What Makes People Happy

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Chapter 2

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Abstract

The twin issues of what makes people "happy," and the relative strength of these happiness affecting factors, have in the recent past become a staple of economic analysis and goes under the rubric of "happiness research". The aim of such research is to understand what the determinants of happiness are and how these vary across population groups, distinguished by a variety of socio-economic and demographic factors (for example, education, marital status, economic position, social class, and geographic location). A key component of this research is a person's subjective assessment of their state of happiness and this assessment is sought to be correlated, using methods of multiple regression, with the multitude of factors hypothesised to affect it. The purpose of this chapter is to use data from the World Values Survey to provide a self-contained overview of this research, discussing the many variables that are conventionally included in the "happiness equation", the justification for their inclusion, and the strength of their effect.

2.1 Introduction

The twin issues of what makes people "happy" and the relative strength of these happiness-affecting factors, have in the recent past become a staple of economic analysis and go under the rubric of "happiness research". As Clark *et al.* (2008) have observed, "studying the causes and correlates of human happiness has become one of the hottest topics in economics over the last decade" (p. 95). The aim of such research is to understand what the determinants of happiness are and how these vary across population groups, distinguished by a variety of socio-economic and demographic factors (for example, education, marital status, economic position, social class, and geographic location). Key components of this research are a person's subjective assessment of their state of happiness, and the attempt to correlate this assessment, using methods of multiple regression, with the multitude of factors hypothesised to affect it.

In terms of economic analysis, happiness is usually measured by simply asking people how happy they are (or have been in the recent past). The annual General Social Surveys (GSS) in the United States have asked people, since 1972, about their levels of happiness; the Eurobarometer Survey Series has, since 1973, provided responses from residents of several European countries to a biannual question on happiness; and the World Values Survey (WVS), which is the dataset analysed in this chapter, asks respondents in many countries across the world about their level of happiness.[1] The "happiness question", as framed in the WVS, asks: "Taking all things together, would you say that you are (i) very happy; (ii) quite happy; (iii) not very happy; (iv) not at all happy?".[2]

The first issue is whether this single-question measure of happiness adequately captures the complex of feelings associated with happiness. On the plus side, the 2010–14 and 2017–22 samples of the WVS (Waves 6 and 7, respectively) show a strong and stable relation between the happiness and life satisfaction variables: the correlation coefficient between the two variables was 0.46 in 2010–14 and 0.45 in 2017–22.[3] Secondly, not only do people have little difficulty in answering the happiness

[1] The WVS is implemented in so-called waves, at intervals of 5–10 years.
[2] The GSS and the Eurobarometer ask near-identical questions.
[3] Smith (1979) has reported a similar finding for the GSS in the USA.

question,[4] but these subjective responses do seem to reflect the respondents' substantive feelings of well-being. Gilbert (2012) commented that while people may not be able to predict how happy they will be tomorrow, they can tell us, with a fair degree of accuracy, how happy they are today. For example, people who report high happiness scores tend to smile and laugh more and tend to be rated by others as happier than those reporting lower scores (Oswald, 1997).

Notwithstanding these observations, it is worth drawing attention to some of the limitations of self-reported measures. There are three aspects of the cognitive process, which translates an individual's circumstances into feelings about happiness, that need to be considered (Frey and Stutzer, 2002, p. 12): (i) *adaptation*, whereby people adjust to circumstances whether fortunate or unfortunate; (ii) *aspiration*, whereby people compare their current situation with what they hoped to achieve; (iii) *comparison*, whereby people compare their situation with that achieved by their peers. These aspects mean, for example, that the effects of events like unemployment or divorce on happiness would depend upon when they occurred and how widespread these events were (adaptation/comparison) and the effect of income would depend upon whether respondents were better off than their parents (aspiration/comparison).

In addition, Cummins and Nistico (2002) felt there was a positive bias to self-reported levels of happiness which emanated from a need to maintain one's self-esteem and optimism. The most innovative study of the accuracy of subjective assessments of well-being in measuring underlying feelings of happiness is by Ponocny *et al.* (2016), who cross-checked 500 Austrian respondents' subjective assessment of well-being with extensive verbal reports of their experiences. Their results showed that the hedonic experiences even of respondents with high self-assessed ratings were not as rosy as their ratings might lead one to believe.

[4] In the United States, the rate of non-response was less than 1 per cent in 14 GSS surveys between 1972 and 1987 (Easterlin, 2001).

2.2 An Investment Model of Happiness

In the context of economic analysis, happiness is regarded as the outcome of investments that people make – or that are made on their behalf – in their future (Gilbert, 2006). These investments could, for example, be in education, careers, family, friends, health outcomes, or religious belief, and one's present state of happiness depends on the returns provided by these investments. When adequate investments are combined with reasonable returns, people report themselves as "happy". When, however, these investments are inadequate (not enough education, poor career choice) or events conspire to deliver poor returns (divorce, illness, job redundancies), people report that they are "unhappy". The purpose of this chapter is to disentangle the effects of these investments and to measure their relative strength in contributing to people's happiness.

The idea of happiness as returns to investment can be made more explicit. Suppose that the variable H_t represents the happiness level of a person, and that K_t is their stock of "life capital" at time t where "life capital" embraces all those aspects of capital – economic, social, health, spiritual, cultural – which contribute to a happy life. Employing the framework of the Harrod-Domar growth model (Domar, 1957), it is assumed that at a given time t, a person's happiness is proportional to their amount of "life capital":

$$H_t = K_t / \theta \tag{2.1}$$

where: $1/\theta = H_t / K_t$ measures the amount of happiness produced with one unit of capital or, in other words, is the marginal product of capital. The marginal product of capital could differ between persons to reflect the fact that, owing to differences in temperament and personality, there are inter-personal differences in the "technology" used to convert capital into happiness.

The amount of capital between two successive time periods is related by the equation:

$$K_t = K_{t-1} - \delta K_{t-1} + I_t = (1-\delta)K_{t-1} + I_t \tag{2.2}$$

This says that the amount of capital at the beginning of period t is the amount of capital at the beginning of the previous period (*t-1*), less the depreciation of capital that occurred during that period, plus new investment made. So, for example, one's network of friends diminishes as some are lost and replenished as new friendships are made. If one assumes that people's "happiness investment"

depends positively on their *level* of happiness (meaning: $I_t = \alpha \times H_t$ where α is the investment rate), then equation (2.2) yields the happiness growth model:

$$\theta H_t = (1-\delta)\theta H_{t-1} + \alpha H_{t-1} \Rightarrow g = \left(\frac{H_t - H_{t-1}}{H_{t-1}} \right) = \frac{\alpha}{\theta} - \delta \tag{2.3}$$

where g is the growth rate in happiness

Equation (2.3) says that the growth rate in happiness is the product of the investment rate and the marginal product of capital less depreciation. Happiness will grow as long as the rate at which investment is converted into happiness (α/θ) exceeds the rate at which capital is depreciating (δ).

If the marginal productivity of capital, $1/\theta$ falls (or, equivalently, θ rises) as "lifetime capital", K_t, increases – meaning that unit increases in capital would, after a point, produce successively smaller increments in happiness – then eventually $\frac{\alpha}{\theta} = \delta$ and the growth rate in happiness, $g=0$. When lifetime capital reaches this level, K^*, then "happiness satiation" occurs, meaning that further investments will not result in more happiness.

2.3 The Data

This chapter uses data from the WVS to address these issues. The WVS covers more than 250,000 respondents, drawn from 90 countries, and provides a widely accessible database on global happiness. It has been assembled by a group of researchers around the globe and is organised as a network of social scientists coordinated by a central body, the *World Values Association*. Since 1981, the WVS data have been released in seven waves: Wave 1 (1981–84); Wave 2 (1990–94); Wave 3 (1995–98); Wave 4 (1999–2004); Wave 5 (2005–09); Wave 6 (2010–14); Wave 7 (2017–22). The results reported in this chapter are based on an analysis of these data (Haerpfer *et al*., 2022).

