012). Different values come into play in different domains of life. In dealing with business or financial matters, for example, we may be influenced primarily by materialistic values, but religious values (for example) might also affect financial decisions. In political matters, political values may usually have primacy, but family, materialistic or religious values could also come into play. To give an indication of combinations of values that may commonly affect behaviour, Table 5 reports Spearman rank order correlations for each region. The highest correlation in each region is printed in bold.

The highest correlation in four of the five regions – all except ex-Communist Eastern Europe – is between family values and prosocial values. The implications are positive for LS, since both sets of values are positively associated with well-being. In the West, the regression results in Table 3 imply that the combined effect of family and prosocial values on LS is 1.15 quasi-percentiles (i.e. the coefficient of 0.73 for family values plus the coefficient of 0.42 for prosocial values). In Latin America the estimated combined effect of these values is 2.08 percentiles ($1.11 + 0.97$), in the Asian-Confucian region it is 1.41 percentiles ($1.00 + 0.41$), and in the Communist countries 2.05 percentiles ($1.16 + 0.89$). Ex-Communist Eastern Europe is the only exception to this pattern. There prosocial values and religious values are the most highly correlated sets. But religious values have a negative effect on LS in this region, so the combined positive effect is just 0.47 percentiles (0.69–0.22). This combination of values further helps to account for low current levels of LS in Eastern Europe.

The Consequences of Rating Nothing as Important:'Nothing Valued?'

A few people rate all values as relatively unimportant. In fact, in each region 2–5% of the sample give an 'importance' rating to all six values that is below the regional mean. These people record levels of LS that are far below average (Emmons 1986; Emmons

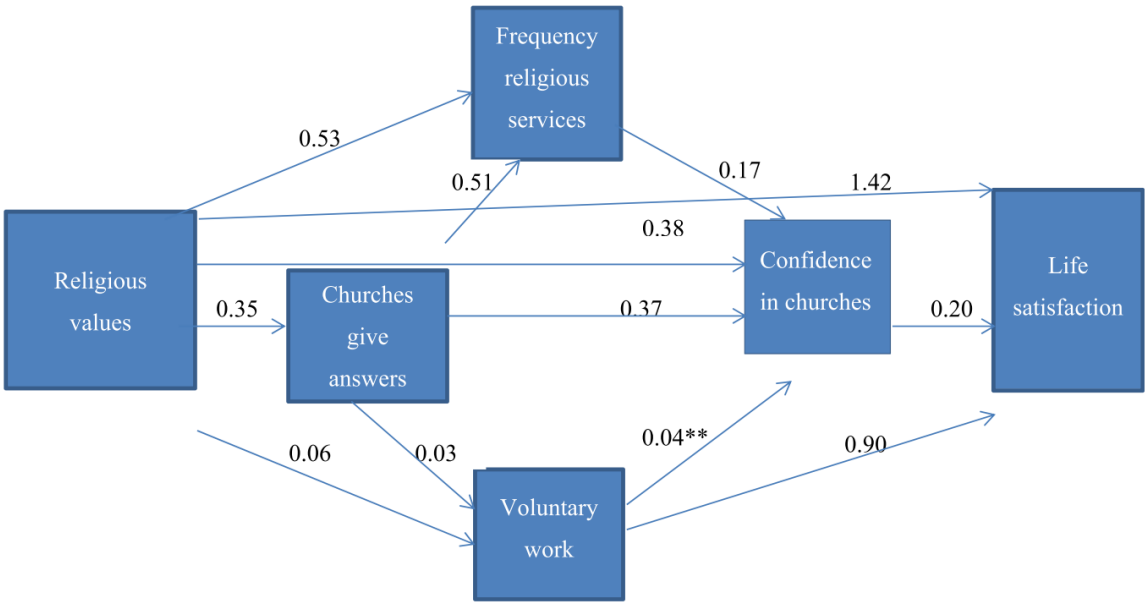

Fig. 6 Religious Values Recipe: Latin America ($N = 15{,}668$) Controls: gender, age, age-squared, marital/partner status, educational level, household income. Maximum likelihood coefficients are significant at the 0.001 level unless otherwise shown. **significant at the 0.01 level * = significant at 0.05 ns = not significant. Model fit: RMSEA = 0.00 CFI = 1.00 TLI = 1.00 CD = 40.4%. Chi-square (df = 8) 7.85 ($p = 0.45$)

