

# **What Makes People Happy? Some Evidence from Northern Ireland**

**Vani K. Borooah\***  
**University of Ulster**  
**First Version: June 2005**  
**Revised Version: April 2006**

**Journal of Happiness Studies (forthcoming)**

## **Abstract**

Using data on over 3,000 individuals in Northern Ireland, this paper conducts an econometric investigation into what makes people happy. It draws a distinction between “objective” (income, marital status) and “subjective” (satisfaction with one’s standard of living (SoL); money worries; experience of poverty) factors determining happiness. In so doing, it takes a broader view of “economic status” than one defined solely by income: occupational class, mortgage status, financial worries, rural/urban residence, poverty experience, and, of course, income coalesce to form this, more complex, concept of economic status. Juxtaposed against this, is the concept of “context-free” and “context-specific” well-being. A particular example of the latter is the degree of satisfaction with one’s SoL and an important point of focus of the paper is the relationship between SoL satisfaction and happiness. A complementary point of focus is an analysis of the determinants of context-free and context-specific well-being. The paper also examines the effects of non-economic factors on happiness in particular on specific aspects of the ill-health of respondents and upon the quality of the areas in which they live. Having analysed these effects, it places a money value on each of the diversity of effects that act upon a person’s level of happiness.

**Keywords: Happiness, Standard of Living, Subjective Well-Being, Life Satisfaction, Physical Illness, Mental Illness, Neighbourhoods**

**JEL Classification: I1, I3**

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\* School of Economics and Politics, University of Ulster, Newtownabbey, Northern Ireland BT37 0QB. E-mail: [VK.Borooah@ulster.ac.uk](mailto:VK.Borooah@ulster.ac.uk) Tel: +44-(0)28-9036-6346 Fax: +44-(0)28-9036-6847. The analysis in this paper is based on the Poverty and Social Exclusion in Northern Ireland (PSENI) Project’s data and I am grateful to the Project leaders – Paddy Hillyard, Eithne McLaughlin and Mike Tomlinson – for permission to use these data. Thanks are due to Andrew Oswald, to one of the Editors of *JOHS*, and to two anonymous referees for their valuable comments. Needless to say, the usual disclaimer applies.

*Want is a growing giant whom the coat of Have was never large enough to cover.*  
Ralph Waldo Emerson.

## 1. Introduction

Some economists are beginning to question a (arguably, *the*) fundamental belief that underpins our subject, namely that a better economic performance by a country is in itself, and of itself, a "good thing"<sup>1</sup>. Since this belief is also shared by most people in public life, its concomitant is an undue concentration of both public and private resources on raising national income: "undue", because making people richer does not necessarily make them happier or, at any rate, not by enough to justify the outlay of resources in raising income. In other words, public policy, with its focus on raising national income, may not be giving people what they want – which is, to be happy – and, for this reason, there is a growing restlessness among social scientists about the wisdom of harnessing economic policy to the yoke of economic performance (Frank, 1997, 1999; Layard, 2002, 2003).<sup>2</sup>

Of course, it could be argued that while national income is tangible and can be measured - and, indeed, observed and admired in the rising volume and quality of consumer goods - the amorphous and fluctuating nature of what we regard as "happiness" renders it unsuitable as a policy goal. Four points, however, draw the sting from this argument. First, subjective well-being is increasingly being measured by simply asking people about how happy they are (or, they have been in the recent past). The annual General Social Surveys in the United States have for years asked people about their levels of happiness; the Eurobarometer Survey Series has since 1973 provided responses from residents of a number of European countries to a biannual question on life satisfaction<sup>3</sup>. Second, not only do people have little difficulty in answering these questions<sup>4</sup>, these subjective responses do reflect the respondents' substantive feelings of well being (Diener, 1984; Pavot, 1991; Watson and Clark, 1991)<sup>5</sup>. Third, there is strong evidence that responses between people in

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<sup>1</sup> Prominent among these dissenting economists are: Blanchflower and Oswald (2000); Clark (1996, 1999, 2001); Clark and Oswald (1994); Easterlin (1974, 1987, 2001); Frank (1985; 1997, 1999); Frey and Stutzer (2002); Hirsch (1976); Layard (2002, 2003); Oswald (1997); Scitovsky (1976).

<sup>2</sup> For a public policy approach to the pursuit of happiness see Marks (2004).

<sup>3</sup> "On the whole, are you very satisfied, fairly satisfied, not very satisfied, not at all satisfied, with the life you lead?"

<sup>4</sup> In the United States, the rate of non-response was less than one percent in fourteen surveys between 1972 and 1987 (Easterlin, 2001).

<sup>5</sup> For example, people who report high happiness scores tend to smile and laugh more and tend to be rated by others as happier (Oswald, 1997).

different countries, and from different cultures, are comparable because wherever they are, and whosoever they might be, people essentially want the same things: *inter alia* a decent SoL; a good family and social life; good personal and family health; and a good job (Cantril, 1965, Campbell, 1981). Lastly, as others have shown (Layard, 2003), and as this study will demonstrate, there are concrete and specific policy measures one could adopt to promote happiness.

In summary: while people may find it difficult to *define* happiness, they know, clearly and unambiguously, *when* they are happy or unhappy; moreover, people from different backgrounds are made happy or unhappy by the *same* things; if we *knew* what these were, and their relative strengths, we could fashion policy so as to influence these happiness inducing factors. The task of social scientists is to enquire into these matters and to inform a wider audience of their findings and this, indeed, is the purpose of this paper.

The instrument for conducting this particular enquiry are data from the Poverty and Social Exclusion in Northern Ireland Survey (hereafter, the PSENI Survey) which was carried out between June 2002 and January 2003. The PSENI Survey - covering 1,976 household interviews and 3,104 individual interviews - asked a range of questions about people's views on poverty, living standards, health status, neighbourhood status, and, most importantly from the perspective of this paper, their level of happiness and their degree of satisfaction with their standard of living (SoL)<sup>6</sup>.

In the context of the United Kingdom and, indeed in the wider setting of Western Europe, Northern Ireland's society – underpinned by sectarian division, mistrust, and hatred - can, with some justification, be regarded as “pathological”. While other countries in Western Europe also display fault lines between their Protestant and Catholic citizens, the sectarian killings and the sectarian cleansing of neighbourhoods - instigated and executed by well-armed and ruthless paramilitary groups – are unique to Northern Ireland. The brutality of such acts – founded on a hatred and mistrust of the “other side” – means that Northern Ireland's fractured society has, arguably, much in common with countries like Bosnia and Rwanda.

The factors shaping happiness in “normal” societies have been extensively studied and Frey and Stutzer (2002) provide an excellent review. What is less well known is the nature of happiness in dysfunctional societies. In the context of social

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<sup>6</sup> Hillyard *et. al.* (2003) provide details of the PSENI Survey.

pathologies, does happiness taken a different meaning and shape from that in more harmonious societies? Do people in Northern Ireland (or in Bosnia or Rwanda) find happiness not so much in their personal achievement but in the unhappiness and discomfort of members of rival groups? A striking instance of this is provided by the current reluctance of Northern Ireland's elected representatives to assume power – preferring to let Northern Ireland be governed from London – lest executive responsibility confer some advantage to the other side.

On the other hand, it could be that, notwithstanding sectarian hatreds, people in pathological societies, are made happy by the same (or similar) set of factors as people living in normal societies. If that were the case, it offers hope for the future: there is less that divides individuals in pathological and normal societies than their observed *group* behaviour might suggest. In other words, the inter-group violence one observes in Northern Ireland and elsewhere has less to do with people's support for such violence and more to do with people's fear of opposing the actions of a violent minority. The purpose of this paper is to untangle these issues in the context of the social pathology of Northern Ireland.

Using these data for Northern Ireland, described above, this paper conducts an econometric investigation into what makes people happy. It draws a distinction between “objective” (income, marital status) and “subjective” (satisfaction with one's SoL; money worries; experience of poverty) in determining happiness. In so doing, it takes a broader view of “economic status” than one defined solely by income: occupational class, mortgage status, financial worries, rural/urban residence, poverty experience, and, of course, income coalesce to form this, more complex, concept of economic status.

Juxtaposed against economic status, is the concept of “context-free” and “context-specific” well-being. A particular example of the latter is the degree of satisfaction with one's SoL and an important point of focus of the paper is the relationship between SoL satisfaction in particular and happiness in general. A complementary point of focus is an analysis of the determinants of context-free and context-specific well-being. For example, certain aspects of economic status (income, owner-occupation) might raise the level of SoL satisfaction and, thereby, affect happiness in general; other aspects of economic status (occupational status, poverty experience) might affect happiness directly and, through their affect on SoL satisfaction, also indirectly.

The paper also examines the effects of non-economic factors on happiness focusing on specific aspects of the ill-health of respondents and upon the quality of the areas in which they live. In terms of ill-health, it draws a distinction between physical and mental health problems in terms of their effects on a person's happiness and points to the devastating effect that mental - unlike physical - illness can have on people's happiness. In terms of area quality effects, it suggests these work through enhancing, or reducing, satisfaction with one's SoL rather than with one's general happiness. Having analysed these effects, it suggests a method for placing a money value on each of the diversity of effects that act upon a person's level of happiness.