<Table 2.1>

In each of the seven waves, respondents were asked the same "happiness" question, detailed earlier. Table 2.1 shows that as a percentage of those giving valid answers to this question, 86.3 per cent said they were "happy" in 1981–84 (meaning, hereafter, that in response to the "happiness

question", they answered either "very happy" or "quite happy") and 13.7 per cent said that they were "unhappy" (meaning, hereafter, that they were either "not very happy" or "not at all happy"). Thirty-six years later, in 2017–22, these percentages of being happy and unhappy were, respectively, 85.5 and 14.5 per cent.

In between these periods, which bookend the available data, there were dips in the proportion of happy respondents. As Table 2.1 shows, in 1990–94, the proportion of "happy" respondents fell to 73.6 per cent (from 86.3 per cent in the previous wave, 1981–84) while the proportion of "unhappy" respondents rose to 26.4 per cent (from 13.7 per cent in the previous wave, 1981–84). In the subsequent wave (1995–98) there was a slight increase in the proportion of happy respondents to 76.5 per cent (accompanied by a slight decrease in the proportion of unhappy respondents to 23.5 per cent). Thereafter, there was steady increase in happiness – from 81.1 per cent of respondents in 1999–2004 to 81.9 per cent in 2005–09, followed by a spurt to 84.5 per cent in 2010–14 and a further rise to 85.5 per cent in 2017–22.

In addition to providing information on people's reported levels of happiness, the WVS also provides a wealth of information about the respondents: *inter alia* their demographics (gender, age, marital status, number of children); their circumstances (economic and social status; income; education; state of health); the importance they attached to religion, family, and friends; their autonomy in terms of the freedom of choice they enjoy; their lived environment in terms of the quality of their neighbourhoods; and their socio-political environment in terms of the countries in which they reside. The variables encapsulating these pieces of information are described below.

2.4 The Analytical Methodology

Suppose there are N persons in the data (indexed, $i=1, 2, \ldots N$) and K variables that explain whether they were happy (indexed, $k=1, 2, \ldots K$) such that x_{ik} is the value of explanatory variable k for person i. So, for example, if k refers to income and person i is William Brown, then x_{ik} refers to William Brown's income. As the previous section stated, a person's happiness is represented by the variable H_t. This variable is hypothesised to be a *latent* variable which cannot be observed. One may specify an equation in terms of the determinants of happiness, as in equation (2.4) below:

$$H_i = x_{i1}\beta_1 + x_{i2}\beta_2 + ... + x_{iK}\beta_K + u_i = \sum_{k=1}^{K} x_{ik}\beta_k + u_i \qquad (2.4)$$

in which the happiness of person *i* is a linear function of their values of the *K* explanatory variables; the term u_i in equation (2.4) is an error term which reflects the fact that the relationship between the H_i variable and the *x* variables is not exact but is subject to a random error.

However, equation (2.4) cannot be estimated since H_i is not observed. What can, however, be observed is a person's *level* of happiness as evidenced by their answers to the happiness question as to whether they were "very happy", "quite happy", "not very happy", "not at all happy". Suppose, without loss of generality, that these responses are aggregated so that persons are regarded as *happy* if they declare themselves as "very happy" or "quite happy" and as *unhappy* if they declare themselves as "not very happy" or "not at all happy".

A binary variable, Y_i, can be associated with these answers such that $Y_i = 1$ for those persons in the sample who answered that they were happy and $Y_i = 0$ for those who said they were unhappy. The categorisation of persons in the sample in terms of the two states, happy or unhappy, is implicitly based on the values of the latent variable, H_i, reaching a particular *threshold* value, δ such that:

$$Y_i = 1 \text{ if } H_i \geq \delta \text{ and } Y_i = 0 \text{ if } H_i < \delta \qquad (2.5)$$

The δ in equation (2.5) is an unknown parameter which has to be estimated along with the β_k coefficients ($k=1,2,...K$) of equation (2.4). The probabilities of Y_i taking the values 1 and 0 (denoted respectively, $\Pr(Y_i = 1)$ and $\Pr(Y_i = 0)$ are given by:

$$\Pr(Y_i = 1) = \Pr(\sum_{k=1}^{K} x_{ik}\beta_k + u_i \geq \delta) \text{ and } \Pr(Y_i = 0) = \Pr(\sum_{k=1}^{K} x_{ik}\beta_k + u_i < \delta) \qquad (2.6)$$

If we knew the probability distribution of the error term, u_i, then one could write the likelihood, *L*, of observing the sample in which say, respectively, N_1 and N_2 persons said they were happy and unhappy ($N = N_1 + N_2$) as:

$$L = \Pr(Y_i = 1)^{N_1} \times \Pr(Y_i = 0)^{N_2} \qquad (2.7)$$

In the absence of such knowledge, however, one would have to *assume* that the error term followed a particular probability distribution. If the error term, u_i, follows a *logistic* probability distribution then this results in a *logit* model. The *logistic* distribution is like the *normal* distribution

except that its tails are heavier – as Greene (2000) pointed out, "it is difficult to justify the choice of one distribution over the other [that is, logistic versus normal] on theoretical grounds… in most applications it seems not to make any difference" (p. 815).

Under the assumption that the error term, u_i, is distributed logistically, the log of the odds ratio of being happy to being unhappy may be written as a linear function of the values of the K explanatory variables with each variable, k, having an associated coefficient (or weight), β_k $(k=1,2,\ldots K)$:

$$\begin{aligned} &\log\left[\frac{\Pr(Y_i=1)}{\Pr(Y_i=0)}\right]=\log\left[\frac{\Pr(Y_i=1)}{1-\Pr(Y_i=1)}\right] \\ &=x_{i1}\beta_1+x_{i2}\beta_2+\ldots+x_{iK}\beta_K+u_i=\sum_{k=1}^{K}x_{ik}\beta_k+u_i \end{aligned} \tag{2.8}$$

where $Pr(Y_i=0)=1-Pr(Y_i=1)$.

The role of empirical analysis is then two-fold: (i) to specify the K variables which "determine" happiness, and (ii) to estimate the coefficients β_k $(k=1,2,\ldots K)$. When this has been accomplished, the *predicted* probability of person i $(i=1,2,\ldots N)$ being happy is, from equation (2.8):

$$\Pr(Y_i=1\mid x_{i1},x_{i2}\ldots x_{iK})=\frac{\exp\left[\sum_{k=1}^{K}x_{ik}\hat{\beta}_k\right]}{1+\exp\left[\sum_{k=1}^{K}x_{ik}\hat{\beta}_k\right]} \tag{2.9}$$

where $\Pr(Y_i=1\mid x_{i1},x_{i2}\ldots x_{iK})$ is the predicted probability of person i $(i=1,2,\ldots N)$ being happy calculated by applying the coefficient *estimates* $\hat{\beta}_k$ $(k=1,2,\ldots K)$ to the corresponding values of the explanatory variables x_{ik} $(k=1,2\ldots K)$. By construction of the logit model in equation (2.8), the predicted probabilities are forced to take values between 0 and 1 (Theil, 1970).

Following the advice contained in Long and Freese (2014), the subsequent results are calculated in the form of *predicted probabilities* – that is, $Pr(Y_i=1)$, as defined in equation (2.9). This is because the logit estimates do not have a natural interpretation *per se* and exist as a basis for computing more meaningful statistics which are the predicted probabilities $\Pr(Y_i=1)$ and $\Pr(Y_i=0)$.[5]

[5] The reason for this is that the logit estimates can only be interpreted as odds-ratios and not in terms of the underlying probabilities.