and King 1988; Emmons 1992). In the West they have a mean rating of 64.32, compared with a regional mean of 71.88. In Latin America the difference is 63.50 versus 73.57, in the Asian-Confucian region it is 57.57 versus 63.24, in the ex-Communist countries it is 44.08 versus 55.49, and in the Communist countries it is 59.83 versus 63.89. In short, it seems that people who give low ratings to all values may have no clear priorities and perhaps no aims in life. It is a matter of fact that they record exceptionally low levels of LS.

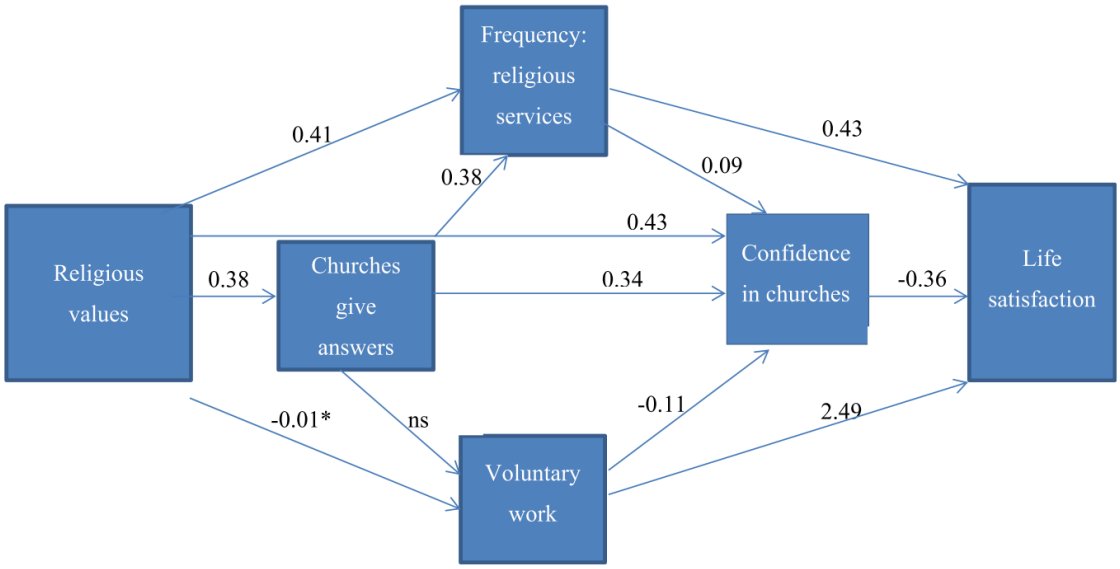

Fig. 7 Religious Values Recipe: Ex-Communist East European Countries ($N = 21{,}983$). Controls: gender, age, age-squared, marital/partner status, educational level, household income. Maximum likelihood coefficients are significant at the 0.001 level unless otherwise shown. **significant at the 0.01 level * = significant at 0.05 ns = not significant. Model fit: RMSEA = 0.00 CFI = 1.00 TLI = 1.00 CD = 62.3%. Chi-square (df = 8) 11.85 ($p = 0.16$)

In all regions, it appears to be the case that unpartnered people, those with low levels of education and income, and people in poor health, tend to rate all values as relatively 'unimportant'.[29]

Discussion

The main purpose of this paper is to suggest that there may be alternative values-based recipes affecting LS. The implicit claim in previous research that 'one size fits all' is probably incorrect. In our models, three of the six recipes – those based on family values, friendship and leisure values, or prosocial and environmental values – have positive effects on LS in all world regions covered in the paper. But the other three recipes – those based on materialistic values, political values or religious values – have significant positive effects in some regions, but non-significant or negative effects in other regions. These results run counter to a 'one size fits all' assumption.

