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Do Social Resources Moderate the Negative Association Between Financial Hardship and Life Satisfaction in Ireland?

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Abstract: Financial hardship represents a significant stressor that can have detrimental consequences for individual well-being. Using a large sample from the European Social Survey (n=13,597), this study aims to confirm the negative association between financial hardship and life satisfaction for Ireland, and to test whether a set of personal social resources (social meetings, personal religiosity and political trust) moderate that negative association. The results confirm that financial hardship is negatively associated with life satisfaction. Social resources are directly associated with higher levels of life satisfaction. Meeting socially with others represents the largest effect on individual well-being and is significant in moderating the harmful effects of financial hardship for some individuals. Religiosity and political trust also have significant, positive associations with life satisfaction and are found to buffer against the harmful impact of financial hardship for some individuals. This study has important implications for understanding the correlates of subjective well-being in Ireland.

I INTRODUCTION

Financial hardship often means struggling to pay bills, repay debt and loans when due or meet basic needs such as food, shelter, and healthcare. Individuals who are unable to fulfil these fundamental requirements due to limited financial resources tend to suffer from poor physical or mental health (Diener *et al*., 1999), suicidal behaviour or ideation (Mathieu *et al*., 2022), stress, anxiety or a diminished sense of well-being (Viseu *et al*., 2018). The direct negative association between financial hardship and subjective well-being is established, however less is known about why some individuals suffer to a greater degree from financial strain and others are more resilient to it. Existing evidence suggests that material or immaterial

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resources may, to some extent, protect individuals' well-being from the harmful effects of financial hardship (Annink *et al*., 2016; Reeskens and Vandecasteele, 2017; Visser *et al*., 2014). Social (or immaterial) resources refer to the resources embedded in one's social network and social ties, and individuals can acquire and accumulate these resources through their interactions with friends and family, by participating in formal networks and having confidence and trust in others and the institutions around them. For example, resources acquired through social networks and connections can provide individuals with access to employment opportunities, social support and information that can help them improve their social and economic circumstances. Furthermore, individuals may value social resources as they directly benefit individual well-being (Dolan *et al*., 2008), as well as buffering against life's stressors. It is vital to understand which resources might buffer the effect of financial hardship on subjective well-being as interrupting the loss spiral is likely to improve well-being (Hobfoll, 2001).

The aims of this study are as follows. Firstly, to estimate the association between financial hardship and subjective well-being in Ireland using econometric analysis. Secondly, to test the moderating effect of a set of personal social resources in the association between financial hardship and subjective well-being. Using eight rounds of repeated cross-sectional data from the European Social Survey (ESS) for Ireland, this study uses measures for subjective financial hardship (finding it difficult or very difficult to cope on present household income) and subjective well-being (life satisfaction). Three measures for social resources are used: meeting frequently with friends, relatives and colleagues; personal religiosity; and trustworthiness in the Irish political system. By incorporating these three measures, the analyses estimate the moderating influence of social capital factors on those struggling financially.

According to Diener *et al*. (2003) it is challenging to assess well-being across societies due to the fact that cultural variations can have a significant impact on subjective well-being and single country studies have sought to provide more nuanced findings. Moreover, given varied welfare state supports, the extent to which resources can moderate the impact of financial hardship on well-being is likely to be significantly different between countries and therefore there is merit in focusing on individual countries. Existing research for Ireland to date attempts to establish the factors affecting various dimensions of well-being. For example, earlier studies find negative effects of unemployment on psychological well-being (Whelan, 1992; Hannan *et al*., 1997). Brereton *et al*. (2008a) find that long-term unemployment and part-time employment have negative effects on life satisfaction. Location-specific variables also directly impact life satisfaction in Ireland (Brereton *et al*., 2008b). Madden (2011) finds life satisfaction gains in Ireland from 1994 to 2001, but not to the extent that we might expect during that economically prosperous time. From a regional studies perspective, Moro *et al*. (2008) find variations in well-being across regions in Ireland, and Brereton *et al*. (2011) find high levels of

life satisfaction in rural Ireland. Against the backdrop of the financial crisis, Murphy and Scott (2014) examine the impact of the housing crash on the life satisfaction of rural households, whereas Weckroth *et al*. (2017) analyse life satisfaction from a socio-economic perspective during the economic recession in Ireland. Focusing on a particular group in Irish society, Walsh and Murphy (2021) show life satisfaction of working mothers with children aged five to 12 years to be the lowest among working parents in Ireland. To date, no Irish study has empirically estimated the association between financial hardship and subjective well-being and the potential moderating role of social resources, and this paper aims to fill that gap. The paper utilises several estimation techniques used in the literature, namely OLS and ordered logit. To allow for a differential effect of the covariates in the different outcomes of the ordered dependent variable, the generalised ordered logit model (GOLM) is also estimated.

The rest of the paper proceeds as follows. Section II outlines the theoretical underpinning of this study, relevant literature, and the hypotheses to be tested. Section III describes the European Social Survey data used in this study and the estimation strategy. The results are presented in Section IV. Section V concludes with a discussion of the merits and limitations of the paper.

II LITERATURE REVIEW

The Conservation of Resources (COR) theory explains how individuals strive to acquire, maintain and protect a set of resources in order to cope with stress, prevent burnout, and enhance overall well-being (Hobfoll, 1989). Resources can be defined as anything tangible or intangible that is valued by individuals, such as time, energy, money, skills, advice, information, social influence and emotional support that can be accessed through their social connections and relationships with others (Cobb, 1976; Lin, 1982). COR theory suggests that individuals who have greater access to resources and are better able to protect and acquire them, are more resilient and better equipped to cope with life's challenges. Maintaining a set of personal social resources can lead to positive outcomes, including improved well-being and greater resilience in the face of stress and adversity (Hobfall, 2001).

Social resources are a key component of social capital. Social capital is a multidimensional concept that refers to social norms of reciprocity, social networks and mutual trust (Coleman, 1988; Putnam, 1995). It is through these social norms that individuals can acquire and maintain their personal social resources. According to Granovetter (1973), *structural social capital* describes individuals' interactions with informal networks such as friends and family, as well as participation in formal groups or networks like business, religious or community groups. Trust and trustworthiness, also referred to in the literature as *cognitive social capital*, are central elements of social capital (Coleman, 1988). Trust creates bonds between

people who share fundamental values that ultimately facilitates cooperation and efficiency (Uslaner, 2002). In a measurable sense, trust has been proxied by the degree to which people trust others and the institutions around them.

Both, structural and cognitive social capital are significant determinants of individual well-being (Helliwell, 2006; Helliwell and Putnam, 2004) and have also been shown to reduce the detrimental effects of economic stress (Reeskens and Vandecasteele, 2017). For example, there is strong empirical support for a positive association between frequent contact with family and friends and levels of well-being (Crowley and Walsh, 2021; Helliwell, 2006; Veenhoven, 2015). Moreover, having supportive family, friends, or communities can help individuals navigate challenges, offer support and provide emotional, instrumental, and informational assistance during times of hardship (Reeskens and Vandecasteele, 2017). Participation in a formal group setting is also linked with improvements in subjective well-being. Prior research has shown that increased involvement with religious practice and religious groups is positively and significantly associated with average life satisfaction (Domínguez and López-Noval, 2021). Brereton *et al*. (2011) find attendance at religious services increases the life satisfaction of those living in rural areas of Ireland. Moreover, religious people may draw on their faith and behaviour when faced with a crisis or find support from their religious communities. For example, religiosity has been found to moderate the harmful effects of financial hardship on mental health (Gutierrez *et al*., 2017; Bradshaw and Ellison, 2010), and Koenig (2009) finds that being part of religious structures helps individuals cope with life stressors and can provide support to those faced with financial difficulties. Krause and Hayward (2015) find the effect of financial hardship on self-rated health, mental health and life satisfaction was reduced for individuals who have greater religiosity. Storm (2017) finds, irrespective of income, religious people are more likely to feel economically secure. Having trust in the government, in politicians and political parties may also be considered a social resource and existing evidence finds that trust in institutions such as the European Central Bank, the EU, national government, the law and the UN all impact positively on well-being (Hudson, 2006). Trust is associated with shared norms, values, attitudes, and beliefs that contribute to cooperation (Hudson, 2006; Liang, 2016; Uphoff, 1999). Increased confidence in politics can have a positive well-being effect on those suffering from financial hardship (Reeskens and Vandecasteele, 2017). Finally, Annink *et al*. (2016) find that trust is an important buffering factor against economic hardship for the well-being of the self-employed.

Based on the existing evidence the association between financial hardship and subjective well-being is hypothesised to be negative. Given the multidimensional nature of social capital and supported by the COR theory, the study examines the direct association of three social resources with subjective well-being as well as estimating the potential for these social resources to buffer the harmful effects of financial hardship on well-being. Aligned with its aims, this study tests the following hypotheses:

Hypothesis 1 (H1): Subjective financial hardship is negatively associated with life satisfaction.

Hypothesis 2 (H2): Individual social resources (social meetings, personal religiosity, trust in Irish politics) and life satisfaction are positively associated.

Hypothesis 3 (H3): Social meetings moderate the negative association between financial hardship and life satisfaction.

Hypothesis 4 (H4): Personal religiosity moderates the negative association between financial hardship and life satisfaction.

Hypothesis 5 (H5): Trust in Ireland's political system moderates the negative association between financial hardship and life satisfaction.

III DATA AND ESTIMATION STRATEGY

3.1 Data

To estimate the association between financial hardship and subjective well-being and the moderating role of social resources, data from the Irish component of the European Social Survey (ESS) are employed in this study. The ESS is conducted every two years via face-to-face interviews and the resulting data are captured in what the ESS calls "rounds". A "round" refers to the year in which data were collected and Ireland has participated in all rounds. Respondents are selected by strict random probability and the sample is representative of all persons (aged 15 and over) resident within private households in the State. To boost the sample size for this study, data from eight rounds (Rounds 2 to 9 inclusive) covering the period from 2004 to 2018,[1] are pooled resulting in an analytical sample of 13,597. The data are cross-sectional and pertain to individual respondents rather than households.