## 2. The Data

The PSENI Survey asked its respondents about their level of happiness: "During the past month, have you been a happy person all the time? most of the time? a good bit of the time? some of the time? a little of the time? none of the time?" Notwithstanding differences between Surveys in the categories of happiness employed by them, and in the phrasing of their questions, direct questions, of the sort set out above, provide the principal way by which subjective well-being is measured (Easterlin, 2001)<sup>7</sup>. For example, the United States' General Social Survey asks: "Taken all together, would you say that you are: very happy, pretty happy, or not too happy?" (National Opinion Research Centre, 1999).

In order to boost cell sizes, the six categories of the "happiness question, above, were amalgamated as: those who said they were happy all, or most of, the time were amalgamated (and referred to) as "happy"; those who said they were happy a good bit, or some, of the time were amalgamated (and referred to) as "neither happy nor unhappy"; while those who said they were happy a little, or none, of the time were amalgamated (and are referred to) as "unhappy". Of the 3,039 respondents who answered the "happiness" question: 64 percent reported themselves as "happy"; 30 percent reported themselves as "neither happy nor unhappy"; and 6 percent reported themselves as "unhappy".

<Tables 1 and 2>

Tables 1 and 2 show the relation between levels of happiness and, respectively, the SoL and satisfaction with the SoL. Table 1 shows that of the 1,075

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<sup>7</sup> For a discussion of differences in the phrasing and the classification of such questions see Veenhoven (1993).

persons who considered their SoL to be high, 798 (or 74 percent) described themselves as happy "all or most of the time" (hereafter, abbreviated to "happy"). However, of the 1,950 respondents who described themselves as happy, only 798 (or 41 percent) considered their SoL to be high (Table 2). By contrast, Table 2 shows that, of the respondents who described themselves as happy, 1,539 (or 79 percent) were very satisfied/satisfied (hereafter, "satisfied") with their SoL. Consequently, a person who was happy was more likely to be satisfied with his/her SoL than to have a high SoL.

This point is reinforced by noting that being unhappy was more likely to be associated with dissatisfaction with one's SoL than with having a low SoL: of the 180 respondents who were unhappy, 32 percent were dissatisfied with their SoL (Table 2) but only 24 percent considered their SoL to be low (Table 1). These results point to the possibility that other, non-material, factors interposed themselves between the material well being of persons and their general level of happiness.

### ***Limitations of Self-reported Happiness***

Although this study is based on self-reported happiness it is, perhaps, worthwhile placing such measures in a wider context. Frey and Stutzer (2002) contains an extensive discussion of the concepts of happiness (chapter 1). In their view, there are two polar concepts of happiness: *subjective happiness* (for example, self-reported happiness) and *objective happiness* which refers to physiological measures of well-being (for example, by measuring brain waves). Frey and Stutzer (2002) argue that the appropriate concept depends upon the issue to be addressed: the objective concept is more appropriate for answering the intricate questions posed by psychologists; the subjective concept - although less precise because cognitive processes (which differ between individuals) play a major role in determining its outcome - is more commonly used in statistical work using data extending over a large number of individuals.

Nonetheless, 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 taken into account (Frey and Stutzer, 2002, p.12):

1. Adaptation, whereby people adjust to circumstances whether fortunate or unfortunate.

2. Aspiration, whereby people compare their current situation with what they hoped to achieve.
3. Comparison, whereby people compare their situation with that achieved by their peers.

These aspects mean that even the effects of an increase in income on happiness would depend upon the circumstances in which it was received: if the income increase occurred sometime ago, or if members of one's peer group received a larger increase, then the effects on happiness would be smaller than if it was a recent increase and/or larger than that awarded others. Similarly, the effects of events like unemployment or divorce on happiness would depend upon when they occurred, relative to self-reported happiness, and how wide spread the events were.

### ***Health Issues***

Most Surveys which contain questions about the health of respondents rely on self-reported health status. This raises the standard problem of reverse causality: arguably, happy persons were more likely to report themselves as being in good health. While the PSENI survey contained a self-assessed health status question, it also asked its respondents whether they had a health problem or disability (from a list of problems and disabilities shown to them) and, if they did, the severity of the problem or disability (hereafter, referred to as 'problem') : very severe; quite severe; not severe. Table 3 shows the relation between different types of problems and levels of happiness. Of the 1,545 persons who did not have any problems, 72 percent were happy and only 3 percent were unhappy. The proportion of persons with a problem who were happy was considerably lower - and the proportion who were unhappy considerably higher - than the corresponding proportions of persons without a problem.

<Table 3>

Moreover, not surprisingly, there was a strong inverse relation between the severity of a problem and the proportion of persons (with that problem, of that severity) who were happy: for example, as Table 3 shows, 32 percent of persons with a very severe heart problem described themselves as happy and 29 percent described themselves as unhappy; on the other hand, 65 percent of persons with a heart problem which was not severe described themselves as happy and only 6 percent described themselves as unhappy.

However, Table 3 shows that even for persons with a health problem there was a clear distinction to be made between physical and mental health problems in terms of their respective effects on happiness. For persons with a severe *physical* affliction, diabetes, heart problems, and back pain provided the lowest proportion of those who were happy and the highest proportion of those who were unhappy. If, on account of the small numbers involved, we put aside diabetes then, as Table 3 shows, of those who suffered the severest physical problem, *at least* one-third described themselves as happy and *at most* 29 percent described themselves as unhappy.

The story with regard to mental health problems (including anxiety and depression) was entirely different. Only 4 percent of those with severe mental health problems described themselves as happy and 60 percent described themselves as unhappy. Equally tellingly, only 32 percent of those whose mental health problems were *not severe* described themselves as happy - the same proportion as those with *severe* heart problems who regarded themselves as happy. Of those whose mental health problems were quite severe, 22 percent described themselves as unhappy; this was higher than the proportion of unhappy persons for the severest level of any physical problem, except heart problems and diabetes.

We recognise that persons with mental health problems might be predisposed towards being unhappy, just as persons with cardiac problems might be predisposed towards climbing a flight of stairs only with difficulty. This observation, however, does not (and, indeed, should not) devalue the unhappiness experienced by mentally ill persons compared to the unhappiness experienced by persons who have physical illnesses. Feelings of happiness or unhappiness, as observed earlier, are the result of a cognitive process which translate circumstances into feelings; this cognitive process is particularly effective in translating *clinically objective* illness like depression or schizophrenia into *subjective feelings* of unhappiness.

### ***Neighbourhood Quality and Social Capital***

In addition to asking its respondents to give an overall assessment of the quality of the areas in which they lived – “good”, “indifferent” (neither good nor bad), “bad” - the PSENI Survey asked them a number of questions about the physical and social characteristics of their areas. Prominent among the social characteristics were items which are often included under the rubric of "social capital": (i) this is a tight, close knit community; (ii) this is friendly place to live; (iii) this is a place where local

people look after each other; (iv) most people in this area trust each other; and (v) I am happy asking neighbours to keep an eye on my house.<sup>8</sup>

The most important feature of these “neighbourhood” questions is that they elicited far fewer responses than did the other questions: for example, while 3,094 persons answered the question about their health status, only 1,831 persons answered the question about the quality of their area.<sup>9</sup> However, these responses, showed that, in general, people who thought they lived in a good area, and those who thought there was social capital in their area of residence, were more likely to be happy, and more likely to be satisfied with their SoL than persons who thought they did not live in a good area or those who thought there was not social capital in their area of residence. For example, 66 and 73 percent of persons who lived in a “good” area described themselves as, respectively, “happy” and “satisfied” with their SoL; on the other hand, only 44 and 41 percent of persons who lived in a “bad” area described themselves as, respectively, “happy” and “satisfied” with their SoL.

### 3. Some Theoretical Considerations

We conceive of two kinds of “status”: economic status and, for want of a better term, non-economic status. A person’s economic status ( $r$ ) depends upon his/her income ( $y$ ) but also upon other economic variables, represented by the vector  $\mathbf{x}$ , such as, for example: occupational class; mortgage status; rural/urban residence; experience of poverty. A person’s non-economic status ( $s$ ) may be thought to depend upon a vector of variables, represented by  $\mathbf{z}$ , whose components are *inter alia*: whether he/she has a health problem and the nature of this problem; the quality of the neighbourhood in which he/she lives; his/her marital/family/religious status. In short:

$$r = r(y, \mathbf{x}) \text{ and } s = s(\mathbf{z}) \quad (1)$$

We may also conceive of “life” as being compartmentalised into “contexts” (my standard of living, my family, my friends, my job) and that associated with every context  $k$ , is a level of well-being,  $W_k$ . The “context-specific” well-being of a person depends upon his/her economic and non-economic status -  $W_k = W_k(r(y, \mathbf{x}), s(\mathbf{z}))$  -

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<sup>8</sup> In respect of each of the statements (i)-(v), above, respondents were invited to make (only) *one* of the following responses: "strongly agreement"; "agreement"; "neither agreement nor disagreement"; "disagreement"; "strongly disagreement". The variable "social capital in area", as used in the estimated equations, took the value 1 for respondents who "strongly agreed" or "agreed" with *at least one* of the statements (i)-(v), above; otherwise, the variable took the value zero.