Explaining 'Unexpected' Regional Differences in LS: The Effects of Subscribing to Values that Are in Accord with…or Contrary to Societal Norms

We submit that differences in values and recipes help to account for 'unexpected' differences among world regions between actual levels of LS and levels predicted by GDP per capita. On average, citizens of a country are likely to be happier if there is a close 'person-culture fit' between the values they subscribe to and current societal and/ or governmental norms (Inglehart et al. 2008; Trommsdorff 2018). In Latin America 'unexpectedly' high average LS may be substantially due to the fact that a large majority of people endorse family and religious values, which have been the dominant values there for centuries.

In the Communist countries it appears that people who subscribe to societally endorsed political values are relatively satisfied with life; these values being less strongly or negatively associated with LS in other regions. In the ex-Communist countries of Eastern Europe societal norms of all kinds appear to be in flux. Previously dominant political values are discredited, and new democratic political systems and norms of behaviour are struggling for acceptance. In this situation political values are negatively associated with LS. In other words, the more people care about politics, the less satisfied with life they are. Religious values, which are undergoing a revival in Eastern Europe, and are associated with above-average LS in most parts of the world, are not yet strongly associated with prosocial activities and, perhaps partly as a consequence, are not linked to LS.

In the Asian-Confucian region, it may be that adherence to societally endorsed family values is linked to anxiety about meeting social expectations as well as with LS (Hofstede 1991; Markus and Kitayama 2003; Trommsdorff 2015, 2018). However, there is no measure of anxiety in the WVS, so we are not able to test this conjecture.

[29] Personality traits may also be significant determinants, but are not measured in the WVS. In Germany we found that low levels of 'conscientiousness' are related to giving low ratings to values (Headey and Wagner 2019).

Table 5 Rank order correlations among values in the West, Latin America, the Asian-Confucian region, Ex-Communist Eastern Europe & Communist China and Vietnam[a]

The West (N= 22,715)	
Family values	1.00
Friendship/leisure values	0.12 1.00
Materialistic values	0.02 0.05 1.00
Political values	0.10 0.15 0.01 1.00
Prosocial values	**0.19** 0.10 0.01 0.13 1.00
Religious values	0.17–0.01 -0.06 0.12 0.13 1.00
Latin America (N= 15,668)	
Family values	1.00
Friendship/leisure values	0.15 1.00
Materialistic values	0.04 0.04 1.00
Political values	0.02 0.18 0.05 1.00
Prosocial values	**0.23** 0.08 0.12 0.06 1.00
Religious values	0.04 0.04–0.01 0.08 0.21 1.00
Asian-Confucian region (N= 10,036)	
Family values	1.00
Friendship/leisure values	0.11 1.00
Materialistic values	0.14 0.10 1.00
Political values	−0.04 0.19 0.03 1.00
Prosocial values	**0.41** 0.09 0.19 0.03 1.00
Religious values	0.20 0.07 0.12 0.08 0.23 1.00
Ex-Communist Eastern Europe (N= 21,983)	
Family values	1.00
Friendship/leisure values	0.10 1.00
Materialistic values	0.04 0.14 1.00
Political values	0.03 0.14 0.04 1.00
Prosocial values	0.16 0.08 0.13 0.07 1.00
Religious values	0.05 0.01–0.01 0.12 **0.21** 1.00
Communist China & Vietnam (N= 4852)	
Family values	1.00
Friendship/leisure values	0.12 1.00
Materialistic values	0.22 0.12 1.00
Political values	0.11 0.17 0.13 1.00
Prosocial values	**0.52** 0.02 0.25 0.21 1.00
Religious values	0.00–0.02 0.04 0.11 0.05 1.00

a. Spearman rank order correlations

In summary, we have shown that an international comparative approach gives reasonably clear indications that there are alternative values-based recipes affecting LS. It is our hope that recognition of the possibility that 'one size does *not* fit all' will open the way to continued research on alternative approaches to LS.

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Declarations

Conflict of Interest The authors declare that they have no conflict of interest and no pecuniary interest related to the data or the findings in this paper.

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