2.5 The Method of Recycled Predictions

The results in this book are presented in terms of the *average* of predicted probabilities, computed over the *N* individuals in the sample, using the method of "recycled predictions" as described in Long and Freese (2014, chapter 4) and in a STATA manual.[6] Since this method underpins the results presented in this chapter, and other chapters in this book, it is useful, at the very outset, to describe it in some detail.

The happiness variable Y_i is defined over persons distinguished by different characteristics – by gender, age, social class, income, educational attainment, etc. What the analysis seeks to do is to compare the average probabilities of persons in two groups – say, men and women, or high- and low-income persons, or those who are retired and those in full-time employment – in such a way that differences in the probabilities of being happy between the groups can be *entirely* ascribed to group membership and, further, to test whether these differences are sufficiently large as to be deemed statistically "significant". For example, suppose the two groups considered are men and women. The object is to identify the probabilities of being happy that can be *entirely* ascribed to gender and, further, to test whether these inter-gender differences are (statistically) significant. The method of "recycled predictions" enables one to do this.

This method of "recycled predictions" isolates the *group effect* on the predicted probability of say, men and women being happy. First, "pretend" that *all* the *N* persons in the estimation sample are men. Holding the values of the other variables constant (either to their observed sample values, as in this chapter, or to their mean values), compute the average probability of being happy under this assumption and denote it $\tilde{p}^M$. Next, "pretend" that *all N* persons in the estimation sample are women and, again holding the values of the other variables constant, compute the average probability of being happy under this assumption and denote it $\tilde{p}^W$.

Since the values of the non-gender variables are unchanged between these two hypothetical (all-male, all-female) scenarios, the only difference between them is that, in the first scenario, the

[6] See: https://www.stata.com/manuals13/rmlogitpostestimation.pdf .

male coefficient is "switched on" (with the female coefficient "switched off"), while, in the other scenario, the female coefficient is "switched on" (with the male coefficient "switched off"), for *all* the *N* persons in the estimation sample.[7] Consequently, the difference between $\tilde{p}^M$ and $\tilde{p}^W$ is *entirely* due to differences in gender. These probabilities are, hereafter, referred to as *synthetic probabilities* (SP).

Note that one could not isolate the effect of gender by simply comparing the average *predicted* probabilities computed *separately* over men and women. The difference between the two sample average probabilities for men ($\hat{p}^M$) and women ($\hat{p}^W$) does not reflect differences due *solely* to gender. This is because men and women differ not just with respect to gender but also with respect to the values of the other variables like education, income etc. Computing the mean probabilities over the male and female samples will not neutralise these differences and, hence, differences between $\hat{p}^M$ and $\hat{p}^W$ will be *partly* due to differences in gender but also *partly* due to differences between men and women in the values of their non-gender variables.

With these scene-setting remarks, the chapter turns in the next section to discussing the results in terms of the explanatory variables used to estimate the "happiness equation". This equation was estimated separately on data for Wave 7 (2017–2022), with 79,927 observations, and Wave 6 (2010–14), with 74,774 observations, of the WVS and these results are shown in Table 2.2 in terms of the predicted probabilities as discussed above.

<Table 2.2>

The columns headed "Marginal Probability" in Table 2.2 represent the difference between the average SP of the individuals in the various groups of that variable category and the average SP of the individuals in that category's *reference* group, denoted by [R]. Thus, in the age band category, the marginal probability of those in the 30–45 age band (with the 16–30 age group as the reference category) for Wave 7, was -0.017=0.844-0.861. The next columns show the standard errors associated with the marginal probabilities and the columns after that show the *z*-values, arrived at by dividing the marginal probabilities by their standard errors. The next section discusses the explanatory variables

[7] STATA's margin command will perform these calculations, for versions 14.0 onwards.

used in Table 2.2, both in terms of the literature associated with them and in terms of the chapter's empirical results.

2.6 The Determinants of Happiness

Gender

In a study based on Gallup Poll data for 160 countries, Graham and Chattopadhya (2013) found that women around the world reported higher levels of satisfaction than men; this was also the finding of Vieira-Lima (2013, chapter 2) using WVS data. However, an important difference between the two studies was that Graham and Chattopadhya (2013) found that the gender gap was larger in countries with high development levels while Vieira-Lima (2013) found that the gap between men and women was larger in countries with lower levels of development.[8]

Table 2.2 confirms that the average likelihood of women being happy (as measured by the SP of women) was significantly greater than that of men – 86.6 per cent versus 84.3 per cent for 2017–22 and 85.7 per cent versus 83.1 per cent for 2010–14. To test whether the gender gap was greater in richer or in poorer countries, the "happiness equation", as specified in Table 2.2, was estimated first only on observations for African countries and then only on observations for Western countries. In 2017–22, the gender gap for Africa was 3.4 points (the difference between the female and male SP of 75.8 and 72.4 per cent) and 1.4 points for the West (the difference between the female and male SP of 88.3 and 86.9 per cent); in 2010–14, the gender gap for Africa was 1.4 points (the difference between the female and male SP of 83.2 and 81.8 per cent) and 0.9 points for the West (the difference between the female and male SP of 89.9 and 89.0 per cent). Thus, based on the results of this chapter, women were "happier" than men (in the sense that the SP of women being happy was greater than that for men) but the gender gap was larger in poorer countries (for example, in Africa) than in richer ones (for example, in Western countries).

[8] See also Graham (2021).

Age

The consensus in the literature on happiness is that the relationship between age and happiness is U-shaped. Happiness declines as people grow older, reaches a minimum in middle age, and then begins to increase (Blanchflower and Oswald, 2017; Butkovic *et al.*, 2020; Ng, 2022). Blanchflower and Oswald (2017), after their analysis of seven separate sets of data, concluded that: "humans experience a midlife psychological 'low' and that this decline is apparently substantial and not minor" (p. 12), while Ng (2022) argued that "negative feelings and behaviour-like pressures, psychological problems, depressions, suicide rates, etc. are strongly mountain shape in age" (p. 92). Since these feelings are likely to be inimical to happiness, one could conclude from this that the age–happiness relation is U-shaped.

The results shown in Table 2.2 confirms the U-shaped nature of the relation between age and happiness. Based on WVS data for 2017–22, the SP of happiness fell significantly from 86.1 per cent for persons aged 16–30 to 84.4 and 85.1 per cent for persons aged 30–45 and 45–60, respectively, before rising significantly to 87.2 per cent for persons aged 60 and above. Based on WVS data for 2010–14, the SP of happiness fell significantly from 85.6 per cent for persons aged 16–30 to 83.6 and 84.1 per cent for persons aged 30–45 and 45–60, respectively, before rising significantly to 84.9 per cent for persons aged 60 and above.

Agency

"Agency", defined as the capacity to act to achieve a particular end, refers to people's freedom to make their own choices and it is plausible to assume that having such freedom should be a source of happiness; by contrast, constraints imposed on freedom of choice would, plausibly, detract from happiness (Kotan, 2010). Dolan (2014) referred to the fact that one's happiness is often the result of how one decides to allocate a scarce resource like time between competing uses (pursuing a career, travelling, making friends, caring for family). It is the freedom to make choices, by allocating one's time and attention as one chooses, that lies at the heart of agency.