and if we can define  $K$  collectively exhaustive contexts for “life”, overall happiness (or “context-free” well-being), denoted  $H$ , can be thought of as being determined by the levels of contextual well-being:

$$H = H(W_1, \dots, W_K) \quad (2)$$

However, if we are able to obtain reported levels of well-being for only a few contexts (say,  $W_I$ ) then a person’s overall level of happiness may be written:

$$H = H(W_I[r(y, \mathbf{x}), s(z)], r(y, \mathbf{x}), s(z)) \quad (3)$$

In equation (3), levels of economic and non-economic status affect the overall level of happiness in one, or both, of two ways: (i) *indirectly*, by affecting the context-specific level of well-being,  $W_I$ ; (ii) *directly*, by acting as proxy for the unobserved levels of contextual well-being. So, from equation (3), the effect of income on happiness is:

$$\frac{\partial H}{\partial y} = \frac{\partial H}{\partial W_I} \frac{\partial W_I}{\partial r} \frac{\partial r}{\partial y} + \frac{\partial H}{\partial r} \frac{\partial r}{\partial y} = \frac{\partial r}{\partial y} \left[ \frac{\partial H}{\partial W_I} \frac{\partial W_I}{\partial r} + \frac{\partial H}{\partial r} \right] \quad (4)$$

Equation (4) may be contrasted with the more usual analysis of the determinants of happiness, encapsulated, for example, in Blanchflower and Oswald (2002). In their analysis, economic status is entirely determined by income so that  $\partial r / \partial y = 1$ ; in contrast to the model proposed here, there are no other factors in their model – some of which could conceivably be subjective factors, like experience of poverty – shaping economic status. Moreover, the factors shaping happiness in the Blanchflower and Oswald (2002) model – and models of its ilk – impinge *directly* on happiness; by contrast, in our analysis some of the happiness-determining factors could operate through contextual channels and, consequently, could influence happiness *indirectly* (the first term in parentheses in equation (4)) and/or *directly* (the second term in parentheses in equation (4)).

#### 4. Estimation Results

If a person’s *intrinsic* happiness,  $H$  (equation (1)) is viewed as an unobserved latent variable underlying his/her observed *reported* happiness,  $R$ , then the appropriate method of estimation is *ordered logit* with the dependent variable,  $R$ , taking the

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<sup>9</sup> An unsavoury feature of life in Northern Ireland is the control by paramilitary groups of public sector housing estates which, quite naturally, would deter many residents from expressing views about the neighbourhood (Knox and Monaghan, 2002).

values: 1, if the respondent was "happy"; 2, if he/she was "neither happy nor unhappy"; and 3, if he/she was "unhappy".<sup>10</sup> In estimating a "happiness equation", our starting point was the specification adopted by Blanchflower and Oswald (2002) in their study of well-being in Britain and the USA. The results from estimating such an equation for Northern Ireland are shown as Equation A in Table 4.<sup>11</sup> These results demonstrate the importance of income as a determinant of happiness (a £20 per week increase in household income raised the probability of being "happy" by 0.6 percentage points<sup>12</sup>) but they also point to the importance of non-income factors such as *inter alia*: labour market status; educational qualifications; and age.<sup>13</sup>

<Table 4>

Equation B of Table 4 reports the results of estimating an "extended" Blanchflower and Oswald (2002) specification. This specification included the effects: of occupational class; family type; housing tenure; health; religion; religiosity; and location. It is clear from equation B that, under this extension, a group of variables directly impinged on reported levels of happiness in Northern Ireland: income; occupational class; health; religion; religiosity; and location.

Frey and Stutzer (2002) report that when persons were asked to rank, by importance, the different areas of their lives, good health obtained the highest ranking. However, given the possibility of reverse causality between reported health and happiness (happy persons are more likely to report themselves as being in good health), the three measures of health used in the regression of Table 4 – long-term limiting illness, mental health problems, physical health problems - related to actual ailments rather than to a subjective assessment of health status. All three measures of health made a significant contribution to happiness: persons with a long-term limiting illness and persons with physical problems had lower probabilities of being "happy" –

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<sup>10</sup> See Borooah (2001) for a discussion of ordered logit models.

<sup>11</sup> The marginal probability of being "happy" is shown alongside the estimated coefficients. For reasons of economy, the other two marginal probabilities are not shown but may be obtained, on request, from me. For each variable, the marginal probabilities sum to zero across the three happiness outcomes. For discrete variables, the marginal probabilities refer to changes consequent upon a move from the default category for that variable to the category in question

<sup>12</sup> The income variable used was "net household income". The values of the income variable were coded in bands starting with the lowest band of £10 per week and rising, in steps of £10 per week, to £100-£120 per week and then, in steps of £20 per week, to £700+ per week.

<sup>13</sup> The probabilities of unemployed, and of inactive, persons being "happy" were, respectively, 10.3 and 10.8 percentage points lower than for employed persons, while the probability of retired persons being "happy" was 7.1 points lower than for non-retired persons; persons without any qualifications were less likely, by 6.3 points, to be "happy" than persons with qualifications; and an additional year reduced the likelihood of being happy by 0.8 points, though this effect diminished as age increased.

by, respectively, 7.3 and 6.8 points – than persons without such an illness or problem. However, the strongest link between health and happiness was through mental illness: the probability of mentally ill persons being “happy” was 44.4 points lower than that for persons who did not have mental health problems.

The effects of occupational class on mortality and morbidity are well documented (Wilkinson, 1996; Epstein, 1998; Borooah, 1999, Marmot, 2004) and this may serve to link class to happiness. However, there may be a more direct link between class and happiness. Psychologists distinguish between stress caused by a high demand on one’s capacities – for example, tight deadlines – and stress engendered by a low sense of control over one’s life. Consequently, low status jobs may make fewer mental demands, but cause more psychological distress, than high status jobs (Karasek and Marmot, 1996; Griffin *et. al.*, 2002; Marmot, 2004) with the result that people in higher level jobs report significantly less job-related depression than people in lower-level jobs (Birdi *et.al.*, 1995). Equation B, Table 4, suggests that the probability of persons in the professional and managerial class being “happy” was 8.1 points higher than that for unskilled persons. The concept of a “social gradient” to health is well-known (Marmot, 2004); our results suggest that there may also be a “social gradient” to happiness.

Ellison (1991), on the basis of USA data, suggested that there was a direct and substantial link between religious certainty and well-being: individuals with strong religious faith reported higher levels of life satisfaction and greater personal happiness than persons whose faith was shaky.<sup>14</sup> Our results (Table 4, equation, B) show that, in Northern Ireland, the probability of persons, who attended a place of worship regularly, reporting themselves as “happy” was 10.2 points higher than that for persons who did not attend regularly. On the other hand, the likelihood of Catholics being “happy” – remembering that Northern Ireland was created as a Protestant state and, for many years, routinely discriminated against Catholics in the areas of employment and housing - was 3.4 points lower than for Protestants.

Lastly, persons living in rural areas of Northern Ireland were less likely, by 4.1 points, to be “happy” than persons living in towns. This supports a great deal of evidence about the isolation of farming communities in Britain, Northern Ireland, and (the Republic of) Ireland (Monk, 1998). Rural isolation has received little academic

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<sup>14</sup> See also Jarvis and Northcott (1987).

attention and indeed health care professionals who work closely with farmers have always expressed surprise that academic researchers do not consider isolation an important factor in contributing to unhappiness. For example, the Southern Health Board in Ireland has established a farm and rural stress helpline because “people who live in rural communities are often affected by additional issues such as isolation; not just feeling lonely, but real physical isolation where they are miles from their nearest neighbour or village”.<sup>15</sup>

### *Context-free versus context-specific well-being*

Psychologists draw a distinction between context-free happiness (the degree of well-being associated with life in its entirety) and context-specific happiness (the degree of well-being associated with a specific area of life). For example, context-specific well-being has been studied in terms of happiness in the workplace and a natural question which follows from such studies is the impact which job-related satisfaction has on general happiness (Warr, 2003). The PSENI Survey provided information on a number of context-specific areas of well-being: a person’s level of satisfaction with his/her SoL<sup>16</sup>; whether a person had financial worries and the frequency of such worries<sup>17</sup>; whether a person had had experience of poverty<sup>18</sup>; whether there had been an adverse event or incident in the life of the person in the previous year<sup>19</sup>. In this part, we examine the effects of these context-specific aspects of well-being on the level of general happiness and juxtapose these effects against the effects of the “objective” factors detailed in equation B of Table 4.

<Table 5>

Table 5, equation A, shows, that when “objective” and “subjective” factors were included in the happiness equation, the effects of the significant “objective”

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<sup>15</sup> Monk (1998) argues that isolation is experienced in many ways. As the numbers working in the industry fall and such traditional meeting places as auction markets are closed, farmers are becoming more socially isolated having fewer contacts with people who understand them and empathise with their problems.

<sup>16</sup> Very satisfied/satisfied; neither satisfied nor dissatisfied; if dissatisfied/very dissatisfied.

<sup>17</sup> All the time; sometimes; never.

<sup>18</sup> Coded as 'Yes' if this experience was: occasional, often, most of the time; and as 'No' if it was: rarely, or never.

<sup>19</sup> Although the PSENI Survey asked about 23 such events or incidents (for example: death of a close friend or relative; break-up of an intimate relationship; assault on person; home broken into or vandalised and damaged.) the numbers associated with any one event or incident were very small and, consequently, we aggregated over all these incidents to construct the umbrella category " adverse event or incident". A total of 963 persons had experienced one or more adverse event or incident, of whom 388 had experienced the death of a close friend or relative, 167 had had their home broken into or vandalised and damaged, and 123 had had their car stolen or damaged.

factors, discussed above, upon happiness were supplemented by a number of “subjective” factors: the degree of satisfaction with one’s SoL; the presence of financial worries; and experience of poverty. Persons who were very satisfied, or satisfied, with their SoL were more likely to be “happy”, by 11.3 points, compared to those who were very dissatisfied, or dissatisfied. Moreover, when satisfaction with SoL was included as an explanatory variable, the level of income no longer exercised a significant effect upon the level of happiness.