Dependent Variable – Life Satisfaction

Subjective well-being is defined as "the various types of evaluations, both positive and negative, that people make of their lives" (Diener, 2006, p.153) and cognitive evaluations of life satisfaction are regularly used to measure it (Diener *et al*., 2003). In this study the dependent variable *life satisfaction* is ascertained from the question in the ESS "All things considered, how satisfied are you with your life as a whole nowadays?". Respondents record a numerical answer on an 11-point Likert scale from 0 to 10, where 0 signifies "extremely dissatisfied" and 10 "extremely satisfied".

Explanatory and Control Variables

The principal explanatory variable is perceived financial hardship. It is measured using the question: "Which of the descriptions on this card comes closest to how

[1] Round 1 is not included given important changes to how variables are measured in subsequent rounds. Round 10 (2020) data were collected during the COVID-19 pandemic at a time of much change to individual circumstances. This round is also not included.

you feel about your household's income nowadays?", with the following response options: "Living comfortably on present income", "Coping on present income", "Finding it difficult on present income", "Finding it very difficult on present income". The dichotomisation of this or similar variables has been employed in the literature (Fusco, 2016; Mühlau, 2014).[2] As per Mühlau (2014), a binary variable for financial hardship is derived where 1 denotes "finding it difficult" or "very difficult" to cope on present income, and 0 represents "living comfortably" or "coping" on present income.

In line with previous well-being studies, the following control variables are included; gender (1 = female, 0 = male), age and age^2 (in years) and education (five categories indicating highest level achieved). As health is an important determinant of subjective well-being (Helliwell, 2003), two self-reported measures for health are included in the specifications. Specifically, individuals are asked if they are hampered in daily activities in any way by any longstanding illness, or disability, infirmity, or mental health problem. A binary variable is created where 1 indicates "yes a lot" or "yes to some extent" and 0 means "no". A measure for subjective general health is also included with categories indicating general health is "very good", "good", "fair", "bad/very bad". Variables are included to control for; number of children (four dummy variables for "no children", "1 child", "2 children", "3 or more children"), marital status (five dummy variables for "married/legal partnership", "separated", "divorced", "widowed" and "never married"), employment status (3 dummy variables for "in paid work", "unemployed", "out of the labour force"). Income is measured as deciles of the total household net income.[3]

Moderator Variables – Social Resources

Social Meetings

In line with COR Theory, interacting with others and having strong social support can present opportunities that may help individuals cope in times of adversity (Hobfoll, 2001). Given that individuals facing financial difficulties may have limited access to recreational activities and social events due to their financial circumstances, the variable that assesses meeting with friends, relatives or colleagues is chosen over one that asks individuals about their involvement in activities. Frequency of meeting with friends, relatives or colleagues is used as a proxy for social support (Bøe *et al*., 2017) and taken from the following question:

[2] Fusco (2016) dichotomise (0,1) the following question "Thinking of your household's total income, is your household able to make ends meet, namely, to pay for its usual necessary expenses: 1. With great difficulty; 2. With difficulty; 3. With some difficulty; 4. Fairly easily; 5. Easily; 6. Very easily".

[3] In Rounds 2 (2004) and 3 (2006) the ESS used different measures of income deciles that are not directly comparable with later rounds. After Round 4 the ESS utilised deciles pertaining to income distributions within each country. Similar to Hamplová (2019) and Storm (2017) the ESS2 and ESS3 income values were imputed (full code available from author on request).

"How often do you meet socially with friends, relatives or work colleagues?", with the following responses; "Never", "Less than once a month", "Once a month", "Several times a month", "Once a week", "Several times a week", and "Every day". Following Rodríguez-Pose and Burlina (2021) and Mogi and Spijker (2022) a dichotomous variable for frequent social meetings is created where 1 represents those that meet socially with others at least once a week, 0 less frequently.

Personal Religiosity

Religiosity is a term that refers to individual religious beliefs and practices (Domínguez and López-Noval, 2021; Christiano, 2001). It can have both a personal dimension (beliefs and private religious practice such as prayer) and a social-institutional dimension (attending religious services) (Helliwell, 2003). As personal religiosity is a multidimensional construct (Stark and Glock, 1968) an index is constructed using measures for institutional religious practice, non-institutional religious practice and subjective religiosity (Jung, 2018). The social-institutional aspect of religiosity is measured as the individual's frequency of attendance at religious services from the question: "Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?' with the following responses: "Every day", "More than once a week", "Once a week", "At least once a month", "Only on special holy days", "Less often", and "Never". Non-institutional religious practice is taken from a question asking respondents how often they pray apart from at religious services. The seven categorical responses range from "Every day" to "Never". Finally, a subjective evaluation of an individual's religiosity is measured by asking respondents to rate "How religious are you?" on a scale from 0 "not at all religious" to 10 "very religious".[4] Given the ordinal nature of these three measures, factor analysis with polychoric correlations is used in which the three items load on to a single factor for the variable measuring personal religiosity. The three personal religiosity items demonstrated satisfactory internal consistency ($\alpha = .83$).

Trust in the Irish Political System:

Prior research has shown that political trust is a strong predictor of life satisfaction (Bjørnskov *et al*., 2010; Helliwell, 2006; Helliwell and Huang, 2008) and Clench-Aas and Holte (2021) find political trust modifies the associations between income and life satisfaction. To test the direct association between political trust and life satisfaction, as well as its potential to be an important buffer against the ill-effects of economic hardship, an index variable for Trust in Irish Politics is constructed based on a three-item measure (OECD, 2017). Respondents to the ESS survey are asked to indicate how much they personally trust each of the following:

[4] Jung's (2018) subjective measure is based on a question asking respondents to rate how important religion is in their lives, but the other two measures are exactly the same.

Dáil Eireann (Ireland's parliament), Politicians, and Political parties and answers range from 0 = "No trust at all" to 10 = "Complete trust". Principal component analysis finds the three items are strongly related to one another and load onto a single factor. The reliability of the Trust in Irish politics scale reached conventional levels of acceptability (α = .87).

3.2 Estimation Strategy

The life satisfaction dependent variable has 11 numerical response categories (from 0 to 10) and is strictly an ordinal variable, as individuals' responses can be ordered from lowest to highest. However, the differences in response values, and their ratios, are not well-defined. Existing studies tend to use three empirical methods based on how they treat this life satisfaction variable. These comprise treating life satisfaction as a cardinal variable and estimating an OLS model; treating it as an ordinal variable and estimating a proportional odds model or ordered logit/probit model; or adopting the generalised ordered logit/probit model. Estimation via OLS may lead to biased estimates as it treats life satisfaction as a cardinal variable, of which it is strictly not. There may also be some serious shortcomings in using the ordered logit model, specifically when the assumption of proportional odds or parallel-lines is violated. The parallel-lines assumption requires the β coefficients are the same for each value of the dependent variable (j). Violation of this assumption can be confirmed using a Brant test following the ordered logit estimation. The Generalized Ordered Logit Model is a suitable alternative when the ordered logit model violates the parallel-lines assumption (Williams, 2006). This is because it is less restrictive than proportional odds or ordered logit model as it takes into account the fact that one or more coefficients can differ across categories of the dependent variable. The Generalised Ordered Logit Model (GOLM) can be estimated using the "gologit2" programme in Stata 18[5] (Williams, 2006). The model is specified as:

$$P_{ij} = \Pr(Y_i > j) = g(X\beta_j) = \frac{\exp(\alpha_j + X_i\beta_j)}{1 + \{\exp(\alpha_j + X_i\beta_i)\}}, j = 0, 1, \ldots, M-1 \qquad (1)$$

where α_j are the intercepts, β_j are the logit coefficients and M is the number of categories. The GOLM estimates the odds of being beyond a certain category relative to being in or below that category. According to Williams (2006) the GOLM overcomes the parallel-lines assumption that is violated in most standard ordered logit analyses. Further, the GOLM ascertains the violation of the assumption in the model. The outcome of the GOLM is stated as a partial proportional model as follows:

[5] It is estimated using maximum likelihood estimators with an autofit option set at the 1 per cent level.

$$\Pr(Y_i > j) = \frac{\exp(\alpha_j + X_{1i}\beta_1 + X_{2i}\beta_2 + X_{3i}\beta_{3j})}{1 + \{\exp((\alpha_j + X_{1i}\beta_1 + X_{2i}\beta_2 + X_{3i}\beta_{3j}))\}}, \; j = 0, 1, \ldots, M-1 \quad (2)$$

In the specification of Equation 2 some of the parameter estimates (β_s) differ across levels of j and some are constant. The general life satisfaction model is specified as:

$$LS_{ij} = \alpha_0 + \beta_1 FH_i + \beta_2 SR_i + \beta_3 Z_i + \beta_4 T_i + \mu_i \quad (3)$$

where LS_{ij} is the life satisfaction ranked j by individual i, FH_i is the financial hardship reported by individual i, Z_i is a vector of personal and socio-economic characteristics of individual i and T captures the round/year and μ is the error term. The GOLM model estimates the likelihood of being beyond a certain category (higher life satisfaction category) relative to being at or below that category (lower life satisfaction category). Therefore, positive coefficients indicate that higher values on the explanatory variable make it more likely that the respondent will be in a higher category of life satisfaction than the current one, whereas negative coefficients indicate that higher values on the explanatory variable increase the likelihood of being in the current or a lower category (Williams, 2006). The reported estimates in the analysis are odds ratios obtained after the GOLM estimation where the exponential function of the regression coefficient is reported, that is e^b rather than b, and is the odds ratio associated with a one unit increase in the explanatory variable. It was not possible to estimate the GOLM using the original 11 categories of the dependent variable due to the fact that only 2 per cent of the sample of individuals reported life satisfaction 3 or below. Therefore, response categories 0, 1, 2 and 3 were regrouped into a single category (Budria, 2013). The ordered categories in the estimated models are therefore 0-3, 4, 5, 6, 7, 8, 9 and 10.