The WVS asks its respondents to evaluate their freedom of choice (and *ipso facto* their control over their lives) on a scale of 1 (none) to 10 (a great deal). From these answers, respondents

are placed in three quantiles of freedom of choice – "low", "medium", and "high". The results in Table 2.2 show that the SP of being happy was greater, the higher the quartile. In 2017–22, the SP of being happy was 82.1, 87.4, and 89.9 per cent for persons with, respectively, low, medium, and high freedom of choice and in 2010–14, the corresponding figures were 81.9, 86.1, and 87.1 per cent. It is interesting to note that the largest increase in the SP occurred in moving from low to medium freedom of choice (5.4 points and 4.2 points in, respectively, 2017–22 and 2010–14) while the increase in the SP from medium to high freedom was more muted (1.5 points and 1 point in, respectively, 2017–22 and 2010–14).

Income

Central to understanding the role of income in affecting happiness is the "Easterlin paradox" (Easterlin, 1974, 2001; Easterlin and O'Connor, 2020). This paradox draws a distinction between the relationship between income and happiness at a point in time and the relationship over time between the growth of income and happiness. According to the paradox, *within* nations, happiness at a point in time varies directly with income, so that richer people in a country are happier than those that are poorer. Comparing *across* nations, however, richer countries are not, on average, happier than poorer countries: as countries get richer, happiness increases, if at all, by very little. Consequently, economic growth does not necessarily boost happiness.

This paradox exists because higher income confers two benefits to individuals: consumption benefits (in the sense of being able to afford more and better goods and services) and status benefits (in the sense of enjoying a higher social status relative to one's peers). Within a country, along with the consumption benefits of higher income, well-off people, by comparing themselves to poorer people, feel happier because they are manifestly better off, and thereby, also enjoy status benefits. Now suppose a country is twice as rich in 2022 as it was a decade ago, the income distribution being unchanged. So, comparing the two time periods, the *relative* positions of the rich and poor are the same in 2022 as they were in 2012. Consequently, the status benefit of income is the same in 2022 as it was in 2012 and any benefit of the higher 2022 income is entirely with respect to consumption. If these benefits are small, or have a ceiling, or if there are countervailing effects – like having to work

longer hours and, therefore, to surrender leisure time to obtain the higher income – then the rise in happiness consequent upon the country getting richer may be small. Income-based social comparisons, therefore, yield similar levels of happiness results two decades apart, notwithstanding the fact that the country's income has doubled in that period. For this reason, economic growth which, for example, doubled a country's GDP, would not necessarily make it happier.

Even within a country there is a limit to the amount of happiness that money can buy. As income rises, every additional pound or dollar in income yields increasingly smaller increments in happiness until a point is reached where money no longer buys happiness.[9] Kahneman and Deaton (2010) estimated that beyond an annual income of $75,000 money was unlikely to lead to greater happiness.

The WVS asks the respondents in each country to place their income in one of 10 steps with respect to their country's income: lowest (step 1) to highest (step 10).[10] From the answers provided, this chapter constructed three levels of income: lowest (steps 1, 2, and 3); medium (steps 4, 5, 6, and 7); and highest (steps 8, 9, and 10). Aggregating over all the countries, 76,911 persons answered the income question in Wave 7 (2017–22), of whom 9.6 per cent had a "high" income, 65.6 per cent had "medium" income, and 24.8 per cent had "low" income.

Instead of income acting as a direct input into happiness, the relation between the two entities could be mediated by people's degree of financial satisfaction. This means that the effects of an increase in income on happiness would depend upon the circumstances in which it was received. If it occurred sometime ago, or was lower than expected, or if members of one's peer group received a larger increase, then the effects on happiness would be smaller than if the increase was recent, larger than expected, and/or larger than those awarded to others. In addition, financial satisfaction would depend upon tailoring (or failing to tailor) expenditure to match income.

[9] This is the general property of the diminishing marginal utility of money – an additional pound provides less utility than did the previous pound.

[10] The precise wording of this question is: "On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions, and other incomes that come in".

<Figure 2.1>

The WVS asks its respondents to evaluate how satisfied they are about the financial circumstances of their household on a scale of 1 (dissatisfied) to 10 (satisfied). From the answers to this question, respondents were placed in three quantiles of financial satisfaction – "low", "medium", and "high". These results, presented in Figure 2.1, show that for 2017–22, 62.5 per cent of persons in the highest income quartile were also in the highest financial satisfaction quartile and 58.4 per cent of persons in the lowest income quartile were also in the lowest financial satisfaction quartile. It was also the case, however, that 14.9 per cent of persons in the highest income quartile were in the lowest financial satisfaction quartile and that 21.8 per cent of persons in the lowest income quartile were in the highest financial satisfaction quartile. Kahneman *et al.* (2006) observed that people with above-average incomes are relatively satisfied with their lives, but this effect appears to be transient.

The results in Table 2.2 show that the main effect of finances on happiness arose from satisfaction and not from income. Persons who were in the lowest, middle, and highest quartiles of financial satisfaction had SPs of, respectively, 80.4, 89.1, and 91.9 per cent of being happy in 2017–22, and 80.6, 88.0, and 89.9 per cent, respectively, of being happy in 2010–14. By contrast, after controlling for financial satisfaction, the effects of income on happiness were much more muted – now persons who were in the lowest, middle, and highest quartiles of income had SPs of, respectively, 84.7, 86.0, and 85.4 per cent of being happy in 2017–22, and 82.3, 85.7, and 85.6 per cent, respectively, of being happy in 2010–14. It is of note that neither for 2017–22 nor for 2010–14 was there any *significant* difference in the average SP of being happy between persons in the middle and highest quartiles of income.

Economic Status

Using the WVS data on the economic status of respondents, this chapter classified them into six categories of status: full-time employment, part-time employment, self-employment, retired, homemaker, and (an omnibus category) students/unemployed/other. The question is: does economic status matter for happiness?

One line of thinking is that retirement made people unhappier because they lost the self-affirmation associated with, and the sense of self-worth they obtained from, their jobs (Kuper, 2021). Kets de Vries (2003) reviewed the difficulties that many men face in "letting go" at the end of their careers. There is the feeling of "nothingness" that sudden inactivity induces. There is the fear of retaliation from colleagues against their ex-boss for having ridden rough shod over them. Lastly, there is the fear that their signature policies would be abandoned after their departure, and they would be left without a legacy.

The results reported in Table 2.2 fail to identify such effects. In 2017–22, the highest SP of being happy was for those in full-time employment (86.3 per cent) but the SP for retired persons (85.6 per cent) was not significantly lower than this. In 2010–14, the highest SP of being happy was for retired persons (85.4 per cent) but the SP for those in full-time employment (85 per cent) was not significantly lower than this. The lowest SPs of being happy in both waves were for the group students/unemployed/others: these were 84.5 per cent in 2017–22 and 84.2 per cent in 2010–14, significantly lower than the corresponding SP for retired persons and those in full-time employment.

Another hypothesis is that the main effect of a husband's retirement is on the mental health of his wife – termed the *Retired Husband Syndrome* (RHS) – particularly in Japan, where it was estimated that 60 per cent of wives were affected (Kenyon, 2006). Symptoms of RHS included headaches, depression, palpitations, and sleeplessness and were the result of working husbands and non-working wives, after leading lives in separate spaces for much of the day (he at the office, she at home), being forced to share the same – usually confined – space after the husband's retirement. Bertoni and Brunello (2014), using data from an annual survey conducted by the University of Osaka, estimated that every year of a husband's retirement in Japan increased the likelihood of his wife developing RHS symptoms by 5.8 to 13.7 percentage points.

It was possible to test for the RHS using WVS data by estimating an equation along the lines shown in Table 2.2 but estimated exclusively over the sample of *married women* who were either *homemakers* or *retired* (that is, house bound) and whose husbands were either *employed* (full-time, part-time, self-employed) or *retired*. This formulation, estimated over a sample of 9,906 women from the 2017–22 data, clearly showed that the SP of being happy was significantly lower for (married

homemakers or retired) women whose husbands were retired (SP=87.3 per cent) compared to equivalent women whose husbands were in full-time (SP=89.2 per cent) or part-time (SP=88.7 per cent) employment. Thus, on this preliminary analysis, there appeared to be tentative evidence for the existence of a Retired Husband Syndrome.