The largest increase in the likelihood of being “happy” was brought about through never having financial worries: the probability of persons without financial worries being “happy” was 18.6 points higher than for persons who always had financial worries. Compared to the intensity of financial worries, satisfaction with one’s SoL had a smaller effect on happiness: the probability of persons who were “satisfied” with their SoL being “happy” was 11.3 points higher than for persons who were “dissatisfied” with their SoL.<sup>20</sup> Experience of poverty, too, had a negative effect, of 7.8 points, on the probability of being happy.

Equation B of Table 5 shows the results of estimating an ordered logit model with the level of satisfaction with SoL as the dependent variable.<sup>21</sup> The explanatory variables are a subset of those shown against equation A of Table 5.<sup>22</sup> The first feature of note about these results are the variables which did not affect the level of happiness but which exercised a significant effect upon the level of satisfaction with SoL: a £20 per week increase in household income raised the likelihood of being satisfied with one’s SoL by 1 point; compared to tenants, owner occupiers without a mortgage were more likely to be satisfied with their SoL by 8.8 points and owner occupiers with a mortgage were more likely to be satisfied with their SoL by 4.4 points.

In addition: retired persons were more likely to be satisfied with their SoL (George, 1992), by 10.7 points, compared to the non-retired; persons in the professional/managerial class were more likely to be satisfied with their SoL, by 6.3

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<sup>20</sup> It is important to emphasise that being “satisfied” with one’s SoL and not having financial worries are not synonymous: 34 percent of persons who worried about finances all the time, and 74 percent of persons who worried about finances some of the time, were satisfied with their standard of living. Conversely, of persons who were satisfied with their standard of living, 50 percent worried about finances some of the time and 9 percent worried about finances all the time.

<sup>21</sup> Taking values: 1 if very satisfied/satisfied (71 percent); 2 if neither satisfied nor dissatisfied (16); 3 if dissatisfied/very dissatisfied (13 percent).

<sup>22</sup> See Hayo and Seifert (2002) for an analysis of subjective economic well-being in Eastern Europe.

points, compared to the unskilled; and persons who regularly attended a place of worship were more likely to be satisfied with their SoL, by 7.6 points, compared to those who did not.

Consistent with the injunction to respondents to the PSENI Survey to ignore health-related issues in assessing their degree of satisfaction with their SoL, neither long-term limiting illness nor physical health problem had a significant effect upon satisfaction with SoL. However, the presence of mental illness significantly reduced the likelihood of being satisfied with the SoL, by 11.4 points, compared to persons who were not mentally ill. In relation to this finding, two points emerge: first, the effect of mental illness, unlike that of physical health problems, would appear to be all-encompassing, extending to seemingly unrelated contexts like satisfaction with the SoL; second, notwithstanding the first point, the effect of mental illness was considerably greater on happiness in general than on SoL satisfaction.

In order to explore the hypothesis that a person's satisfaction with his/her SoL depended upon relative, as well as on absolute, income (Duesenberry, 1949), the satisfaction with the SoL equation included, in addition to household income, the income quartile of the household. This showed that, for a given absolute increase in household income, the increase in the likelihood of being satisfied with one's SoL was greater the higher the income quartile in which the household was placed.

Table 6 shows the results from estimating the happiness (equation A) and the satisfaction with SoL (equation B) *including "neighbourhood" effects*. As discussed earlier, these effects took two forms: (i) an overall assessment of the area in terms of "good", "indifferent", and "bad"; (ii) whether, in the context of specific characteristics, there was "social capital" in the area. However, since many people did not answer the neighbourhood quality/characteristics questions, the results shown in Table 6 were obtained from far fewer observations than those shown in Table 5: 1,457 against 2,480 for equation A and 1,469 against 2,502 for equation B.

The area effects were not significantly different from zero in the "happiness" equation though they were highly significant in the satisfaction with SoL equation: compared to living in a "good" area, living in a "bad" area reduced the likelihood of being satisfied with the SoL by 24.1 points and living in an "indifferent" area reduced this likelihood by 15.7. However, once the quality of the area had been accounted for,

the existence of social capital did not exert an independent influence<sup>23</sup>. These results suggest that respondents to the PSENI viewed the quality of the area in which they lived as determining their SoL satisfaction rather than their general of happiness. Consequently, given the loss of observations entailed in including area effects, it is probably right to exclude them from the “happiness” equation but to include them in the satisfaction with SoL equation.

### ***Financial Worries***

Equation A of Tables 5 and 6 showed that two context-specific aspects of well-being – satisfaction with one’s SoL and financial worries – played important roles in determining reported happiness: indeed, in the presence of these variables, income had no independent influence on happiness. Equation B of Tables 5 and 6 showed that satisfaction with SoL was strongly influenced by household income; in a similar vein, we might expect also that the presence, and intensity, of financial worries would depend upon income. Table 7 shows the results from estimating an ordered logit model with financial worries as the dependent variable.<sup>24</sup>

<Table 7>

Two significant points emerge from these results. First, an increase in household income increased the likelihood of being happy in two ways: it raised the likelihood of being satisfied with one’s SoL (equation B, Tables 5 and 6) and it lowered the probability of worrying about finances (Table 7). A similar observation holds for owner-occupation without a mortgage, retired persons, and couples with no children: persons in these groups were more likely to be happy both because they were more likely to be satisfied with their SoL and because they were less likely to worry about their finances.

Second, although marital status and family type did not affect happiness directly, they did affect happiness indirectly through their effects on financial worries: persons who were divorced/separated/widowed or married were more likely to worry about their finances (by, respectively, 8.2 points and 6.5 points) - and, therefore, less likely to be happy – than those who were single, never-married; compared to couples with children, single parents were more likely to worry about their finances (by 14.1 points) and, therefore, less likely to be “happy”; and couples without children were

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<sup>23</sup> Though see Helliwell and Putman (1999) on the cohesive effects of education.

less likely to worry about their finances (by 4 points) and, therefore, more likely to be “happy”.

## 5. Valuing the Determinants of Happiness

The mean and the median household income of the respondents to the PSENI Survey were both £300-320 per week (or, £15,600-£16,400 per year). Equation B, Table 4 shows that a £20 per week (£1,200 per year) increase in household income would raise the probability of being “happy” by 0.4 points. Since a physical health problem reduced the probability of being happy by 6.8 points, an *additional* £340 per week (or £17,680 per year) would be required to neutralise its effects; a long-term limiting illness, which reduced the probability of being “happy” by 7.3 points, would require an additional £365 per week (or £18,980 per year); and mental illness, which reduced the probability of being happy by 44.4 points would require an additional £2,200 per week (or £114,400 per year).

Another way of valuing the determinants of happiness, this time using the information in Tables 5, 6 and 7 (i.e. estimating the happiness equation with objective and subjective factors included) is as follows. The median household income of those who were “satisfied” with their SoL was £370 per week while the median household income of those who were “dissatisfied” with their SoL was £190 per week. Consequently, at the median, an additional £180 per week of household income would move a person from being “dissatisfied” to being “satisfied” with his/her SoL. From equation A of Table 5 (happiness equation, area effects excluded), this move, from being “dissatisfied” to being “satisfied” with one’s SoL, would increase the probability of person being happy by 11.3 points.

The median household income of those who *never* had financial worries was £370 per week; the median household income of those who *sometimes* had financial worries was £330 per week while the median household income of those who *always* had financial worries was £210 per week. Consequently, at the median, an additional £160 per week of household income would move a person from always having financial worries to never having financial worries. From equation A of Table 5 (happiness equation, area effects excluded), this move, from always worrying to never worrying, would increase the probability of person being happy by 18.6 points.

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<sup>24</sup> Taking values: 1, if never had financial worries (33 percent); 2, if sometimes had financial worries

So, at the median, an additional £180 per week (£9,360 per year) in household income would, *in total*, buy an extra 30 points in the likelihood of being happy: of this purchase, just over a third would derive from being “satisfied” with one’s SoL with the remainder coming from freedom from financial worries. Similarly, at the median, an additional £160 per week (£8,320 per year) in household income would buy an extra 18.6 points in the likelihood of being happy: all of this would come from moving from always worrying about finances to never worrying about finances. Lastly, an increase of £40 per week would, at the median buy an additional 6.8 points in the likelihood of being happy: all of this would come from moving from sometimes worrying about finances to never worrying about finances.<sup>25</sup> If we pass a straight line through these three points<sup>26</sup>, we find that it would require an increase of £6.70 in weekly household income to buy an additional point in the likelihood of being happy.

It is worth pointing out some of the dangers inherent in calibrating happiness by income. First, and most obvious, the effects of income on happiness are not linear; indeed, the marginal effects of an income increase on happiness would depend not just upon the size of the increase but, also, upon the level of income. Second, the effects of income level would represent not only the individual’s diminishing marginal utility of income but also the individual’s income relative to that of his/her peers.

Equation A of Table 5 shows that, compared to not having any health problem, mental illness *directly* reduced the probability of a person being “happy” by 39.8 points To neutralise this fall would require, as the previous paragraph argued, an additional £267 per week (£13,884 per year). But mental illness - by reducing the likelihood of being “satisfied” with one’s SoL (by 14.7 points, equation B, Table 6) and by reducing the likelihood of never having financial worries (by 14.2 points, Table 7) – also *indirectly* reduced the probability of a person being “happy”. We can estimate this as a 1.7 point reduction through the SoL effect and a 2.6 point reduction through the financial worries effect.<sup>27</sup> So, in total – taking into account direct and

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(48 percent); 3, if had financial worries all the time (19 percent).