To test hypotheses H1 and H2, two models are estimated. Model 1 estimates the association between financial hardship and life satisfaction controlling for a set of personal and socio-economic characteristics (H1). Model 2 includes three social resource variables (social meetings, personal religiosity and trust in politics) to estimate their association with life satisfaction (H2). For comparability, and in line with most existing well-being research, the models are initially estimated using OLS and ordered logit regression techniques (Ferrer-i-Carbonell and Frijters, 2004). A Brant test of the parallel-lines assumption in the ordered logit models is conducted (Brant, 1990) and the GOLM is used thereafter. Importantly, to test if those in financial hardship *but with* these social resources are associated with higher levels of life satisfaction (H3, H4 and H5), interaction terms are added to the final three models (Models 3-5) and estimated using the GOLM. As the interaction effects cannot be inferred from the model estimates in nonlinear models such as GOLM, a post-estimation command is used to compute the correct interaction effects (Radean, 2023).

The ESS strongly recommends the use of weights to reduce sampling error and potential non-response bias (Kaminska, 2020), and therefore survey weights are applied to the regressions in this study.

IV RESULTS

Table 1 presents the descriptive statistics. Overall, the mean value for life satisfaction is 7.14 (std. dev. 2.04). Financial hardship is reported by 20 per cent of the sample. With regard to social meetings, 63 per cent of respondents meet socially with others at least once a week. The original variables for personal religiosity indicate the modal category for attendance at religious services is "once a week" representing 30 per cent of the sample, 35 per cent of respondents state they pray "every day" and the mean for "how religious are you?" is 5.06 on a 0-10 scale. The mean for the original variable capturing "trust in Dáil Éireann" (Irish parliament) is 4.18 on a scale from 0 to 10 (Std dev. 2.45). Similarly, the means for the original "trust in politicians" and "trust in political party" variables are 3.52 and 3.51 respectively, again on 0-10 scales. The mean age of individuals is 43 years and 51 per cent are female. Paid work is undertaken by 47 per cent of the sample, 9 per cent are unemployed and 44 per cent are out of the labour force. In terms of educational attainment, 2 per cent have no education, while 9 per cent have completed primary school only. Second level education has been attained by 45 per cent of respondents, while 42 per cent have a post-secondary or third level qualification. About 52 per cent are married or in a partnership, 39 per cent have never married, 4 per cent are widowed and 4 per cent are separated or divorced; 30 per cent of respondents are parents. Illness hampers the daily activities of 15 per cent of respondents. In terms of self-assessed general health, 43 per cent report their general health as very good, 41 per cent say their health is good, and 16 per cent report their health is fair, bad or very bad.

Figure 1 illustrates the means of life satisfaction, over the period 2004 to 2018, for those suffering financial hardship and those not experiencing financial hardship. The assertion that the group means are equal is rejected as the life satisfaction means for those suffering from financial hardship and those not suffering financial hardship are significantly different ($p < 0.001$). Trends in both life satisfaction and financial hardship broadly reflect the variability in the performance of the Irish economy during this time period.

Table 2 displays the results from the OLS and ordered logit regression models estimating the associations with life satisfaction. Odds ratios from the ordered logit estimations are also reported. When a dependent variable has many categories, odds ratios are useful to compare people who are in groups greater than *j* (life satisfaction response category) to those who are in groups less than or equal to *j*. The results of the ordered logit and OLS models do not differ significantly. As expected,

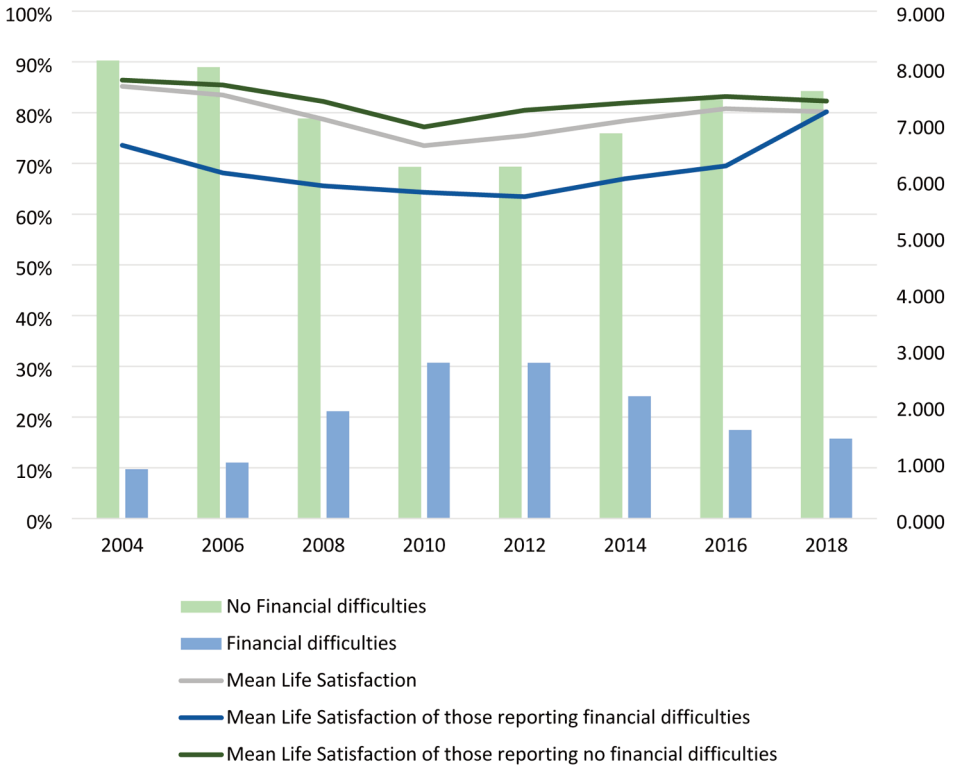
Table 1: Summary Statistics of Variables

Variable	*Mean/%*	*Std. Dev*	*Min*	*Max*
Life Satisfaction	7.14	2.04	0	10
Financial Hardship	20%	0.40	0	1
Social Meetings	63%	0.48	0	1
Personal Religiosity	–0.12	0.99	–1.96	1.73
Attend religious service	4.53	1.67	1	7
Pray	3.38	2.34	1	7
How religious	5.05	2.70	0	10
Trust in Irish Political System	0.01	0.99	–1.72	2.93
Trust in Dail Eireann	4.20	2.42	0	10
Trust in Politicians	3.51	2.34	0	10
Trust in Political Parties	3.50	2.27	0	10
Age	43.63	17.84	15	101
Female	51%	0.50	0	1
In paid work	47%	0.50	0	1
Unemployed	9%	0.28	0	1
Out of labour force	44%	0.50	0	1
No education	2%	0.15	0	1
Primary education	9%	0.29	0	1
Secondary education	45%	0.50	0	1
Post-secondary education	21%	0.41	0	1
Tertiary education	21%	0.41	0	1
Income	4.93	2.74	1	10
Married	52%	0.50	0	1
Separated	2%	0.15	0	1
Divorced	2%	0.14	0	1
Widowed	4%	0.21	0	1
Never married	39%	0.49	0	1
No children	70%	0.46	0	1
One child	11%	0.32	0	1
Two children	11%	0.31	0	1
Three children +	7%	0.26	0	1
Health hampered	15%	0.36	0	1
Very good health	43%	0.49	0	1
Good health	41%	0.49	0	1
Fair health	13%	0.34	0	1
Very bad/bad health	3%	0.16	0	1

Source: Author's own analysis of ESS data. Survey weights applied.[6]

[6] https://www.europeansocialsurvey.org/methodology/ess-methodology/data-processing-and-archiving/weighting.

Figure 1: Financial difficulties and Life Satisfaction in Ireland. ESS Data 2004–2018



Source: Author's own analysis of ESS data.

Model 1 finds a significant, negative association between financial hardship and life satisfaction, thus supporting hypothesis H1. Compared with those not in financial hardship, the odds of moving to a lower life satisfaction category are significantly higher for those experiencing financial hardship, by as much as 55 per cent ($p < 0.001$), *ceteris paribus*. Model 2 tests the direct associations between life satisfaction and the three social resource variables; social meetings, personal religiosity and political trust. The results suggest a significant and positive association between increased social meetings and life satisfaction. The odds of moving to a higher life satisfaction category is 58 per cent higher for those with more frequent social meetings ($p < 0.001$), *ceteris paribus*. The results further suggest a positive association between personal religiosity and life satisfaction. A 1-unit increase in personal religiosity leads to a 16 per cent increase in the odds of moving to a higher life satisfaction category (versus all lower ones). Finally, the results also suggest political trust and life satisfaction are positively correlated. A 1-unit increase in political trust raises the probability of being in a higher set of

Table 2: Estimates of Life Satisfaction using OLS and Ordered Logit (ologit)

	Model 1			*Model 2*		
	OLS	*Ologit*	*Ologit*	*OLS*	*Ologit*	*Ologit*
	Coeff (Robust SE)	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*	*Coeff (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*
Financial Hardship	–0.804*** (0.053)	–0.800*** (0.053)	0.449*** (0.024)	–0.741*** (0.054)	–0.745*** (0.055)	0.475*** (0.026)
Social Meetings				0.470*** (0.037)	0.458*** (0.038)	1.581*** (0.061)
Personal Religiosity				0.140*** (0.021)	0.153*** (0.022)	1.165*** (0.025)
Trust in Politics				0.195*** (0.019)	0.194*** (0.021)	1.214*** (0.026)
Age	–0.061*** (0.007)	–0.062*** (0.007)	0.940*** (0.007)	–0.051*** (0.007)	–0.053*** (0.007)	0.948*** (0.007)
Age^2	0.007*** (0.001)	0.008*** (0.001)	1.008*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	1.006*** (0.001)
Female	0.080** (0.036)	0.093** (0.037)	1.097** (0.041)	0.073* (0.038)	0.086** (0.039)	1.090** (0.042)
Education *(Ref: Second Level Education)*						
No Education	–0.036 (0.121)	–0.036 (0.133)	0.964 (0.128)	0.000 (0.119)	0.017 (0.132)	1.017 (0.134)
Primary Education	0.030 (0.065)	0.020 (0.069)	1.020 (0.070)	0.030 (0.064)	0.016 (0.070)	1.016 (0.071)
Post-Secondary Education	0.025 (0.047)	0.017 (0.047)	1.017 (0.048)	0.021 (0.047)	0.006 (0.049)	1.006 (0.049)
Tertiary Education	0.051 (0.047)	0.027 (0.048)	1.027 (0.049)	0.014 (0.048)	–0.018 (0.050)	0.982 (0.049)
Work status (Ref: in paid work)						
Unemployed	–0.504*** (0.079)	–0.480*** (0.079)	0.619*** (0.049)	–0.516*** (0.080)	–0.496*** (0.081)	0.609*** (0.049)
Out of the Labour Force	0.142** (0.045)	0.167*** (0.046)	1.182*** (0.054)	0.124** (0.046)	0.146** (0.047)	1.158** (0.055)
Household Income	0.141*** (0.035)	0.130*** (0.036)	1.139*** (0.041)	0.125*** (0.036)	0.119** (0.038)	1.127** (0.042)

Table 2: Estimates of Life Satisfaction using OLS and Ordered Logit (ologit) (Contd.)