Health

Respondents to the WVS are asked whether their health is: (i) very good; (ii) good; (iii) fair; (iv) poor; (v) very poor. For the empirical analysis reported in this chapter, these answers were aggregated so that a person was regarded as being in "good health", if the answer to the WVS question was (i) or (ii); "fair health", if the answer was (iii); or "poor health", if the answer was (iv) or (v).

It is important to note that the evaluation of respondents' health status was based on self-rated health (SRH) and not on any external assessment. Although SRH, as a means of evaluating health status, is widely used in social statistics, Sen (2002) cautioned that a person's assessment of health may "be seriously limited by his or her social experience" (p. 860). People living in communities with many diseases and inadequate health infrastructure may regard themselves in good health because they may be "inclined to take certain symptoms for 'normal' when they are clinically preventable" (p. 860). By contrast, people in richer communities with the same ailments may regard themselves as being in poor health because with good medical facilities such ailments would be abnormal.

A separate question is whether SRH is a good indicator of observed health? Cramm *et al*. (2015) found only weak correlation between those "at risk" according to SRH and those at risk on objective indicators and suggested, as had Maddox and Douglass (1973), that the two sets of measures "reflect different 'parts' of mortality and morbidity" (p. 256). However, in arriving at this conclusion, Cramm *et al.* (2015) used three specific objective health outcomes – grip strength, lung capacity, and the degree of dependence in activities of daily living.

Another problem with SRH is that it does not distinguish between physical and mental health. Borooah (2006) showed, for Northern Ireland, that poor mental health was far more destructive of happiness than poor physical health. For persons with a severe physical affliction – diabetes, heart problems, and back pain – at least one-third described themselves as happy and at most 29 per cent

described themselves as unhappy. By contrast, only 4 per cent of those with severe mental health problems described themselves as happy and 60 per cent described themselves as unhappy.

Against the background of these qualifications, the results in Table 2.2 show the SP of being happy in 2017–22 was 64.3 per cent for those whose SRH was "poor" rising significantly to 80.3 per cent for those in "fair" health and rising further (and significantly) to 91.8 per cent for those whose SRH was "good". The corresponding figures for 2010–14 were 62, 76.6, and 90 per cent for those whose SRH was, respectively, "poor", "fair", and "good". A feature of Table 2.2 is that, of the determinants of happiness listed, the most extreme lows and highs in terms of the SP of being happy were both provided by people's health status: poor health could make the likelihood of being happy plummet and good health could make it soar. No other determinant was capable of that.

Education

Research suggests that education affects happiness through income: better-educated people earn larger incomes, and this makes them happy. Once income has been controlled for, the effect of education should be weak. For example, in a study for Spain, Cuñado and Pérez de Garcia (2011) argued that education affected happiness through two channels – indirectly through higher income, and directly through higher self-confidence and self-esteem. However, and most importantly, the direct effect of education did not depend on the level of education. There was difference in happiness between those without and with education but not between persons with different levels – primary, secondary, tertiary – of education.

Ruiu and Ruiu (2019), in a study of Italy, also showed that better education led to higher incomes and hence more happiness. However, better education could also raise expectations of higher income and, if these expectations were not met, happiness could be reduced. So, while better-educated people could find better job opportunities than lesser-educated ones, they ran the risk of frustration by raising their expectations unduly.

The results in Table 2.2 show that the SP of being happy did not change greatly with the level of education. In 2017–22, it fell from 85.9 per cent for low education, to 85.6 per cent for middle education, to 85.1 per cent for high education, while in 2010–14 it rose significantly from 83.8 per

cent for low education, to 84.8 per cent for middle education, to 84.9 per cent for high education. Using the framework for Spain and Italy, discussed above, this suggests that in 2017–22, it was the "frustration effect" that dominated while in 2010–14, it was the self-confidence effect that was important.

Social Class

Several studies have examined the link between socio-economic status (SES) and psychological well-being (Anderson *et al*., 2012; Navarro-Carrillio *et al*., 2020; Twenge and Bell Cooper, 2022). SES is a complex and multidimensional construct which asks people to place themselves at a point on the socio-economic spectrum. It is thus a purely *subjective* assessment. In arriving at that assessment, people might amalgamate the factors – usually, income, education, occupation – that comprise their view of what constitutes SES.

As Navarro-Carrillio *et al.* (2020) pointed out, while the objective indicators of income, education, and occupation, *when applied separately*, might be weakly correlated with well-being, their incorporation into a subjective SES might have a robust relation with well-being and health above and beyond that suggested by the objective indicators. In other words, the overall effect of education, income, and occupation, when combined into a SES, would be greater than the sum of its individual components.

Anderson *et al.* (2012) offered a more nuanced view by suggesting that it was not SES that mattered for happiness, but rather the respect and admiration one received from friends and co-workers. This respect and admiration determined what they described as a person's "sociometric status". They argued that this status predicted not just life satisfaction but also the experience of high and low emotions, and suggested that overall sociometric status mattered more to an individual than their SES.

Twenge and Bell Copper (2022) showed that, over the past 50 years, the positive correlation between SES and happiness has steadily become stronger in the USA. Comparing the 1970s with the 2010s, the difference between the happiness levels of those with the lowest and highest SES increased

substantially. Moreover, this pattern persisted when only white respondents were examined, suggesting that this finding was independent of race.

Against the background of the previous studies, the WVS, too, adopts a subjective approach to assessing the SES of its respondents by asking them to place themselves in one of the following categories: (i) upper class; (ii) upper middle class; (iii) lower middle class; (iv) working class; (v) lower class. From this range, this chapter aggregated categories (i) and (ii) to form an "upper class" with categories (iii) to (v) unchanged.

The results in Table 2.2 show that SES had a significant effect on the SP of being happy. In 2017–22, the SP of being happy was 87.2 per cent for the upper class, falling significantly to 86.1 per cent for the lower middle class, falling again significantly to 85.6 per cent for the working class, before reaching a minimum of 82.4 per cent for the lower classes. Similarly, in 2010–14, the SP of being happy was 88.1 per cent for the upper class, falling significantly to 85.1 per cent for the lower middle class, falling again significantly to 84.2 per cent for the working class, before subsiding to 80.7 per cent for the lower classes.

Religiosity

According to the Pew Research Center (PRC, 2019), there is a clear link between religiosity and happiness. In a study of persons from 25 countries, PRC (2019) distinguished between those who were: "actively religious" (identified with a religion and attended a place of worship at least once a month); "inactively religious" (identified with a religion but were not regular attendees at a place of worship); and "not religious" (did not identify with any religion). Their principal finding, which is of relevance to this chapter, was that "across 25 other countries for which data are available, actives [actively religious] report being happier than the unaffiliated [not religious] by a statistically significant margin in almost half (12 countries), and happier than inactively religious adults in roughly one-third (nine) of the countries" (p. 8).

These findings raise the question of the routes by which being actively religious improves one's capacity for happiness. PRC (2019) identified two routes. The first was the relation between religion and civic engagement. Regular attendance at a place of worship led to developing social

connections, expanding one's network of friends and acquaintances and, in general, building "social capital" which served to increase happiness (Lim and Putman, 2010). This is not to say that social capital cannot be built through secular activities but rather that building such capital is easier when a set of prior beliefs draws people towards religious congregations.