<sup>25</sup> From equation A of Table 5 (happiness equation, area effects excluded), the difference between the marginal probabilities of never having financial worries and sometimes having financial worries.

<sup>26</sup> (6.8, 40) (18.6, 160) (30, 180).

<sup>27</sup> Arrived at by multiplying the marginal probability of being happy as a consequence of being satisfied with one’s SoL (0.113, Equation A, Table 5) and the marginal probability of being satisfied with one’s SoL through mental illness (-0.147, Equation B, Table 6). A similar observation applies to financial worries:  $0.186 \times -0.142$ .

indirect effects – mental illness reduced the likelihood of being happy by 44.1 points which, at £6.70 per point, was worth an additional £295 per week (£15,364 per year). It should be emphasised that, in performing this exercise, we are not suggesting that transferring an appropriate sum of money to a person who is mentally ill would transform him/her from a unhappy to a happy person. What is being offered is a metric with which to measure the effects of mental ill-health (and, below, other determinants of happiness) with the corollary that transferring public funds to mental health services might yield rich dividends in terms of increased happiness.

<Table 8>

Table 8 shows the equivalent money values, in terms of being “happy” and being satisfied with the SoL, of the different contingencies whose standard errors were sufficiently small for their coefficients to be significantly different from zero at 10 percent. The first column shows figures obtained using the first method - i.e. when, on the basis of equation B of Table 4, there was a *direct* between the different factors and happiness; the second column shows figures obtained using the second method - i.e. when there was a direct and/or an *indirect* link, via satisfaction with one’s SoL and the intensity of one’s financial worries, between the factors and happiness.

The money values of the contingencies were considerably lower under the second method than under the first since there was a strong connection between income and both satisfaction with one’s SoL and freedom from financial worries. Consequently, under the second method it only took an additional £6.70 per week to buy an extra point of the probability of being “happy”; to make the same purchase when a (weaker) direct link between income and happiness was established (Table 4), required an additional £50 per week.

The final column of Table 8 shows that, in terms of the probability of being happy, *good health* was worth: an extra £15,364 per year compared to being mentally ill; an extra £2,066 per year compared to having physical health problems; and an extra £1,986 per year compared to having a long-term limiting illness. By contrast: not having financial worries was worth an extra £7,247 per year, compared to being always anxious about finances, and an extra £2,439 per year compared to being sometimes anxious about finances; going to church regularly was worth an extra £3,748 per year (at least in Northern Ireland!); belonging to the professional/managerial class (having maximum autonomy over one’s life) was worth an extra £3,070 per year compared to being in a unskilled occupation (having

minimum autonomy over one's life); having no experience of poverty was worth an extra £4,665 per year; living in an urban area was worth an extra £1,637 per year; and living in a "good" neighbourhood was worth an extra £789 per year.

## 6. Conclusions

The contribution of this paper has been, firstly, to analyse the determinants of happiness using a richer set of data than is usually available to researchers in this field. These data allowed us to adopt a more complex concept of economic status which, in addition to income, encompassed: occupational class; rural/urban residence; and previous experience of poverty. They allowed a more refined analysis of health problems by, in particular, differentiating between mental and physical health problems in terms of their effects upon happiness. They enabled us to study the effects of neighbourhood quality upon happiness (though here the analysis was somewhat constrained by the reluctance of respondents to answer questions about their area of residence). Lastly, they allowed us to identify two important areas of "context-specific" well-being (SoL satisfaction and financial worries) and to measure their influence on the overall level of happiness (i.e. "context-free" well-being).

In so doing, this paper added to the mounting evidence that not only does money not buy happiness, it may not be even fully convertible in terms of the satisfaction of having money. One of the reasons for this is that satisfaction with one's SoL depends partly on a comparison with the SoL of others (Easterlin, 1974). Another is that people get used to their SoL and the passage of time takes the shine off a high SoL and dulls dissatisfaction with one which is low (Frank, 1999; Layard, 2003). Nonetheless, on our analysis, income was the major source of satisfaction with one's SoL. In turn, satisfaction with one's SoL was an important source of happiness but it was not the most important source. The two most important sources of happiness were: an absence of health problems, particularly *mental* health problems; and freedom from financial worries.

Different health problems had different effects upon happiness levels but it was clear from the analysis that, in terms of such effects, there was a clear distinction between physical and mental health problems. While people were able to be tolerably happy with physical problems, mental ill-health had a devastating effect on people's capacity to be happy. So, if we want to improve people's capacity for happiness we should place emphasis on improving their health (through better preventive and

curative measures) and, in particular - echoing Layard (2003) - we should focus on mental ill-health, the Cinderella of healthcare. This might mean focusing on specific groups, like single mothers, who are particularly vulnerable to mental ill-health.<sup>28</sup>

This study also pointed to the quality of the area in which one lived as an important ingredient in determining the level of satisfaction with one's SoL. It drew attention to the possible existence of a "social gradient" to happiness with persons in the higher occupational classes reporting themselves as more "happy" than those lower down the class ladder. It highlighted the benign influence of religious belief and practice – and the corrosive influence of poverty experience – in determining how happy people were.

The second contribution of this paper was to employ the marginal probabilities, derived from the estimated ordered logit models, to arrive at a price of £6.70 per week in additional household income for a percentage point increase in the likelihood of being "happy". Using this "price of happiness", we valued the different factors contributing to happiness in terms of equivalent, or compensatory, additional annual income. In conclusion, this study produced evidence - which buttressed that from other studies - to justify the claim that it is possible for social scientists, including economists, to suggest ways of raising the level of happiness in society. These, however, are not necessarily the paths down which economics, in its present form, would lead us.

The final contribution of the paper was to study the determinants of happiness in a society which, in terms of the bitterness of its sectarian quarrels, was severely dysfunctional. We showed that, notwithstanding this dysfunction, people in Northern Ireland were moved to happiness by the same set of factors which shaped happiness in more normal societies.

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<sup>28</sup> Family structure has been identified as an important factor related to mental health outcomes with single motherhood being a powerful predictor of poor mental health, and single mothers being particularly at risk for experiencing depressive symptoms (Jayakodie, 2000).

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**Table 1**  
**Happiness and the Standard of Living**

<i>Happiness →</i> <i>Standard of Living ↓</i>	<i>Happy all or most of the time</i>	<i>Happy a good bit or some of the time</i>	<i>Happy a little or none of the time</i>	<i>Totals</i>
<b>Considered fairly high or high</b>	<b>798</b> [74.23] (40.92)	<b>235</b> [21.86] (25.57)	<b>42</b> [3.91] (23.33)	<b>1,075</b> [100] (35.26)
<b>Considered to be neither high nor low</b>	<b>1,025</b> [61.08] (52.56)	<b>559</b> [33.31] (60.83)	<b>94</b> [5.60] (52.22)	<b>1,678</b> [100] (55.03)
<b>Considered to be fairly low or low</b>	<b>127</b> [42.91] (6.51)	<b>125</b> [42.23] (13.60)	<b>44</b> [14.86] (24.44)	<b>296</b> [100] (9.71)
<b>Totals</b>	<b>1,950</b> [63.96] (100)	<b>919</b> [30.14] (100)	<b>180</b> [5.90] (100)	<b>3,039</b> [100] (100)

**Table 2**  
**Happiness and Satisfaction with Standard of Living**

<i>Happiness → Satisfaction with Standard of Living ↓</i>	<i>Happy all or most of the time</i>	<i>Happy a good bit or some of the time</i>	<i>Happy a little or none of the time</i>	<i>Totals</i>
<b>Satisfied or very satisfied</b>	<b>1,539</b> [70.69] (78.88)	<b>557</b> [25.59] (60.54)	<b>81</b> [3.72] (45.00)	<b>2,177</b> [100] (71.35)
<b>Neither satisfied nor dissatisfied</b>	<b>263</b> [53.35] (13.48)	<b>188</b> [38.13] (20.43)	<b>42</b> [8.52] (23.33)	<b>493</b> [100] (16.16)
<b>Dissatisfied or very dissatisfied</b>	<b>149</b> [39.11] (7.64)	<b>175</b> [45.93] (19.02)	<b>57</b> [14.96] (31.67)	<b>381</b> [100] (12.49)
<b>Totals</b>	<b>1,951</b> [63.95] (100)	<b>920</b> [30.15] (100)	<b>180</b> [5.90] (100)	<b>3,051</b> [100] (100)

**Table 3**  
**Health Problems and Levels of Happiness**

	<i>Difficulty in seeing: 171 persons</i>			<i>Arthritis and Rheumatism: 385 persons</i>			<i>Heart Problems: 199 persons</i>			<i>Blood Pressure Problems: 283 persons</i>			<i>Back Pain: 344 persons</i>		
	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe
Happy	59	44	65	52	62	73	32	47	65	50	50	67	41	50	60
Neither happy nor unhappy	33	35	29	35	34	23	39	45	29	35	44	28	39	46	37
Unhappy	8	21	6	13	4	4	29	8	6	15	6	5	20	4	3
<b>Total</b>	100 (12)	100 (61)	100 (98)	100 (103)	100 (200)	100 (82)	100 (31)	100 (88)	100 (80)	100 (34)	100 (95)	100 (154)	100 (99)	100 (153)	100 (92)

Figures in parentheses are number of persons in the relevant category.