	OLS	*Model 1 Ologit*	*Ologit*	*OLS*	*Model 2 Ologit*	*Ologit*
	Coeff (Robust SE)	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*	*Coeff (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*
Parental status (Ref: no children)						
One Child	0.005	0.009	1.009	0.065	0.067	1.070
	(0.057)	(0.057)	(0.058)	(0.058)	(0.059)	(0.063)
Two Children	–0.018	–0.016	0.984	0.035	0.027	1.028
	(0.061)	(0.061)	(0.060)	(0.061)	(0.063)	(0.065)
Three Children	0.107	0.095	1.100	0.180**	0.167**	1.181**
	(0.071)	(0.071)	(0.078)	(0.072)	(0.073)	(0.087)
Marital status (Ref: married/partnership)						
Separated	–0.673***	–0.675***	0.509***	–0.650***	–0.666***	0.514***
	(0.103)	(0.106)	(0.054)	(0.103)	(0.108)	(0.056)
Divorced	–0.209*	–0.176*	0.839*	–0.116	–0.087	0.917
	(0.108)	(0.106)	(0.089)	(0.110)	(0.111)	(0.101)
Widowed	–0.452***	–0.481***	0.618***	–0.475***	–0.514***	0.598***
	(0.075)	(0.078)	(0.048)	(0.074)	(0.079)	(0.047)
Never Married	–0.311***	–0.318***	0.728***	–0.302***	–0.314***	0.731***
	(0.050)	(0.050)	(0.036)	(0.051)	(0.051)	(0.038)
Health is Hampered	–0.180**	–0.154**	0.857**	–0.147**	–0.140**	0.870**
	(0.059)	(0.061)	(0.053)	(0.059)	(0.062)	(0.054)
Health Status: (Ref: Very Good Health)						
Good Health	–0.513***	–0.540***	0.583***	–0.494***	–0.531***	0.588***
	(0.039)	(0.040)	(0.023)	(0.039)	(0.041)	(0.024)
Fair Health	–1.000***	–1.042***	0.353***	–0.898***	–0.959***	0.383***
	(0.065)	(0.067)	(0.024)	(0.066)	(0.069)	(0.027)
Vbad/bad Health	–1.579***	–1.680***	0.186***	–1.498***	–1.595***	0.203***
	(0.128)	(0.135)	(0.025)	(0.125)	(0.136)	(0.028)
Year dummies included	Yes	Yes	Yes	Yes	Yes	Yes
N	13,597	13,597	13,597	12,947	12,947	12,947

Table 2: Estimates of Life Satisfaction using OLS and Ordered Logit (ologit) (Contd.)

	OLS	*Model 1 Ologit*	*Ologit*	*OLS*	*Model 2 Ologit*	*Ologit*
	Coeff (Robust SE)	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*	*Coeff (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio (Robust SE)*
R^2/Pseudo R^2	0.185	0.05	0.050	0.217	0.059	0.059
Brant Test		$\chi^2 = 687.4$ $p = 0.000$			$\chi^2 = 816.1$ $p = 0.000$	

Source: Author's analysis of ESS data (pooled 2004 – 2018).
Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.001$, survey weights applied, cut points for ologit models available from the author, year dummies are included but not reported here. The reference categories are male, second-level education, in paid work, married, very good health, Round 2 (2004).

life satisfaction categories (versus all lower ones) by 21 per cent. All three social resource variables are associated with increasing life satisfaction and display strong statistical significance ($p < 0.001$) even after controlling for personal and socio-economic variables. Meeting socially with others has the highest odds of moving an individual to a higher life satisfaction category. Hypothesis H2 is therefore not rejected. As with previous research estimating the factors affecting subjective well-being (Ferrer-i-Carbonell and Frijters, 2004) this study finds no significant difference between the OLS and ordered logit regression results. The OLS estimates find support for hypotheses H1 and H2.

The Brant test results for Model 1 ($\chi^2 = 687.4$, $p = 0.000$) and Model 2 ($\chi^2 = 816.1$, $p = 0.000$), estimated via ologit, indicate that the proportional odds assumption is violated in both models (see Table 2). Independent variables that violate the Brant test include; social meetings, political trust, female, no education, primary education, tertiary education, unemployed, income, health is hampered, good health, fair health and very bad health.[7] Violation of the proportional odds assumption leads to the use of the GOLM that relaxes the proportionality assumption by allowing the logit effects of independent variables to vary across cut points which dichotomise the underlying dependent variable. Table 3 presents

[7] It should be noted that the test of the proportional odds assumption has been described as "anti-conservative" because it nearly always results in rejection of the proportional odds assumption (O'Connell, 2006, p.29) particularly when the number of independent variables is large (Brant, 1990) or the sample size is large (Kim, 2003) or there is a continuous independent variable in the model (Allison, 1999).

the results of Model 2 re-estimated using the GOLM. For comparability within this paper, the table lists the odds ratios as well as the coefficients and associated standard errors.

Table 3: Generalised Ordered Logit Results – Model 2

		Coeff (Robust SE)	*ORa (Robust SE)*
Financial Hardship		–0.691*** (0.052)	0.501*** (0.026)
Meetings[v]	I	0.680*** (0.084)	1.974*** (0.167)
	II	0.594*** (0.069)	1.812*** (0.124)
	III	0.554*** (0.054)	1.739*** (0.093)
	IV	0.517*** (0.048)	1.677*** (0.081)
	V	0.414*** (0.045)	1.513*** (0.068)
	VI	0.359*** (0.051)	1.432*** (0.074)
	VII	0.303*** (0.070)	1.354*** (0.095)
Religiosity		0.149*** (0.022)	1.161*** (0.026)
Political Trust[v]	I	0.513*** (0.052)	1.670*** (0.086)
	II	0.399*** (0.038)	1.490*** (0.057)
	III	0.340*** (0.030)	1.405*** (0.042)
	IV	0.296*** (0.027)	1.345*** (0.036)
	V	0.198*** (0.024)	1.219*** (0.030)
	VI	0.086** (0.028)	1.090** (0.030)
	VII	–0.015 (0.036)	0.986 (0.036)
Controls		Yes	
N		12,947	
Pseudo R^2		0.073	

Source: Author's analysis of ESS data (pooled 2004 – 2018).

Notes: [a]Exponentiated coefficients; standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.001$. OR: Odds Ratio; SE Standard Error. Variables denoted with superscript "v" violated the parallel-lines assumption.

I – life satisfaction levels 0-3 (0, 1, 2, 3) compared to 4, 5, 6, 7, 8, 9 and 10.
II – life satisfaction levels 0-3 and 4 compared to 5, 6, 7, 8, 9 and 10.
III – life satisfaction levels 0-3, 4 and 5 compared to 6, 7, 8, 9 and 10.
IV – life satisfaction levels 0-3, 4, 5 and 6 compared to 7, 8, 9 and 10.
V – life satisfaction levels 0-3, 4, 5, 6 and 7 compared to 8, 9 and 10.
VI – life satisfaction levels 0-3, 4, 5, 6, 7 and 8 compared to 9 and 10.
VII – life satisfaction levels 0-3, 4, 5, 6, 7, 8 and 9 compared to 10.

The model includes the full set of control variables for age, gender, education, employment status, income, children, marital status, health is hampered, health status and round/time. Full model is available in Table A.1 the Appendix.

The financial hardship variable meets the parallel-lines assumption, and the coefficient is therefore correctly restricted across the GOLM ($\beta = –0.691$, $p < 0.001$).

The result suggests that suffering from financial hardship increases the likelihood that the individual will be in the current category of life satisfaction or a lower one. The corresponding odds ratio shows that suffering from financial hardship increases the odds of an individual reporting a lower life satisfaction category by about 50 per cent. Personal religiosity also meets the parallel-lines assumption, and the coefficient is the same across the model ($\beta = 0.149$, $p < 0.001$). There is a significant, positive association between personal religiosity and life satisfaction. An increase in personal religiosity makes it more likely that the respondent will be in a higher category of life satisfaction than the current one. The odds ratio suggests a 1-unit increase in personal religiosity raises the probability of being in a higher life satisfaction category (versus all lower ones) by 16 per cent. The "social meetings" and "political trust" variables violate the parallel-lines assumption, and the coefficients are different across the equation (*j*s). There is a significant, positive association between frequent social meetings and life satisfaction. The GOLM coefficients show the strongest effects of social meetings on life satisfaction are found at the lowest levels of life satisfaction. The odds ratios confirm this as they range from 1.974 (for life satisfaction levels 0-3 compared to 4, 5, 6, 7, 8, 9 and 10) to 1.354 (life satisfaction levels 0-3, 4, 5, 6, 7, 8 and 9 compared to 10). This means that the odds of rating life satisfaction 4 and above are about 97 per cent higher for those with frequent social meetings. The odds of rating life satisfaction a 10 (versus 9 and under) is about 35 per cent higher for those with frequent social meetings. The GOLM coefficients suggest a positive, significant association between political trust and life satisfaction in all response categories, except category 9 which is insignificant. The odds ratios show stronger effects on the lower life satisfaction categories compared to higher categories. For example, for a one-unit increase in political trust the odds of reporting life satisfaction 0-3 is about 67 per cent higher (OR 1.67, $p<0.001$). For those in categories 8 and under, for a one-unit increase in political trust the odds of reporting higher life satisfaction (a 9 or a 10) increase by 9 per cent. Estimating the model via GOLM confirms the ordered logit and OLS results in Table 2 and provides further support for hypotheses H1 and H2.