Another route suggested by PRC (2019) is that between religiosity, good health, and happiness. This arises partly because actively religious persons are less likely to smoke, drink, or use drugs than others who are either inactively religious or not religious. In almost all the countries studied by PRC (2019), the actively religious were less likely to smoke than the inactively religious or not religious. Another link between religiosity and good health is the early detection and support system provided by religious congregations. Regular contact with people might mean that an ailing person's symptoms might not go undetected and, further, that members of the congregation might stand ready to offer support in times of stress.

Against this background, the WVS asks its respondents how important religion is to their lives: (i) very important; (ii) rather important; (iii) not very important; (iv) not at all important. Answers (iii) and (iv) were aggregated to construct the religiosity variable used in this chapter: religion was "very important"; "fairly important; "not important". The results in Table 2.2 show that persons for whom religion was not important had the lowest SP of being happy in 2017–22 (85.2 per cent); this rose significantly (but only at the 10 per cent level of significance) to 85.7 per cent for persons for whom religion was fairly important and did not change for persons for whom religion was very important. In 2010–14, persons for whom religion was fairly important had the highest SP of being happy (86 per cent) while the SP for the two extremes of religiosity – at 83.9 per cent for not important and 84.2 per cent for very important – were not significantly different from each other. Overall, the results suggest that the effect of religiosity on happiness did not vary greatly between different gradations of religiosity; if anything, the SP of being happy was highest for those of moderate religiosity.

This still left open the possibility that religiosity was associated with happiness through health, the hypothesis being that the greater the degree of religiosity of persons, the better would be their health. To test this, a multinomial logit model was estimated in which the dependent variable

took three values: 1 (if the person reported poor health); 2 (if the person reported fair health); and 3 (if the person reported good heath). The values of this dependent variable for the respondents were then sought to be explained by their religiosity in addition to imposing the controls shown in Table 2.2 (age, gender, income etc.).

<Figure 2.2>

Figure 2.2 shows, for 2017–22, the SP of being in good health under the different religiosity categories. The highest SP of being in good health was for persons who were fairly religious (68 per cent) and this was significantly higher than the SP of 66.2 per cent for persons who were very religious and the SP of 65.1 per cent for persons who were not religious. There was, however, no significant difference in the SP of being in good health for persons who were very religious and those who were not religious. For 2010–14, however, the lowest SP of being in good health (69.6 per cent) was for people for whom religion was not important and this was significantly lower than the SP of 71.3 per cent for those for whom religion was fairly important and the SP of 72.7 per cent for those for whom religion was very important. There was, however, no significant difference in the SP of being in good health for persons who were very religious and those who were fairly religious. It would appear, from the evidence of two waves of the WVS, that the link between religiosity and health is tenuous – if anything, the SP of being in good health (like, as noted earlier, the probability of being happy) was highest for those of moderate religiosity.

Family and Friends

Prima facie, persons who viewed family and friends (F&F) as important and, by extension, shared time with them would be expected to be happier than others who did not have such interactions. This need not, however, be so. Psychologists emphasise the distinction between life satisfaction and happiness as experienced through moods and emotions. Given this distinction, it may be the case that interactions with F&F lead to a greater sense of life satisfaction but not necessarily to greater feelings of happiness (Kahneman *et al.*, 2004).

Hudson *et al.* (2020), in a study of 410 Michigan residents, investigated the links between spending time with others and subjective well-being (that is, life satisfaction or happiness). Their

conclusion was that positive social relations were a fundamental human need, and that people did "experience the higher levels of positive affect and meaning when in the company of loved ones—children, friends, and romantic partners - than when in the company of other types of relationship partners (e.g., bosses, colleagues, and extended family) or when alone" (p. 689).

Although the WVS does not carry information on respondents' time spent with F&F, it does provide information on how important family and, separately, friends are to the respondents: (i) very important; (ii) rather important; (iii) not very important; (iv) not at all important. From these responses, this chapter aggregated categories (iii) and (iv) to form a "family not important" or "friends not important" category, with categories (i) and (ii) unchanged. The results in Table 2.2 show a strong link between happiness and attitudes to F&F.

In 2017–22 (2010–14 values in parentheses), the SP of being happy was 86.2 (85) per cent for those for whom family was very important, falling significantly to 83.1 (80.3) per cent for those for whom family was rather important, and falling significantly again to 73.9 (76.6) per cent for those for whom family was not important. One of the problems in untangling the relationship between happiness and the importance of F&F is circularity – unhappy persons are more likely to deny the importance of F&F and so unhappiness might be a cause rather than the consequence of denying the importance of F&F. A similar comment applies to marriage, discussed below.

Marital Status

People marry/choose to live together because they expect that they would be happier together than living alone. So, are these expectations realised, making married persons happier than those who are single (never married) and those that were once married (separated, divorced, widowed)? One of the problems in untangling the relationship between happiness and marriage lies in the fact that people who are happy are also more likely to be married – so even if there is a positive association between marriage and happiness it might be because happy people tend to get married rather than because marriage causes happiness (Adshade, 2019).

Grover and Helliwell (2019), using British Household Panel Survey data, found that even after controlling for pre-marital welfare, married persons were happier than those who were not

married, suggesting that marriage was the cause of happiness from the start of married life into its later stages. Earlier in this chapter it was noted that the age profile of happiness was U-shaped. Grover and Helliwell (2019) added a layer of nuance to this finding by suggesting that this U-shaped relation was less steep for married than for non-married persons: consequently, the happiness gap between the two sets of persons was greatest in midlife, when all persons experienced a drop in happiness.

Consistent with the findings of cross-section studies, the results in Table 2.2 show a positive relation between marriage and happiness. The SP of being happy in 2017–22 fell from 86.9 per cent for married persons to 84.1 per cent for single persons, and to 81.7 per cent for once-married (separated, divorced, widowed) persons, while in 2010–14, the SP fell from 86.2 per cent for married persons to 83.3 per cent for single persons, and to 79.5 per cent for once-married persons. In both periods, the fall in the SP of being happy, from married to never-married to once-married persons, was significantly different from zero.

Children

It is a plausible assumption that people who choose to have children do so in the expectation that they would be happier than if they were childless. So, are these expectations fulfilled in practice? In a study of how 909 working women rated their daily activities, Kahneman *et al.* (2004) found that childcare was rated the twelfth most pleasurable activity out of a list of sixteen and that interacting with one's children was the fourth most pleasurable – behind friends, relatives, and partners – in a list of eight possible interactions. For a sample of 1.8 million Americans, Deaton and Stone (2014) found – consistent with earlier studies – a small negative effect between having children and life evaluation. The main difference between parents and non-parents was, however, that the former experienced more extremes of feeling in their day – more joy, but also more stress – whereas the latter tended to lead more emotionally placid lives.

This distinction is pursued by Senior (2014) who wrote of the difference between the task of parenthood as a *catalogue* of daily activities (not much fun) and the *meaning* that children bring to parents' lives (a great deal of joy). As she describes it (citing William Doherty), parenting is "a high-

cost/high-reward activity" (p. 239) which brings joy to parents' lives but at an enormous cost in terms of time, aggravation, angst, and self-doubt. So, in the end, is parenting worth it?

The answer, as reported in Table 2.2, is a cautious yes. The SP of being happy in 2017–22 rose from 85 per cent for childless persons to 85.7 per cent for persons with 1–2 children, and to 85.9 per cent for persons with three or more children; in 2010–14, these probabilities were 83.2 per cent (no children), 84.5 per cent (1–2 children), and 85.8 per cent. For both periods, the rise in the SP from being childless to having 1–2 children was significantly different from zero. In the 2010–14 period, additional children (from 1–2 to 3 or more) added significantly to the SP of being happy, but the same was not true for the 2017–22 period.