**Table 3 (continued)**  
**Health Problems and Levels of Happiness**

	<i>Asthma: 196 persons</i>			<i>Diabetes: 85 persons</i>			<i>Mental Health Problems: 236 persons</i>			<i>No Probs</i>	<i>Self-assessed health</i>	
	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe	Very Severe	Quite Severe	Not Severe		Good	Fair or poor
Happy	53	53	59	17	66	74	4	17	32	72	73	48
Neither happy nor unhappy	31	35	36	58	24	23	35	61	61	25	24	41
Unhappy	16	12	5	25	10	3	61	22	7	3	3	11
<b>Total</b>	100 (32)	100 (72)	100 (92)	100 (12)	100 (38)	100 (35)	100 (48)	100 (114)	100 (74)	100 (1,545)	100 (1,897)	100 (1,155)



**Table 4**  
**Ordered Logit Estimation Results for the Northern Ireland Happiness Equation:**  
**(Blanchflower and Oswald , 2002 specification)**

<i>Explanatory Variables:↓</i>	<i>Equation A</i> <i>Blanchflower and Oswald</i> <i>specification</i>		<i>Equation B</i> <i>“Extended” Blanchflower and</i> <i>Oswald</i>	
	<i>Estimates</i> <i>(z scores)</i>	<i>Marginal</i> <i>Probability of</i> <i>being “</i> <i>happy”</i> <i>(z scores)</i>	<i>Estimates</i> <i>(z scores)</i>	<i>Marginal</i> <i>Probability of</i> <i>being</i> <i>“ happy”</i> <i>(z scores)</i>
Female	0.041 (0.39)	-0.009 (0.39)	-0.073 (0.62)	0.016 (0.62)
Age	0.035** (1.98)	-0.008** (1.98)	0.052** (2.49)	-0.012** (2.49)
Age squared	-0.001** (2.90)	-	-0.001** (2.84)	-
Household Income	-0.025** (3.72)	0.006** (3.72)	-0.018** (2.31)	0.004** (2.31)
Married or Cohabiting	-0.027 (0.21)	0.006 (0.21)	-0.116 (0.76)	0.026 (0.76)
Separated, Divorced, Widowed	0.189 (1.29)	-0.045 (1.28)	0.085 (0.51)	-0.019 (0.50)
Unemployed	0.427* (1.78)	-0.103* (1.73)	0.022 (0.08)	-0.005 (0.08)
Inactive	0.463** (4.58)	-0.108** (4.56)	0.073 (0.60)	-0.016 (0.60)
Retired	-0.319* (1.83)	0.071* (1.91)	-0.353* (1.71)	0.075* (1.80)
No educational qualifications	0.269** (2.18)	-0.063** (2.16)	-0.022 (0.15)	0.005 (0.15)
Educational qualifications: GCSE	0.022 (0.19)	-0.005 (0.19)	-0.128 (0.94)	0.028 (0.95)
Educational qualifications: A level	-0.179 (1.19)	-0.041 (1.26)	-0.164 (0.97)	0.036 (0.99)
Professional/managerial			-0.373** (2.79)	0.081** (2.87)
Skilled manual/non- manual			-0.193* (1.76)	0.043* (1.78)
Single parent			0.038 (0.17)	-0.008 (0.17)
Couples with no children			-0.483** (4.06)	0.102** (4.32)
Owner-occupier: no mortgage			-0.102 (0.54)	0.023 (0.54)
Owner-occupier: mortgage			0.162 (0.91)	-0.036 (0.91)
Public sector tenant			0.217	-0.050

	(1.14)	(1.12)
<b>Long-term limiting illness</b>	<b>0.322**</b>	<b>-0.073**</b>
	(2.63)	(2.59)
<b>Mental health problem</b>	<b>1.911**</b>	<b>-0.444**</b>
	(11.52)	(13.87)
<b>Physical health problem</b>	<b>0.302**</b>	<b>-0.068**</b>
	(2.67)	(2.65)
<b>Catholic</b>	<b>0.150*</b>	<b>-0.034*</b>
	(1.64)	(1.64)
<b>Attends a place of worship regularly</b>	<b>-0.445**</b>	<b>0.102**</b>
	(4.30)	(4.21)
<b>Living in a rural area</b>	<b>0.183*</b>	<b>-0.041*</b>
	(1.70)	(1.69)
<b>Living in a small town</b>	<b>0.107</b>	<b>-0.024*</b>
	(0.94)	(0.94)

**Notes to Table 4:**

Dependent variable is reported happiness  $R_i$ :  $R_i=1$ , if “happy”;  $R_i=2$ , if “neither happy nor unhappy”;  $R_i=3$ , if “unhappy”

Equation A : number of observations = 2,767; pseudo- $R^2=0.0277$

Equation B : number of observations = 2,482; pseudo- $R^2=0.0888$ ;

Figures in parentheses are z-scores; \*\* denotes coefficients significant at 5 percent; \* denotes coefficients significant at 10 percent.

The income variable used was “net household income”. The values of the income variable were coded in bands starting with the lowest band of £10 per week and rising, in steps of £10 per week, to £100-£120 per week and then, in steps of £20 per week, to £700+ per week.

The default category for marital status is: single, never married.

The default category for labour market status is: employed.

The default category for educational qualification is: higher education qualification, including a degree.

The default category for family type is: married with children.

The default category for educational qualification for occupational class is: unskilled

The default category for housing tenure is: private sector tenant.

**Table 5**  
**Ordered Logit Estimation Results for the Northern Ireland Happiness, and**  
**Satisfaction with Standard of Living, Equations: Area Effects Excluded**  
**(Objective versus Subjective Factors)**

<i>Explanatory Variables:↓</i>	<i>Equation A</i>		<i>Equation B</i>		
	<i>Happiness Equation</i>	<i>Satisfaction with SoL equation</i>	<i>Estimates</i> <i>(z scores)</i>	<i>Marginal</i> <i>Probability of</i> <i>being “</i> <i>happy”</i> <i>(z scores)</i>	<i>Estimates</i> <i>(z scores)</i>
Female	-0.081 (0.67)	0.018 (0.67)	-0.139 (1.06)	0.025 (1.08)	
Age	0.044** (2.09)	-0.010** (2.09)	0.047** (2.16)	-0.008** (2.16)	
Age squared	-0.0004** (2.22)	-	-0.001** (2.21)	-	
Household Income	0.001 (0.15)	-0.0003 (0.15)	-0.054** (2.70)	0.010** (2.69)	
Income quartile: Q2	-	-	-0.167 (0.87)	0.030 (0.89)	
Income quartile: Q3	-	-	-0.377 (1.21)	0.066 (1.27)	
Income quartile: Q4	-	-	-0.684 (1.60)	0.113* (1.78)	
Married or Cohabiting	-0.114 (0.73)	0.026 (0.73)	-0.186 (1.13)	0.035 (1.11)	
Separated, Divorced, Widowed	0.059 (0.34)	-0.013 (0.34)	-0.070 (0.40)	0.013 (0.41)	
Unemployed	0.014 (0.05)	-0.003 (0.05)	0.249 (0.88)	-0.048 (0.83)	
Inactive	0.066 (0.53)	-0.015 (0.53)	0.180 (1.39)	-0.033 (1.37)	
Retired	-0.214 (1.01)	0.046 (1.04)	-0.667** (3.03)	0.107** (3.50)	
No educational qualifications	-0.138 (0.89)	0.030 (0.90)	-0.058 (0.34)	0.011 (0.34)	
Educational qualifications: GCSE	-0.168 (1.22)	0.037 (1.23)	0.071 (0.45)	-0.013 (0.45)	
Educational qualifications: A level	-0.098 (0.57)	0.021 (0.58)	-0.169 (0.86)	0.030 (0.89)	
Professional/managerial	-0.374** (2.75)	0.081** (2.83)	-0.355* (2.37)	0.063* (2.46)	
Skilled manual/non- manual	-0.191* (1.71)	0.042** (1.72)	-0.130 (1.13)	0.024 (1.14)	
Single parent	-0.022 (0.10)	0.005 (0.10)	-0.004 (0.02)	0.001 (0.02)	