Models 3, 4 and 5 include interaction terms to estimate the moderating effects of social resources on the established negative association between financial hardship and life satisfaction. However, in nonlinear models, care should be exercised when computing and interpreting the effect of interaction terms (Norton *et al*., 2004). Crucially, the coefficients on the interaction terms in the estimated GOLM Models 3, 4 and 5 in Table 4, should not be directly interpreted (Ai and Norton, 2003) and further analysis is needed to test if social meetings, personal religiosity and political trust moderate the harmful effects of financial hardship on life satisfaction (H3, H4 and H5). Consequently, the Stata command "ginteff" is used to compute the correct interaction effects and "ginteffplot" to graph the results (Radean, 2023).

Table 4: Generalised Ordered Logit Results – Models 3-5

		Model 3			*Model 4*			*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Financial hardship		–0.751***	0.472***		–0.688***	0.503***		–0.682***	0.505***
		(0.070)	(0.033)		(0.053)	(0.027)		(0.054)	(0.027)
Social Meetings[v]	I	0.810***	2.248***	I	0.680***	1.974***	I	0.680***	1.975***
		(0.115)	(0.258)		(0.084)	(0.167)		(0.085)	(0.167)
	II	0.663***	1.941***	II	0.594***	1.812***	II	0.595***	1.813***
		(0.088)	(0.171)		(0.069)	(0.124)		(0.069)	(0.125)
	III	0.548***	1.730***	III	0.554***	1.740***	III	0.554***	1.740***
		(0.064)	(0.110)		(0.054)	(0.093)		(0.054)	(0.093)
	IV	0.493***	1.637***	IV	0.517***	1.677***	IV	0.517***	1.677***
		(0.055)	(0.091)		(0.048)	(0.081)		(0.048)	(0.081)
	V	0.405***	1.500***	V	0.414***	1.513***	V	0.414***	1.513***
		(0.049)	(0.073)		(0.045)	(0.068)		(0.045)	(0.068)
	VI	0.325***	1.384***	VI	0.359***	1.432***	VI	0.359***	1.432***
		(0.054)	(0.075)		(0.051)	(0.074)		(0.051)	(0.074)
	VII	0.257***	1.294***	VII	0.303***	1.353***	VII	0.303***	1.354***
		(0.073)	(0.094)		(0.070)	(0.095)		(0.070)	(0.095)
Religiosity		0.149***	1.161***		0.145***	1.156***		0.149***	1.161***
		(0.022)	(0.026)		(0.024)	(0.028)		(0.022)	(0.026)
Political Trust[v]	I	0.497***	1.644***	I	0.512***	1.668***	I	0.500***	1.649***
		(0.052)	(0.086)		(0.052)	(0.086)		(0.053)	(0.088)
	II	0.390***	1.477***	II	0.398***	1.489***	II	0.387***	1.473***
		(0.039)	(0.057)		(0.038)	(0.057)		(0.041)	(0.061)
	III	0.338***	1.403***	III	0.339***	1.404***	III	0.330***	1.391***
		(0.030)	(0.043)		(0.030)	(0.042)		(0.033)	(0.046)

Table 4: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Political Trust	IV	0.296***	1.344***	0.296***	1.344***	0.288***	1.334***
		(0.027)	(0.036)	(0.027)	(0.036)	(0.029)	(0.039)
	V	0.197***	1.218***	0.198***	1.219***	0.192***	1.211***
		(0.024)	(0.030)	(0.024)	(0.030)	(0.026)	(0.032)
	VI	0.088**	1.092**	0.086**	1.090**	0.181**	1.085**
		(0.028)	(0.030)	(0.028)	(0.030)	(0.029)	(0.031)
	VII	–0.010	0.990	–0.014	0.986	–0.019	0.981
		(0.037)	(0.036)	(0.036)	(0.036)	(0.037)	(0.036)
Financial Hardship x Social Meetings[v]	I	–0.232	0.793				
		(0.157)	(0.124)				
	II	–0.110	0.896				
		(0.129)	(0.115)				
	III	0.066	1.068				
		(0.105)	(0.112)				
	IV	0.134	1.143				
		(0.101)	(0.116)				
	V	0.092	1.096				
		(0.102)	(0.112)				
	VI	0.266	1.305				
		(0.115)	(0.150)				
	VII	0.363	1.437				
		(0.142)	(0.203)				

Table 4: Generalised Ordered Logit Results – Models 3-5 (Contd.)

	Model 3		*Model 4*		*Model 5*	
	Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Financial Hardship x Personal Religiosity			0.019 (0.048)	1.019 (0.049)		
Financial Hardship x Political Trust					0.034 (0.053)	1.035 (0.054)
Controls	Yes		Yes		Yes	
N	12,947		12,947		12,947	
Pseudo R^2	0.074		0.073		0.074	

Source: Author's analysis.

Notes: [a]Exponentiated coefficients; standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.001$.

OR: Odds Ratio; SE Standard Error. Variables denoted with superscript "v" violated the parallel-lines assumption. Full model is presented in Table A.2 the Appendix.

I – life satisfaction levels 0-3 (0, 1, 2, 3) compared to 4, 5, 6, 7, 8, 9 and 10.

II – life satisfaction levels 0-3 and 4 compared to 5, 6, 7, 8, 9 and 10.

III – life satisfaction levels 0-3, 4 and 5 compared to 6, 7, 8, 9 and 10.

IV – life satisfaction levels 0-3, 4, 5 and 6 compared to 7, 8, 9 and 10.

V – life satisfaction levels 0-3, 4, 5, 6 and 7 compared to 8, 9 and 10.

VI – life satisfaction levels 0-3, 4, 5, 6, 7 and 8 compared to 9 and 10.

VII – life satisfaction levels 0-3, 4, 5, 6, 7, 8 and 9 compared to 10.

The average interaction effects between financial hardship and each of the three social resources on life satisfaction are computed separately for each category of the dependent variable and these results are presented graphically in Figure 2.

Figure 2: Average Interaction Effects (AIE) between Financial Hardship and Social Resources on Life Satisfaction