Neighbourhood Effects

As Papachristou and Rosas-Casals (2015) observed, concerns about the quality of people's neighbourhood on the quality of their lives have a long history in social policy and sociology (Amérigo and Aragonés, 1997; Forrest and Kearns, 2001; Hur and Morrow-Jones, 2008; Hur *et al*., 2010). A neighbourhood should be viewed not just as a physical space but as one which affects people's emotional and physical well-being. Kennedy and Adolphs (2011) pointed out that, in 1950, less than one-third of the world's population lived in urban regions; by the first decade of the 21st century, this figure is more than one in two. One consequence of living in a city is that the risk of depression and anxiety is increased; there is also a markedly higher rate of schizophrenia in people born and brought up in cities. Nevertheless, taking cities in their entirety, Glaeser *et al.* (2016) showed that people increased their happiness by moving from an "unhappy" city to a happier one.

The WVS asks its respondents several specific questions relating to the quality of their neighbourhoods. From these questions, this chapter chose to focus on an omnibus question which asked people how secure they felt in their neighbourhood: (i) very secure; (ii) quite secure; (iii) not very secure; (iv) not at all secure. From these responses, responses (iii) and (iv) were aggregated to form "insecure", with categories (i) and (ii) unchanged.

Table 2.2 shows that the degree of (in)security that people experienced in their neighbourhood had a significant effect on the SP of being happy. In 2017–22, the SP of being happy

fell significantly from 88.6 per cent for those who felt very secure, to 87.1 per cent for those who felt quite secure and, again significantly, to 80.6 per cent for those who felt insecure. In 2010–14, the SP of being happy fell significantly from 87.4 per cent for those who felt very secure, to 85.7 per cent for those who felt quite secure and, again significantly, to 78 per cent for those who felt insecure. It is striking that, of all the determinants of happiness reported in Table 2.2, the *lowest* SP of being happy was due to poor health (64.3 and 62 per cent in 2017–22 and 2010–14, respectively) and the second-lowest to feeling insecure in one's neighbourhood (80.6 and 78 per cent in 2017–22 and 2010–14, respectively).

2.7 Conclusions

The purpose of this chapter was to provide an empirical foundation for the study of happiness in terms of the factors influencing it and the relative strengths of their influence. The point was made early on that happiness was measured as a particular facet of subjective well-being and this related to the well-being emanating from the quality of everyday experience. This facet was the sole thrust of this chapter. There is, however, another aspect of the subjective assessment of well-being which relates not to the here and now, but to a (subjective) evaluation of the quality of a person's life. This aspect is termed "life satisfaction". Considerations of space preclude a fuller discussion of this aspect in this chapter, but it is discussed in some detail, in the context of jobs, in chapter 5.

This chapter set out several reasons why the subjective assessment of happiness might be flawed: people adapted to circumstances; they had aspirations; they made comparisons; and they downplayed negative feelings and experiences. For this reason, the next chapter explores alternative measures of "happiness". The first relates to the use of tranquillisers in West Belfast in Northern Ireland and the second to the propensity to self-harm in the state of Queensland in Australia.

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Table 2.1: Happiness in The World Across Waves of the World Values Survey

	Percentage of answers by category of happiness						
	Wave 1 1981–84	Wave 2 1990–94	Wave 3 1995–98	Wave 4 1999–2004	Wave 5 2005–09	Wave 6 2010–14	Wave 7 2017–22
Very happy	25.5	22.1	24.2	29.7	28.1	32.9	31.0
Quite happy	60.8	51.5	52.3	51.4	53.8	51.6	54.5
Not very happy	12.0	23.1	20.2	15.8	15.2	12.6	12.3
Not at all happy	1.7	3.3	3.3	3.2	2.9	2.9	2.2
Number of valid answers	12,341	23,969	73,869	59,386	83,097	88,807	89,248

Source: Own calculations from the World Values Survey

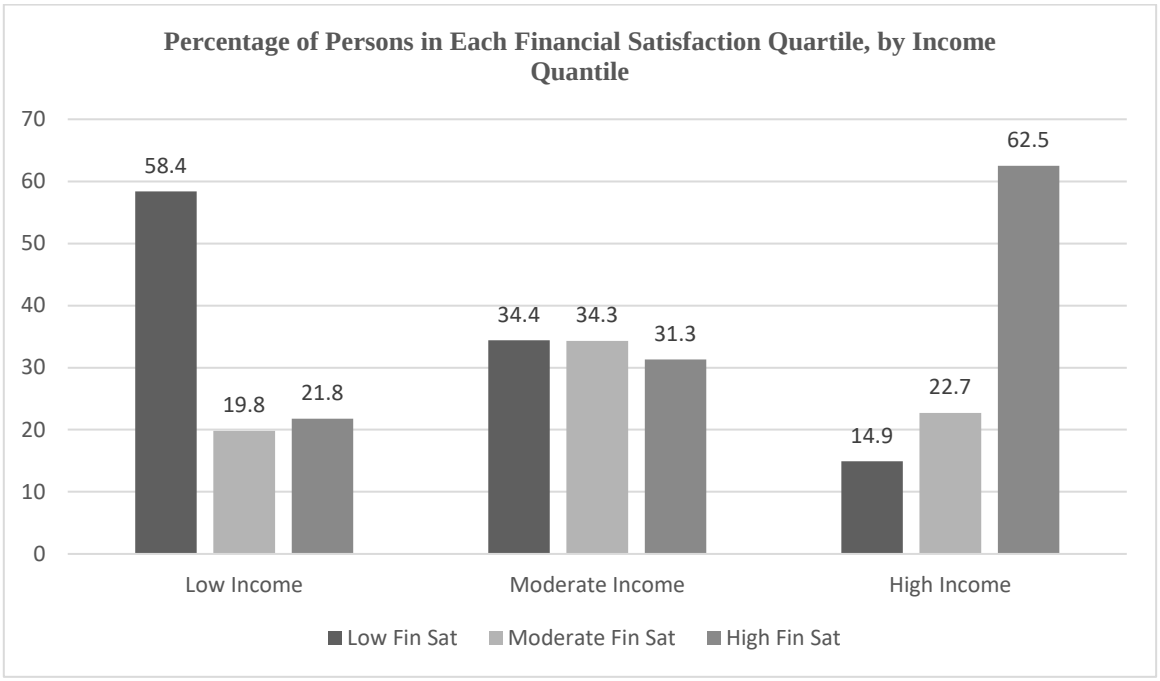
Table 2.2: Determinants of Happiness in the World