<b>Couples with no children</b>	<b>-0.392**</b> (3.23)	<b>0.083**</b> (3.39)	<b>-0.294**</b> (2.27)	<b>0.052**</b> (2.38)
<b>Owner-occupier: no mortgage</b>	<b>0.027</b> (0.14)	<b>-0.006</b> (0.14)	<b>-0.509**</b> (2.60)	<b>0.088**</b> (2.76)
<b>Owner-occupier: mortgage</b>	<b>0.199</b> (1.09)	<b>-0.044</b> (1.09)	<b>-0.243</b> (1.32)	<b>0.044</b> (1.33)
<b>Public sector tenant</b>	<b>0.129</b> (0.66)	<b>-0.029</b> (0.65)	<b>-0.027</b> (0.14)	<b>0.008</b> (0.34)
<b>Long-term limiting illness</b>	<b>0.255**</b> (2.05)	<b>-0.057**</b> (2.02)	<b>0.097</b> (0.72)	<b>-0.018</b> (0.72)
<b>Mental health problem</b>	<b>1.683**</b> (9.94)	<b>-0.398**</b> (11.11)	<b>0.563**</b> (3.21)	<b>-0.114**</b> (2.94)
<b>Physical health problem</b>	<b>0.222*</b> (1.92)	<b>-0.050*</b> (1.91)	<b>-0.042</b> (0.34)	<b>0.008</b> (0.34)
<b>Catholic</b>	<b>0.106</b> (1.13)	<b>-0.024</b> (1.13)	<b>0.040</b> (0.39)	<b>-0.007</b> (0.39)
<b>Attends a place of worship regularly</b>	<b>-0.432**</b> (4.09)	<b>0.099</b> (4.00)	<b>-0.394**</b> (3.49)	<b>0.076**</b> (3.35)
<b>Lives in a rural area</b>	<b>0.209*</b> (1.91)	<b>-0.047*</b> (1.89)	<b>0.138</b> (1.18)	<b>-0.025</b> (1.18)
<b>Lives in a small town</b>	<b>0.161</b> (1.39)	<b>-0.036</b> (1.37)	<b>-0.168</b> (1.35)	<b>0.030</b> (1.38)
<b>Very satisfied/satisfied with SoL</b>	<b>-0.496**</b> (3.38)	<b>0.113**</b> (3.30)	-	-
<b>Neither satisfied nor dissatisfied with SoL</b>	<b>-0.203</b> (1.27)	<b>0.044</b> (1.31)	-	-
<b>Financial worries: none of the time</b>	<b>-0.897**</b> (5.88)	<b>0.186**</b> (6.38)	-	-
<b>Financial worries: some of the time</b>	<b>-0.537**</b> (3.19)	<b>0.118**</b> (4.31)	-	-
<b>Experience of poverty</b>	<b>0.347**</b> (3.49)	<b>-0.078**</b> (3.46)	<b>0.980**</b> (9.64)	<b>-0.190**</b> (9.36)
<b>Adverse Incident in past year</b>	<b>0.147</b> (1.51)	<b>-0.033</b> (1.50)	-	-

**Table 6**  
**Ordered Logit Estimation Results for the Northern Ireland Happiness, and**  
**Satisfaction with Standard of Living, Equations: Area Effects Included**  
**(Objective versus Subjective Factors)**

<i>Explanatory Variables:</i> ↓	<i>Equation A</i>		<i>Equation B</i>	
	<i>Happiness Equation</i>		<i>Satisfaction with SoL equation</i>	
	<i>Estimates</i> (z scores)	<i>Marginal</i> <i>Probability of</i> <i>being “</i> <i>happy”</i> (z scores)	<i>Estimates</i> (z scores)	<i>Marginal</i> <i>Probability of</i> <i>being “very</i> <i>satisfied or</i> <i>satisfied”</i> (z scores)
Female	-0.044 (0.29)	0.001 (0.29)	-0.042 (0.26)	0.008 (0.27)
Age	0.025 (0.96)	-0.005 (0.96)	0.052* (1.91)	-0.010* (1.91)
Age squared	-0.0003 (1.18)	-	-0.001** (2.16)	-
Household Income	0.005 (0.41)	-0.001 (0.41)	-0.052** (2.08)	0.010** (2.08)
Income quartile: Q2	-	-	-0.418* (1.71)	0.077* (1.82)
Income quartile: Q3	-	-	-0.568 (1.43)	0.104 (1.54)
Income quartile: Q4	-	-	-0.765 (1.41)	0.133 (1.62)
Married or Cohabiting	-0.234 (1.23)	0.05 (1.23)	-0.094 (0.47)	0.018 (0.47)
Separated, Divorced, Widowed	-0.050 (0.25)	.011 (0.26)	-0.084 (0.41)	0.016 (0.42)
Unemployed	0.420 (1.03)	0.085 (1.13)	0.441 (1.23)	-0.094 (1.15)
Inactive	0.151 (0.91)	-0.034 (0.91)	0.154 (0.90)	-0.030 (0.90)
Retired	-0.228 (0.84)	0.050 (0.87)	-0.418 (1.50)	0.077 (1.60)
No educational qualifications	-0.123 (0.59)	0.027 (0.60)	0.010 (0.04)	-0.002 (0.04)
Educational qualifications: GCSE	-0.280 (1.52)	0.061 (1.55)	0.104 (0.51)	-0.021 (0.50)
Educational qualifications: A level	-0.0003 (0.02)	0.001 (0.02)	-0.185 (0.72)	0.035 (0.74)
Professional/managerial	-0.340* (1.90)	0.074** (1.96)	-0.214 (1.11)	0.041 (1.13)
Skilled manual/non- manual	-0.230* (1.56)	0.051 (1.58)	0.032 (0.21)	-0.006 (0.21)
Single parent	-0.327 (1.23)	0.069 (1.30)	-0.142 (0.53)	0.027 (0.55)
Couples with no children	-0.392** (2.37)	0.084** (2.49)	-0.013 (0.07)	0.003 (0.07)

<b>Owner-occupier: no mortgage</b>	<b>0.133</b> <b>(0.54)</b>	<b>-0.030</b> <b>(0.54)</b>	<b>-0.545**</b> <b>(2.24)</b>	<b>0.101**</b> <b>(2.38)</b>
<b>Owner-occupier: mortgage</b>	<b>0.241</b> <b>(1.02)</b>	<b>-0.054</b> <b>(1.02)</b>	<b>-0.193</b> <b>(0.83)</b>	<b>0.038</b> <b>(0.83)</b>
<b>Public sector tenant</b>	<b>0.220</b> <b>(0.91)</b>	<b>-0.050</b> <b>(0.89)</b>	<b>0.050</b> <b>(0.22)</b>	<b>-0.009</b> <b>(0.21)</b>
<b>Long-term limiting illness</b>	<b>0.269*</b> <b>(1.67)</b>	<b>-0.061*</b> <b>(1.64)</b>	<b>0.040</b> <b>(0.23)</b>	<b>-0.008</b> <b>(0.23)</b>
<b>Mental health problem</b>	<b>1.541**</b> <b>(7.15)</b>	<b>-0.367**</b> <b>(7.73)</b>	<b>0.676**</b> <b>(3.09)</b>	<b>-0.147**</b> <b>(2.86)</b>
<b>Physical health problem</b>	<b>0.231*</b> <b>(1.51)</b>	<b>-0.052</b> <b>(1.50)</b>	<b>0.018</b> <b>(0.11)</b>	<b>0.004</b> <b>(0.11)</b>
<b>Catholic</b>	<b>0.055</b> <b>(0.45)</b>	<b>-0.012</b> <b>(0.45)</b>	<b>-0.031</b> <b>(0.24)</b>	<b>-0.006</b> <b>(0.24)</b>
<b>Attends a place of worship regularly</b>	<b>-0.346**</b> <b>(2.47)</b>	<b>0.079**</b> <b>(2.42)</b>	<b>-0.274*</b> <b>(1.85)</b>	<b>0.055*</b> <b>(1.80)</b>
<b>Lives in a rural area</b>	<b>0.139</b> <b>(0.95)</b>	<b>-0.031*</b> <b>(0.95)</b>	<b>0.349**</b> <b>(2.30)</b>	<b>-0.070</b> <b>(2.27)</b>
<b>Lives in a small town</b>	<b>0.147</b> <b>(0.98)</b>	<b>-0.033</b> <b>(0.97)</b>	<b>-0.073</b> <b>(0.46)</b>	<b>0.014</b> <b>(0.46)</b>
<b>Very satisfied/satisfied with SoL</b>	<b>-0.413**</b> <b>(2.14)</b>	<b>0.094**</b> <b>(2.10)</b>	<b>-</b>	<b>-</b>
<b>Neither satisfied nor dissatisfied with SoL</b>	<b>-0.140</b> <b>(0.68)</b>	<b>0.031</b> <b>(0.70)</b>	<b>-</b>	<b>-</b>
<b>Financial worries: none of the time</b>	<b>-1.006**</b> <b>(4.94)</b>	<b>0.208**</b> <b>(5.42)</b>	<b>-</b>	<b>-</b>
<b>Financial worries: some of the time</b>	<b>-0.623**</b> <b>(3.79)</b>	<b>0.138**</b> <b>(3.83)</b>	<b>-</b>	<b>-</b>
<b>Experience of poverty</b>	<b>0.358**</b> <b>(2.76)</b>	<b>-0.081**</b> <b>(2.74)</b>	<b>0.851**</b> <b>(6.51)</b>	<b>-0.173**</b> <b>(6.41)</b>
<b>Adverse Incident in past year</b>	<b>0.265**</b> <b>(2.11)</b>	<b>-0.059</b> <b>(2.12)</b>	<b>-</b>	<b>-</b>
<b>Lives in a “bad area”</b>	<b>0.380</b> <b>(1.21)</b>	<b>-0.089</b> <b>(1.17)</b>	<b>1.049**</b> <b>(3.43)</b>	<b>-0.241</b> <b>(3.17)</b>
<b>Lives in an “indifferent” area</b>	<b>0.261</b> <b>(1.34)</b>	<b>-0.060</b> <b>(1.31)</b>	<b>0.719**</b> <b>(3.79)</b>	<b>-0.157</b> <b>(3.50)</b>
<b>Social capital in area of residence</b>	<b>0.225</b> <b>(0.79)</b>	<b>-0.048</b> <b>(0.82)</b>	<b>-0.162</b> <b>(0.59)</b>	<b>-0.033</b> <b>(0.58)</b>

**Notes to Table 5 and 6:**

Dependent variable for equation A, in Tables 5 and 6, is reported happiness  $R_i$ :  $R_i=1$ , if “happy”;  $R_i=2$ , if “neither happy nor unhappy”;  $R_i=3$ , if “unhappy”.