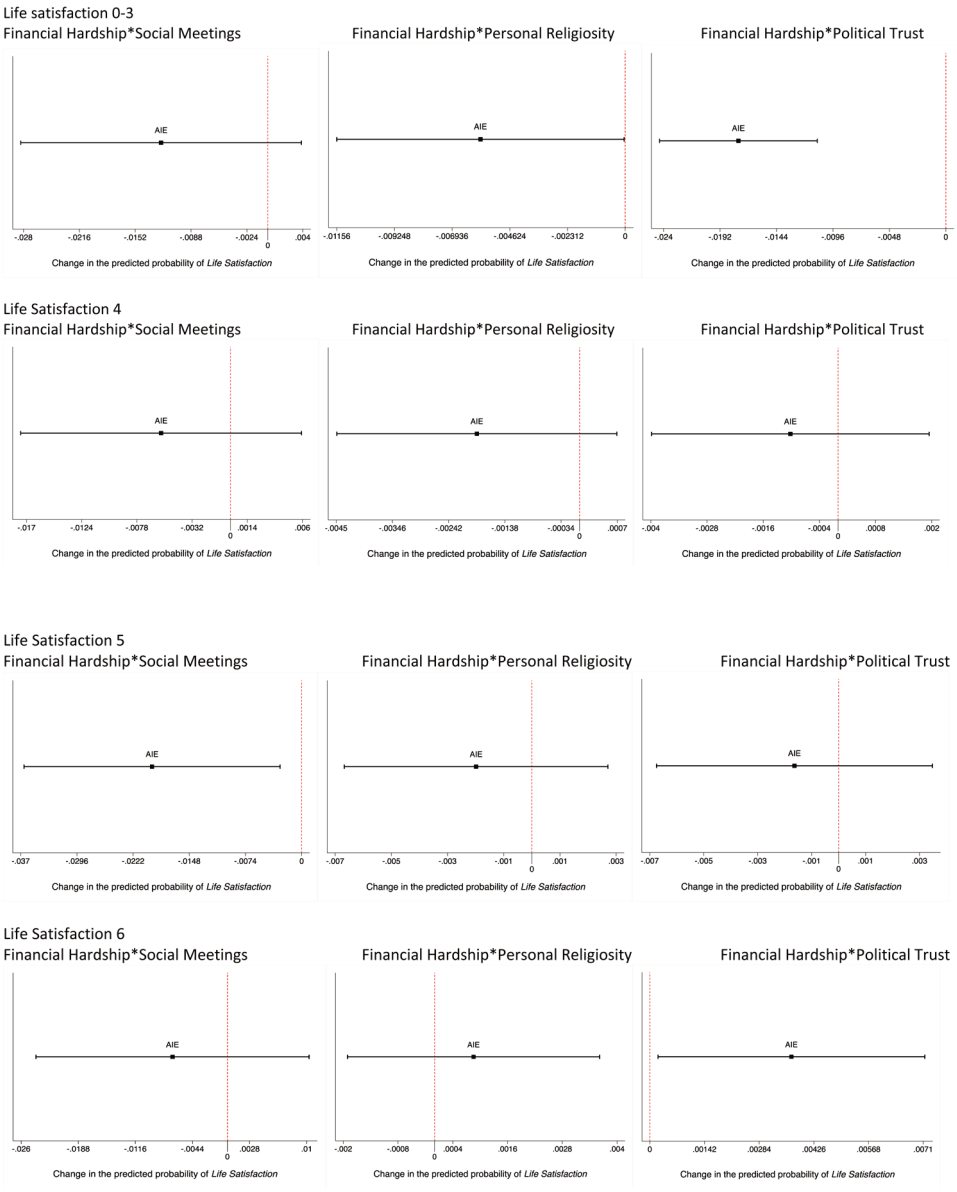
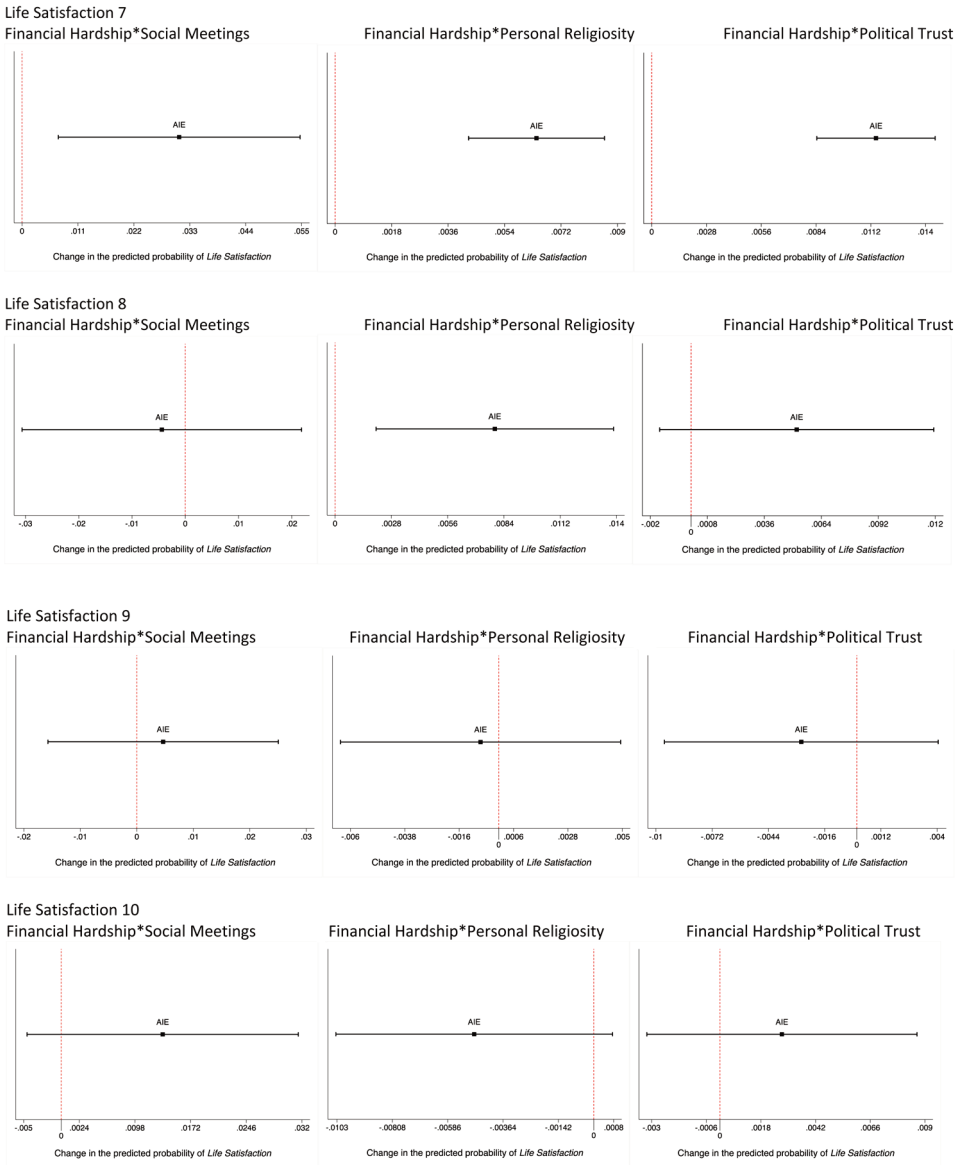


Figure 2: Average Interaction Effects (AIE) between Financial Hardship and Social Resources on Life Satisfaction (Contd.)



Source: Author's analysis.

The graphs in Figure 2 show the average interaction effects (AIE) and 90 per cent confidence intervals for the three interaction variables (financial hardship x social meetings, financial hardship x personal religiosity, financial hardship x political trust) grouped by each life satisfaction outcome. Confidence intervals

containing 0 are statistically insignificant. There are eight significant effects to be examined. Firstly, those in financial hardship with social meetings are less likely to report life satisfaction as a 5 (–0.020 [–0.037 –0.003]) and more likely to report life satisfaction category 7 (0.031 [0.007. 0.055]), compared to those with no social meetings. Individuals suffering from financial hardship but with greater personal religiosity are less likely to report 0 to 3 on the life satisfaction scale (–0.006 [–0.012. 0.000]) and more likely to report their life satisfaction as a 7 (0.006 [0.004 0.009]) or an 8 (0.008 [0.002 0.014]), compared to those with lower personal religiosity. Finally, those in financial difficulty with greater political trust are less likely report the lowest 0 to 3 life satisfaction category (–0.018 –0.024 –0.011]) and more likely to report life satisfaction as a 6 (0.004 [0.000 0.007] or a 7 (0.011 [0.008 0.014]), compared to those with lower political trust. These results suggest some moderating effects of the three social resources examined in this study finding partial support for H3, H4 and H5.

To check the sensitivity of the results Model 2 is estimated using a variable that captures partaking in social activities compared to others of the same age captured across five responses ("much less than most", "less than most", "about the same as most", "more than most", "much more than most"). The results suggest that more frequent engagement in social activities is positively and significantly associated with life satisfaction. As with social meetings, the moderating effect of social activities on financial hardship is positive and significant for those reporting life satisfaction as a 7. It should be noted that a very small number of individuals in financial hardship are involved in activities more than most people of the same age (9.6 per cent of those in financial hardship) or much more than most people of the same age (2 per cent of those in financial hardship). Sensitivity analysis was conducted on the choice to dichotomise the social meetings variable by changing the categories representing "low" social meetings, finding that the main results are still highly consistent. Further sensitivity analysis has been conducted to assess the validity of the results on personal religiosity. Models 2 and 5 are re-estimated using a variable on how often an individual attends religious services apart from special occasions (religious attendance) that is more likely to capture the religious network effect and the moderating effect on the negative association between financial hardship and life satisfaction. The results are consistent with the main estimation results and interaction effects.

V CONCLUSIONS

The main aim of this paper was to confirm that a negative association between financial hardship and life satisfaction exists in Ireland. A further aim was to examine if the presence of a set of personal social resources could moderate that negative impact of financial hardship on life satisfaction. The analysis was

undertaken using data from the European Social Survey (2004-2018) and a sample of over 13,000 individuals living in Ireland. After controlling for a set of personal and socio-economic characteristics, the econometric analyses confirmed, as expected, that financial hardship has a significant, negative association with individual life satisfaction. The presence of personal social resources, namely social meetings with friends, relatives and colleagues, personal religiosity and political trust are important correlates of life satisfaction confirming earlier research (Dolan *et al*., 2008). Moreover, having more frequent meetings with friends and family members, greater levels of religiosity and political trust can, to some extent, protect against the negative impact of financial hardship on individual well-being in Ireland.

Despite the contributions of this study, there are also some limitations that bear mentioning. Firstly, in analysing repeated cross-sectional data such as those in the ESS, it is important to acknowledge potential endogeneity issues (omitted variable bias, measurement errors and simultaneity) that can lead to biased and inefficient estimates. Omitted variable bias refers to the exclusion of relevant variables leading to distorted estimates due to the unaccounted influence of omitted factors. In explaining subjective well-being, personality traits can account for up to 20 per cent of the unobserved heterogeneity across individuals (Boyce, 2010). Individuals with strong intrinsic values and a sense of purpose that extend beyond material wealth may be less impacted by financial hardship. Unobserved personality traits such as these could be confounding factors that cannot be controlled for in this research (Diener *et al*., 2003; Kahneman and Krueger, 2006). In well-being studies, the possibility of omitted, unobservable factors (personality factors for example) may lead to models with low explanatory power. Measurement errors in explanatory variables further contribute to endogeneity issues when data inaccuracies can spuriously correlate with the error term. A further endogeneity issue is the possibility of simultaneity (for example, more frequent social meetings is associated with higher well-being, but it could be said that having higher well-being makes individuals more sociable). Simultaneous causality poses a distinct challenge in cross-sectional studies such as this one, as the bi-directional relationships between variables make it difficult to disentangle the direction of causation. Endogeneity can be addressed using instrumental variable (IV) techniques, by using variables correlated with endogenous factors but uncorrelated with the error term. However, the identification of valid instruments in and of itself is challenging. The availability of panel data or natural experiments, should they become available, would support the validity of the empirical findings using cross-sectional data.

Finally, single-question items from the ESS are used to measure both subjective well-being and perceived financial hardship and could be considered more limited than using multi-item scales. However, Hanmer and Cherepanov (2016) find support for using a single question on perceived financial ability in their study, and their results suggest that the single question item yields more information and explains more variance in their dependent variable (health utility scores). Lucas

and Donnellan (2012) argue that the single item life satisfaction measure is valid, and Cheung and Lucas (2014) find single-item life satisfaction measures performed very similarly when compared to the multi-item satisfaction with life scale (SWLS). Nevertheless, the limitation of using single item measures in this research is acknowledged.

This paper uses several subjective, self-assessed variables both for the dependent variable and independent variables (self-assessed measures of social capital for example) obtained from the ESS. Even though self-assessed life satisfaction, for example, is a widely used instrument to capture subjective well-being, there is often systematic reporting heterogeneity. This variation may be related to differences in true (latent) subjective well-being and/or variation in reporting driven by individual characteristics. Methods to correct for systematic differences in reporting heterogeneity across the population have been proposed and include the use of anchoring vignettes (King *et al*., 2004). However, these are not available in ESS.