	Wave 7: 2017–2022				Wave 6: 2010–2014			
	Probability	Marginal Probability	Standard error	z-value	Probability	Marginal Probability	Standard error	z-value
Gender								
Male [R]	0.843				0.831			
Female	0.866	0.023**	0.002	9.4	0.857	0.026**	0.003	9.8
Age Band (years)								
16–30 [R]	0.861				0.856			
30–45	0.844	-0.017**	0.003	-5.0	0.836	-0.020**	0.004	-5.8
45–60	0.851	-0.010**	0.004	-2.6	0.841	-0.015**	0.004	-3.8
60+	0.872	0.011**	0.005	2.5	0.849	-0.007	0.005	-1.4
Freedom of Choice								
Low Freedom [R]	0.821				0.819			
Moderate	0.874	0.054**	0.003	18.9	0.861	0.042**	0.003	14.4
High	0.889	0.068**	0.003	23.4	0.871	0.051**	0.003	16.5
Education								
Lower [R]	0.859				0.838			
Middle	0.856	-0.003	0.003	-1.1	0.848	0.010**	0.003	3.0
Higher	0.851	-0.008**	0.003	-2.4	0.849	0.011**	0.004	3.1
Social Class								
Upper [R]	0.872				0.881			
Lower middle	0.861	-0.010**	0.003	-3.2	0.851	-0.030**	0.003	-8.7
Working class	0.856	-0.016**	0.004	-4.5	0.842	-0.039**	0.004	-10.6
Lower class	0.824	-0.047**	0.005	-10.2	0.807	-0.074**	0.005	-15.2
Employment								
Full-time employed [R]	0.863				0.850			
Part-time employed	0.859	-0.004	0.004	-0.9	0.845	-0.005	0.005	-1.1
Self-employed	0.850	-0.013**	0.004	-3.6	0.847	-0.003	0.004	-0.8
Retired	0.856	-0.006	0.005	-1.4	0.854	0.003	0.005	0.7
Homemaker	0.855	-0.008*	0.004	-1.9	0.833	-0.017**	0.004	-3.9
Student/Unemployed/Other	0.845	-0.017**	0.004	-4.7	0.842	-0.008**	0.004	-2.2
Income								
Low [R]	0.847				0.823			
Medium	0.860	0.014**	0.003	4.9	0.857	0.034**	0.003	11.4
High	0.854	0.007	0.005	1.3	0.856	0.033**	0.006	5.8
Financial Satisfaction								
Low [R]	0.804				0.806			
Moderate	0.891	0.087**	0.003	29.2	0.880	0.073**	0.003	24.3
High	0.918	0.114**	0.003	37.5	0.899	0.093**	0.003	28.9
Subjective Health								
Health poor [R]	0.643				0.620			
Health fair	0.803	0.161**	0.007	23.9	0.766	0.146**	0.008	19.4
Health good	0.910	0.267**	0.007	40.3	0.900	0.280**	0.007	37.5
Religiosity								
Religion not important [R]	0.852				0.839			
Religion rather important	0.857	0.006*	0.003	1.7	0.860	0.021**	0.004	5.8
Religion very important	0.857	0.005*	0.003	1.7	0.842	0.003	0.003	0.9
Family								
Family very important [R]	0.862				0.850			
Family rather important	0.813	-0.049**	0.004	-11.4	0.803	-0.047**	0.005	-9.0
Family not important	0.739	-0.123**	0.013	-9.7	0.766	-0.084**	0.013	-6.6
Friends								
Friends very important [R]	0.863				0.801			
Friends rather important	0.861	-0.002	0.002	-1.0	0.855	0.054**	0.004	13.6
Friends not important	0.822	-0.041**	0.004	-11.1	0.851	0.050**	0.004	12.3
Marital Status								
Married/living together [R]	0.869				0.862			
Divorced/separated/widowed	0.817	-0.052**	0.004	-13.2	0.795	-0.067**	0.004	-15.8
Single never married	0.841	-0.027**	0.004	-6.4	0.833	-0.029**	0.004	-6.6
Number of Children								
No children [R]	0.850				0.832			
1–2 children	0.857	0.007*	0.004	1.9	0.845	0.012**	0.004	2.9
3+	0.859	0.009**	0.004	2.2	0.858	0.026**	0.004	5.8
Secure in Neighbourhood								
Very secure [R]	0.886				0.874			
Quite secure	0.871	-0.015**	0.003	-5.6	0.857	-0.018**	0.003	-6.7
Not secure	0.806	-0.080**	0.003	-24.2	0.780	-0.094**	0.004	-25.9
Region								
Islamic [R]	0.845				0.801			
Africa	0.788	-0.057**	0.006	-10.0	0.812	0.011**	0.005	2.2
Eastern Europe	0.874	0.029**	0.005	6.1	0.827	0.026**	0.004	5.7
The West	0.860	0.015**	0.004	3.7	0.876	0.074**	0.005	16.0
Latin America	0.869	0.024**	0.004	6.7	0.903	0.102**	0.004	27.5
Asia	0.866	0.020**	0.004	5.7	0.884	0.082**	0.004	20.8

Logit estimates based on 79,927 observations for Wave 7 (2017–22) and 74,774 observations for Wave 6 (2010–2014). [R] denotes reference category.

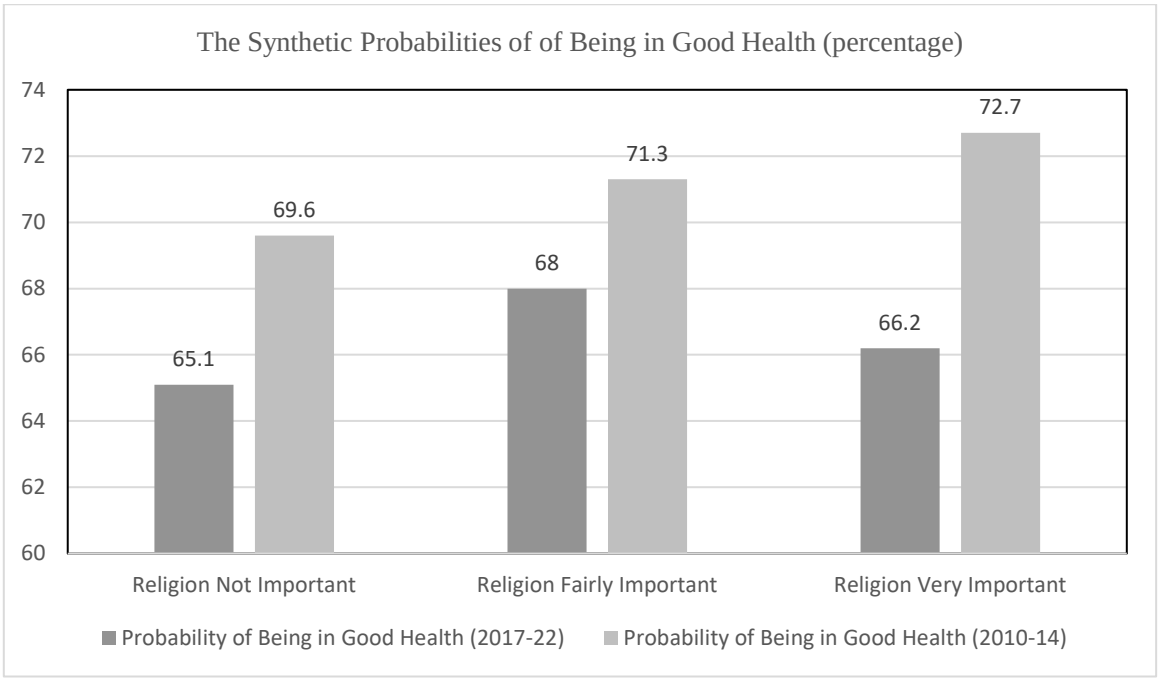
Definition of Regions: by Countries Identified in World Values Survey 2017–2022. Islamic: Bangladesh; Egypt; Indonesia; Iran; Iraq; Jordan; Kazakhstan; Kyrgyzstan; Lebanon; Libya; Morocco; Malaysia; Pakistan; Tajikistan; Tunisia; Turkey. **Africa:** Ethiopia; Kenya; Nigeria; Zimbabwe. **Eastern Europe:** Armenia; Romania; Russia; Serbia; Ukraine. **The West:** Andorra; Australia; Canada; Cyprus; Germany; Greece; Netherlands; New Zealand; United States of America. **Latin America:** Argentina; Bolivia; Brazil; Chile; Colombia; Ecuador; Guatemala; Mexico; Nicaragua; Peru; Puerto Rico; Venezuela. **Asia:** China; Hongkong; Japan; Korea; Macau; Maldives; Mongolia; Myanmar; Philippines; Singapore; Thailand; Taiwan; Vietnam.
** Marginal probability significant at 5% level; * Marginal probability significant at 10% level. *Source: Own calculations from World Values Survey*

Figure 2.1: The Relation Between Income and Financial Satisfaction, WVS 2017–22



Source: Own calculations from World Values Survey

Figure 2.2: The Effect of Religiosity on the Likelihood of Being in Good Health



Source: Own calculations from World Values Survey