Dependent variable for equation B, in Tables 9 and 10, is satisfaction with SoL  $S_i$ :  $S_i=1$ , if “very satisfied/satisfied”;  $S_i=2$ , if “neither satisfied nor dissatisfied”;  $S_i=3$ , if “very dissatisfied/dissatisfied”.

Table 5, equation A : number of observations = 2,480; pseudo- $R^2=0.1174$ .

Table 5, equation B : number of observations = 2,502; pseudo- $R^2=0.1369$ .

Table 6, equation A : number of observations = 1457; pseudo- $R^2=0.1249$ .

Table 6, equation B : number of observations = 1,469; pseudo- $R^2=0.1502$ .

Figures in parentheses are z-scores; \*\* denotes coefficients significant at 5 percent; \* denotes coefficients significant at 10 percent.

The income variable used was “net household income”. The values of the income variable were coded in bands starting with the lowest band of £10 per week and rising, in steps of £10 per week, to £100-£120 per week and then, in steps of £20 per week, to £700+ per week.

The default category for marital status is: single, never married.

The default category for labour market status is: employed.

The default category for educational qualification is: higher education qualification, including a degree.

The default category for family type is: married with children.

The default category for educational qualification for occupational class is: unskilled

The default category for housing tenure is: private sector tenant.

The default category for residence is: large town or city.

The default category for financial worries is: always have financial worries.

Adverse incident: *inter alia* the death of a close friend or relative, home broken into or vandalised and damaged, car stolen or damaged.

**Table 7**  
**Ordered Logit Estimation Results:**  
**Northern Ireland Financial Worries Equation**

<i>Explanatory Variables:↓</i>	<i>Estimates (z scores)</i>	<i>Marginal Probability of having financial worries “all the time”</i>	<i>Marginal Probability of having financial worries “sometimes”</i>
Female	-0.106 (0.98)	-0.013 (1.00)	-0.009 (0.94)
Age	-0.017 (0.90)	-0.002 (0.90)	-0.001 (0.90)
Age squared	-0.0001 (0.77)	-	-
Household Income	-0.053** (7.68)	-0.006** (7.46)	-0.004** (6.33)
Married or Cohabiting	0.313** (2.25)	0.036** (2.32)	0.029** (2.06)
Separated, Divorced, Widowed	0.425** (2.71)	0.056 (2.47)	0.026** (4.03)
Unemployed	0.058 (0.21)	0.007 (0.21)	0.005 (0.22)
Inactive	0.032 (0.29)	0.004 (0.29)	0.003 (0.29)
Retired	-0.815** (4.47)	-0.080 (5.46)	-0.104** (3.49)
No educational qualifications	0.253* (1.84)	0.031* (1.78)	0.020** (2.03)
Educational qualifications: GCSE	-0.037 (0.31)	-0.004 (0.31)	-0.003 (0.30)
Educational qualifications: A level	-0.298** (2.01)	-0.033** (2.19)	-0.031* (1.70)
Professional/managerial	-0.889 (0.74)	0.011 (0.73)	0.007 (0.76)
Skilled manual/non- manual	-0.051 (0.50)	-0.006 (0.50)	-0.004 (0.49)
Single parent	0.822** (3.73)	0.127** (3.03)	0.014 (1.02)
Couples with no children	-0.192* (1.90)	-0.022** (1.97)	-0.018* (1.72)
Owner-occupier: no mortgage	-0.336** (1.96)	-0.038** (2.05)	-0.033* (1.75)
Owner-occupier: mortgage	0.153 (0.95)	0.018 (0.95)	0.013 (0.96)
Public sector tenant	0.222 (1.25)	0.028 (1.18)	0.016 (1.54)
Long-term limiting illness	0.140 (1.39)	0.017 (1.20)	0.011 (1.30)

<b>Mental health problem</b>	<b>0.814<sup>**</sup></b> <b>(5.03)</b>	<b>0.122<sup>**</sup></b> <b>(4.15)</b>	<b>0.020<sup>**</sup></b> <b>(2.25)</b>
<b>Physical health problem</b>	<b>0.245<sup>**</sup></b> <b>(2.42)</b>	<b>0.030<sup>**</sup></b> <b>(2.36)</b>	<b>0.020<sup>**</sup></b> <b>(2.51)</b>
<b>Catholic</b>	<b>-0.009</b> <b>(0.11)</b>	<b>-0.001</b> <b>(0.11)</b>	<b>-0.001</b> <b>(0.11)</b>
<b>Attends a place of worship regularly</b>	<b>0.077</b> <b>(0.80)</b>	<b>0.009</b> <b>(0.82)</b>	<b>0.007</b> <b>(0.78)</b>
<b>Lives in a rural area</b>	<b>-0.044</b> <b>(0.45)</b>	<b>-0.005</b> <b>(0.54)</b>	<b>-0.004</b> <b>(0.44)</b>
<b>Lives in a small town</b>	<b>-0.139</b> <b>(1.35)</b>	<b>-0.06</b> <b>(1.38)</b>	<b>-0.013</b> <b>(1.27)</b>
<b>Experience of poverty</b>	<b>0.956</b> <b>(10.61)</b>	<b>0.126<sup>**</sup></b> <b>(9.54)</b>	<b>0.059<sup>**</sup></b> <b>(7.65)</b>

**Notes to Table 7:**

The dependent variable takes the values: 1, if never had financial worries; 2, if sometimes had financial worries; 3, if had financial worries all the time.

Number of observations = 2,503; pseudo-R<sup>2</sup>=0.1214.

Figures in parentheses are z-scores; \*\* denotes coefficients significant at 5 percent; \* denotes coefficients significant at 10 percent.

See notes to Tables 9 and 10 for variable definitions.

**Table 8**  
**Money Values of Contingencies in Terms of**  
**Being “Happy” and Being “Satisfied” with One’s Standard of Living**

	<i>Happy</i> <sup>*</sup> (£ per year)	<i>Happy</i> <sup>**</sup> (£ per year): <i>Direct</i> <i>Effect</i>	<i>Happy</i> <sup>**</sup> (£ per year): <i>Indirect</i> <i>Effect</i>	<i>Happy</i> <sup>**</sup> (£ per year): <i>Total Effect</i>
<i>Favourable contingencies:</i>				
<b>Retired</b>	<b>19,500</b>	-	<b>421 (1.2)</b>	<b>421</b>
<b>Professional/Managerial</b>	<b>21,060</b>	<b>2,822 (8.1)</b>	<b>248 (0.7)</b>	<b>3,070</b>
<b>Skilled Manual/non-manual</b>	<b>11,180</b>	<b>1,463 (4.2)</b>	-	<b>1,463</b>
<b>Couples with no children</b>	<b>26,520</b>	<b>2,891 (8.3)</b>	<b>464 (1.3)</b>	<b>3,355</b>
<b>Attends a place of worship regularly</b>	<b>26,520</b>	<b>3,449 (9.9)</b>	<b>299 (0.8)</b>	<b>3,748</b>
<b>Owner-occupier: no mortgage</b>	-	-	<b>806 (2.3)</b>	<b>806</b>
<b>Financial worries: none of the time</b>		<b>7,247 (20.8)</b>	-	<b>7,247</b>
<b>Financial worries: some of the time</b>		<b>4,808 (13.8)</b>	-	<b>4,808</b>
<i>Unfavourable contingencies:</i>				
<b>Married</b>		-	<b>421 (-1.2)</b>	<b>421</b>
<b>Divorced/separated/widowed</b>		-	<b>531 (-1.5)</b>	<b>531</b>
<b>Single Parent</b>		-	<b>914 (-2.6)</b>	<b>914</b>
<b>No educational qualification</b>		-	<b>330 (-0.9)</b>	<b>330</b>
<b>Long-term limiting illness</b>	<b>18,980</b>	<b>1,986 (-5.7)</b>	-	<b>1,986</b>
<b>Physical health problem</b>	<b>17,680</b>	<b>1,742 (-5.0)</b>	<b>324 (-0.9)</b>	<b>2,066</b>
<b>Mental Illness</b>	<b>115,440</b>	<b>13,866 (-39.8)</b>	<b>1,498 (-4.3)</b>	<b>15,364</b>
<b>Catholic</b>	<b>8,840</b>	-	-	-
<b>Living in rural area</b>	<b>10,660</b>	<b>1,637 (-4.7)</b>	-	<b>1,637</b>
<b>Living in a “bad” area</b>	-	-	<b>789 (-2.3)</b>	<b>789</b>
<b>Living in an “indifferent” area</b>	-	-	<b>514 (-1.5)</b>	<b>514</b>
<b>Experience of poverty</b>	-	<b>2,718 (-7.8)</b>	<b>1,947 (-6.0)</b>	<b>4,665</b>
<b>Adverse incident in past year</b>	-	<b>1,150 (-3.3)</b>	-	<b>1,150</b>

\* Calculations from Equation B, Table 4: an additional £20 per week in household income buys an extra 0.4 points of the probability of being “happy”.

\*\* Calculations from Equation B, Table 5 and Table 7: each extra point in the likelihood of being happy costs an additional £6.70 in weekly household income (explanation in text).

Direct effects relate to the presence of the contingencies in the happiness equation. Indirect effects relate to the presence of the contingencies in the SoL satisfaction and/or financial worries equation.