In spite of its limitations, this study extends the current knowledge on the association between financial hardship and subjective well-being in Ireland. Moreover, personal social resources have significant, positive associations with life satisfaction. Maintaining social resources such as frequent contact with family and friends, personal religiosity and high levels of confidence in the Irish political system can provide significant individual well-being benefits. However, maintaining a set of social resources does not completely cancel out the negative association between financial hardship and well-being. According to this study the life satisfaction of those struggling financially is somewhat better when equipped with key personal social resources, indicating the importance of having social resources when dealing with financial pressures. Building social resources at an individual level should be seen as enablers of better well-being outcomes.

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APPENDIX

Table A.1: Generalised Ordered Logit Results – Full Model 2

		Coeff (Robust SE)	*OR[a] (Robust SE)*
Financial hardship		–0.691*** (0.052)	0.501*** (0.026)
Social Meetings[v]	I	0.680*** (0.084)	1.974*** (0.167)
	II	0.594*** (0.069)	1.812*** (0.124)
	III	0.554*** (0.054)	1.739*** (0.093)
	IV	0.517*** (0.048)	1.677*** (0.081)
	V	0.414*** (0.045)	1.513*** (0.068)
	VI	0.359*** (0.051)	1.432*** (0.074)
	VII	0.303*** (0.070)	1.354*** (0.095)
Religiosity		0.149*** (0.022)	1.161*** (0.026)
Political Trust[v]	I	0.513*** (0.052)	1.670*** (0.086)
	II	0.399*** (0.038)	1.490*** (0.057)
	III	0.340*** (0.030)	1.405*** (0.042)
	IV	0.296*** (0.027)	1.345*** (0.036)
	V	0.198*** (0.024)	1.219*** (0.030)
	VI	0.086 (0.028)	1.090** (0.030)
	VII	–0.015 (0.036)	0.986 (0.036)
Age		–0.049*** (0.007)	0.952*** (0.007)
Female[v]	I	0.192** (0.085)	1.212** (0.102)
	II	0.172** (0.071)	1.188** (0.084)
	III	–0.012 (0.055)	0.988 (0.055)
	IV	–0.027 (0.050)	0.974 (0.049)
	V	0.061 (0.046)	1.062 (0.049)
	VI	0.170** (0.052)	1.185** (0.061)
	VII	0.204** (0.070)	1.226** (0.086)
No education[v]	I	–0.379* (0.194)	0.685* (0.133)
	II	–0.172 (0.163)	0.842 (0.137)
	III	–0.292** (0.140)	0.747** (0.105)
	IV	–0.139 (0.128)	0.870 (0.111)
	V	0.068 (0.128)	1.070 (0.137)
	VI	0.248* (0.140)	1.282* (0.179)
	VII	0.420** (0.176)	1.522** (0.268)
Primary Education[v]	I	–0.308** (0.119)	0.735** (0.087)
	II	–0.248** (0.098)	0.780** (0.077)
	III	–0.069 (0.086)	0.934 (0.080)
	IV	–0.074 (0.079)	0.929 (0.074)
	V	0.035 (0.076)	1.036 (0.078)
	VI	0.074 (0.079)	1.077 (0.085)
	VII	0.280** (0.097)	1.323** (0.128)

Table A.1: Generalised Ordered Logit Results – Full Model 2 (Contd.)

		Coeff (Robust SE)	*OR[a] (Robust SE)*
Post-Secondary Education		–0.009 (0.049)	0.991 (0.048)
Tertiary Education[v]	I	0.017 (0.129)	1.017 (0.131)
	II	0.065 (0.106)	1.067 (0.113)
	III	0.225** (0.080)	1.252** (0.100)
	IV	0.097 (0.069)	1.102 (0.076)
	V	0.034 (0.061)	1.035 (0.064)
	VI	–0.149** (0.070)	0.862** (0.060)
	VII	–0.402*** (0.098)	0.669*** (0.066)
Unemployed[v]	I	–0.536*** (0.112)	0.585*** (0.066)
	II	–0.595*** (0.100)	0.552*** (0.055)
	III	–0.500*** (0.090)	0.606*** (0.055)
	IV	–0.523*** (0.090)	0.593*** (0.053)
	V	–0.335*** (0.095)	0.716*** (0.068)
	VI	–0.159 (0.113)	0.853 (0.097)
	VII	0.026 (0.150)	1.026 (0.154)
Out of the Labour Force		0.156** (0.048)	1.169** (0.056)
Income[v]	I	0.260*** (0.072)	1.297*** (0.093)
	II	0.290*** (0.062)	1.337*** (0.083)
	III	0.273*** (0.048)	1.315*** (0.063)
	IV	0.207*** (0.044)	1.230*** (0.054)
	V	0.149*** (0.042)	1.161*** (0.049)
	VI	–0.017 (0.047)	0.983 (0.046)
	VII	–0.095 (0.061)	0.909 (0.055)
One Child		0.073 (0.060)	1.076 (0.064)
Two Children		0.026 (0.063)	1.026 (0.065)
Three Children		0.161** (0.073)	1.175** (0.086)
Separated		–0.661*** (0.106)	0.516*** (0.055)
Divorced		–0.068 (0.110)	0.934 (0.103)
Widowed		–0.505*** (0.076)	0.603*** (0.046)
Never Married		–0.306*** (0.052)	0.737*** (0.038)
Health is Hampered	I	–0.192* (0.110)	0.825* (0.091)
	II	–0.192* (0.095)	0.825** (0.079)
	III	–0.312*** (0.079)	0.732*** (0.058)
	IV	–0.338*** (0.075)	0.713*** (0.053)
	V	–0.130* (0.071)	0.878* (0.062)
	VI	0.134* (0.081)	1.144* (0.092)
	VII	0.080 (0.110)	1.083 (0.115)
Good Health[v]	I	–0.592*** (0.111)	0.553*** (0.061)
	II	–0.585*** (0.088)	0.557*** (0.049)

Table A.1: Generalised Ordered Logit Results – Full Model 2 (Contd.)

		Coeff (Robust SE)	*OR[a] (Robust SE)*
Good Health[v]	III	–0.419*** (0.064)	0.658*** (0.042)
	IV	–0.468*** (0.056)	0.626*** (0.035)
	V	–0.530*** (0.049)	0.588*** (0.029)
	VI	–0.662*** (0.055)	0.516*** (0.029)
	VII	–0.653*** (0.075)	0.520*** (0.039)
Fair Health[v]	I	–0.984*** (0.136)	0.374*** (0.051)
	II	–1.073*** (0.116)	0.342*** (0.040)
	III	–0.875*** (0.092)	0.417*** (0.039)
	IV	–0.864*** (0.084)	0.421*** (0.035)
	V	–0.916*** (0.080)	0.400*** (0.032)
	VI	–1.106*** (0.095)	0.331*** (0.032)
	VII	–0.928*** (0.130)	0.395*** (0.051)
Very Bad Health[v]	I	–1.773*** (0.192)	0.170*** (0.033)
	II	–1.813*** (0.166)	0.163*** (0.027)
	III	–1.522*** (0.147)	0.218*** (0.032)
	IV	–1.292*** (0.144)	0.275*** (0.039)
	V	–1.211*** (0.156)	0.298*** (0.047)
	VI	–1.327*** (0.201)	0.265*** (0.053)
	VII	–1.045*** (0.240)	0.352*** (0.084)
Constant	I	4.038*** (0.234)	56.73*** (13.27)
	II	3.386*** (0.223)	29.5*** (6.594)
	III	2.465*** (0.209)	11.76*** (2.461)
	IV	2.000*** (0.205)	7.389*** (1.517)
	V	1.143*** (0.203)	3.137*** (0.636)
	VI	0.118 (0.207)	1.125 (0.233)
	VII	–0.873*** (0.220)	0.418*** (0.092)

Source: Author's analysis.

Notes: [a]Exponentiated coefficients; standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.001$. Year dummies included. OR: Odds Ratio; SE Standard Error. Variables denoted with superscript "v" violated the parallel-lines assumption.

I – life satisfaction levels 0-3 (0, 1, 2, 3) compared to 4, 5, 6, 7, 8, 9 and 10.

II – life satisfaction levels 0-3 and 4 compared to 5, 6, 7, 8, 9 and 10.

III – life satisfaction levels 0-3, 4 and 5 compared to 6, 7, 8, 9 and 10.

IV – life satisfaction levels 0-3, 4, 5 and 6 compared to 7, 8, 9 and 10.

V – life satisfaction levels 0-3, 4, 5, 6 and 7 compared to 8, 9 and 10.

VI – life satisfaction levels 0-3, 4, 5, 6, 7 and 8 compared to 9 and 10.

VII – life satisfaction levels 0-3, 4, 5, 6, 7, 8 and 9 compared to 10.

Table A.2: Generalised Ordered Logit Results – Models 3-5

		Model 3			*Model 4*			*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Financial hardship		–0.751***	0.472***		–0.688***	0.503***		0.682***	0.505***
		(0.070)	(0.033)		(0.053)	(0.027)		– (0.054)	(0.027)
Social Meetings[v]	I	0.810***	2.248***	I	0.680***	1.974***	I	0.680***	1.975***
		(0.115)	(0.258)		(0.084)	(0.167)		(0.085)	(0.167)
	II	0.663***	1.941***	II	0.594***	1.812***	II	0.595***	1.813***
		(0.088)	(0.171)		(0.069)	(0.124)		(0.069)	(0.125)
	III	0.548***	1.730***	III	0.554***	1.740***	III	0.554***	1.740***
		(0.064)	(0.110)		(0.054)	(0.093)		(0.054)	(0.093)
	IV	0.493***	1.637***	IV	0.517***	1.677***	IV	0.517***	1.677***
		(0.055)	(0.091)		(0.048)	(0.081)		(0.048)	(0.081)
	V	0.405***	1.500***	V	0.414***	1.513***	V	0.414***	1.513***
		(0.049)	(0.073)		(0.045)	(0.068)		(0.045)	(0.068)
	VI	0.325***	1.384***	VI	0.359***	1.432***	VI	0.359***	1.432***
		(0.054)	(0.075)		(0.051)	(0.074)		(0.051)	(0.074)
	VII	0.257***	1.294***	VII	0.303***	1.353***	VII	0.303***	1.354***
		(0.073)	(0.094)		(0.070)	(0.095)		(0.070)	(0.095)
Religiosity		0.149***	1.161***		0.145***	1.156***		0.149***	1.161***
		(0.022)	(0.026)		(0.024)	(0.028)		(0.022)	(0.026)
Political Trust[v]	I	0.497***	1.644***	I	0.512***	1.668***	I	0.500***	1.649***
		(0.052)	(0.086)		(0.052)	(0.086)		(0.053)	(0.088)
	II	0.390***	1.477***	II	0.398***	1.489***	II	0.387***	1.473***
		(0.039)	(0.057)		(0.038)	(0.057)		(0.041)	(0.061)
	III	0.338***	1.403***	III	0.339***	1.404***	III	0.330***	1.391***
		(0.030)	(0.043)		(0.030)	(0.042)		(0.033)	(0.046)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Political Trust[v]	IV	0.296***	1.344***	0.296***	1.344***	0.288***	1.334***
		(0.027)	(0.036)	(0.027)	(0.036)	(0.029)	(0.039)
	V	0.197***	1.218***	0.198***	1.219***	0.192***	1.211***
		(0.024)	(0.030)	(0.024)	(0.030)	(0.026)	(0.032)
	VI	0.088**	1.092**	0.086**	1.090**	0.181**	1.085**
		(0.028)	(0.030)	(0.028)	(0.030)	(0.029)	(0.031)
	VII	–0.010	0.990	–0.014	0.986	–0.019	0.981
		(0.037)	(0.036)	(0.036)	(0.036)	(0.037)	(0.036)
Financial Hardship x Social Meetings[v]	I	–0.232	0.793				
		(0.157)	(0.124)				
	II	–0.110	0.896				
		(0.129)	(0.115)				
	III	0.066	1.068				
		(0.105)	(0.112)				
	IV	0.134	1.143				
		(0.101)	(0.116)				
	V	0.092	1.096				
		(0.102)	(0.112)				
	VI	0.266	1.305				
		(0.115)	(0.150)				
	VII	0.363	1.437				
		(0.142)	(0.203)				

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Financial Hardship x Personal Religiosity				0.019	1.019		
				(0.048)	(0.049)		
Financial Hardship x Political Trust						0.034	1.035
						(0.053)	(0.054)
Age		–0.049***	0.952***	–0.050***	0.952***	0.049***	0.952***
		(0.007)	(0.007)	(0.007)	(0.007)	–(0.007)	(0.007)
Female[v]	I	0.196**	1.216**	0.191**	1.210**	0.192**	1.212**
		(0.085)	(0.103)	(0.085)	(0.102)	(0.085)	(0.103)
	II	0.172**	1.188**	0.171**	1.187**	0.172**	1.188**
		(0.071)	(0.084)	(0.071)	(0.084)	(0.071)	(0.084)
	III	–0.013	0.987	–0.013	0.987	–0.013	0.987
		(0.055)	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
	IV	–0.027	0.974	–0.029	0.974	–0.027	0.973
		(0.050)	(0.049)	(0.050)	(0.049)	(0.050)	(0.049)
	V	0.061	1.063	0.061	1.063	0.060	1.062
		(0.046)	(0.049)	(0.046)	(0.049)	(0.046)	(0.049)
	VI	0.169**	1.184**	0.170**	1.185**	0.169**	1.184**
		(0.052)	(0.061)	(0.052)	(0.061)	(0.052)	(0.061)
	VII	0.206**	1.228**	0.204**	1.227**	0.203**	1.225**
		(0.070)	(0.085)	(0.070)	(0.086)	(0.070)	(0.085)
No education[v]	I	–0.366*	0.694*	–0.381*	0.683*	–0.379*	0.685*
		(0.195)	(0.135)	(0.195)	(0.133)	(0.195)	(0.133)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
No education	II	–0.169	0.845	–0.174	0.841	–0.172	0.842
		(0.164)	(0.138)	(0.163)	(0.137)	(0.163)	(0.137)
	III	–0.295**	0.745**	–0.294**	0.745**	–0.293**	0.746**
		(0.140)	(0.105)	(0.141)	(0.105)	(0.141)	(0.105)
	IV	–0.138	0.872	–0.141	0.869	–0.140	0.869
		(0.128)	(0.111)	(0.128)	(0.111)	(0.128)	(0.111)
	V	0.067	1.069	0.067	1.069	0.067	1.070
		(0.128)	(0.137)	(0.128)	(0.137)	(0.128)	(0.137)
	VI	0.249*	1.283*	0.248*	1.281*	0.249*	1.282*
		(0.139)	(0.179)	(0.140)	(0.179)	(0.140)	(0.179)
	VII	0.418**	1.519**	0.420**	1.522**	0.421**	1.523**
		(0.175)	(0.266)	(0.176)	(0.268)	(0.176)	(0.268)
Primary Education[v]	I	–0.305**	0.737**	–0.310**	0.733**	–0.308**	0.735**
		(0.120)	(0.088)	(0.119)	(0.087)	(0.119)	(0.087)
	II	–0.245**	0.783**	–0.250**	0.779**	–0.248**	0.780**
		(0.099)	(0.077)	(0.098)	(0.076)	(0.098)	(0.077)
	III	–0.072	0.930	–0.07	0.932	–0.069	0.934
		(0.086)	(0.080)	0 (0.086)	(0.080)	(0.086)	(0.080)
	IV	–0.077	0.926	–0.075	0.928	–0.074	0.928
		(0.079)	(0.073)	(0.079)	(0.074)	(0.079)	(0.074)
	V	0.031	1.031	0.034	1.035	0.035	1.035
		(0.076)	(0.078)	(0.076)	(0.078)	(0.076)	(0.078)
	VI	0.073	1.076	0.074	1.077	0.074	1.077
		(0.079)	(0.085)	(0.079)	(0.085)	(0.079)	(0.085)
	VII	0.281**	1.324**	0.280**	1.323**	0.280**	1.323**
		(0.097)	(0.128)	(0.097)	(0.128)	(0.097)	(0.128)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Post-Secondary Education		–0.009	0.991	–0.009	0.991	–0.009	0.991
		(0.049)	(0.048)	(0.049)	(0.048)	(0.049)	(0.048)
Tertiary Education[v]	I	0.025	1.025	0.017	1.017	0.017	1.017
		(0.129)	(0.133)	(0.129)	(0.131)	(0.129)	(0.132)
	II	0.067	1.070	0.064	1.067	0.065	1.067
		(0.106)	(0.113)	(0.106)	(0.113)	(0.106)	(0.113)
	III	0.221**	1.247**	0.225**	1.252**	0.225**	1.252**
		(0.080)	(0.099)	(0.080)	(0.100)	(0.080)	(0.100)
	IV	0.094	1.099	0.097	1.102	0.098	1.102
		(0.069)	(0.076)	(0.069)	(0.076)	(0.069)	(0.076)
	V	0.033	1.033	0.034	1.034	0.034	1.035
		(0.061)	(0.064)	(0.061)	(0.064)	(0.061)	(0.064)
	VI	–0.148**	0.863**	–0.149**	0.861**	–0.149**	0.862**
		(0.070)	(0.060)	(0.070)	(0.060)	(0.070)	(0.060)
	VII	–0.402***	0.669***	–0.403***	0.669***	–0.402***	0.669***
		(0.098)	(0.066)	(0.098)	(0.066)	(0.098)	(0.066)
Unemployed[v]	I	–0.495***	0.609***	–0.533***	0.587***	–0.534***	0.586***
		(0.113)	(0.069)	(0.112)	(0.066)	(0.112)	(0.066)
	II	–0.567***	0.567***	–0.593***	0.553***	–0.593***	0.552***
		(0.101)	(0.057)	(0.101)	(0.056)	(0.101)	(0.056)
	III	–0.497***	0.608***	–0.498***	0.608***	–0.499***	0.607***
		(0.090)	(0.055)	(0.091)	(0.055)	(0.090)	(0.055)
	IV	–0.526***	0.591***	–0.520***	0.594***	–0.521***	0.594***
		(0.090)	(0.053)	(0.090)	(0.054)	(0.090)	(0.053)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3			Model 4			Model 5	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*		*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Unemployed[v]	V	–0.333***	0.717***	V	–0.333***	0.717***	V	–0.333***	0.716***
		(0.095)	(0.068)		(0.095)	(0.068)		(0.095)	(0.068)
	VI	–0.190*	0.827*	VI	–0.157	0.854	VI	–0.158	0.854
		(0.114)	(0.094)		(0.113)	(0.097)		(0.113)	(0.097)
	VII	–0.024	0.977	VII	0.027	1.027	VII	0.027	1.027
		(0.151)	(0.148)		(0.150)	(0.155)		(0.150)	(0.155)
Out of the Labour Force		0.157**	1.170**		0.156**	1.169**		0.157**	1.170**
		(0.048)	(0.056)		(0.048)	(0.056)		(0.048)	(0.056)
Income[v]	I	0.222**	1.248**	I	0.259***	1.296***	I	0.259***	1.296***
		(0.074)	(0.093)		(0.072)	(0.093)		(0.072)	(0.093)
	II	0.266***	1.305***	II	0.290***	1.336***	II	0.290***	1.337***
		(0.063)	(0.082)		(0.062)	(0.083)		(0.062)	(0.083)
	III	0.270***	1.310***	III	0.273***	1.314***	III	0.274***	1.315***
		(0.049)	(0.064)		(0.048)	(0.063)		(0.048)	(0.064)
	IV	0.212***	1.236***	IV	0.207***	1.230***	IV	0.207***	1.230***
		(0.045)	(0.055)		(0.044)	(0.054)		(0.044)	(0.054)
	V	0.148***	1.159***	V	0.149***	1.161***	V	0.150***	1.161***
		(0.043)	(0.049)		(0.042)	(0.049)		(0.042)	(0.056)
	VI	–0.000	1.000	VI	–0.017	0.984	VI	–0.016	0.984
		(0.047)	(0.047)		(0.047)	(0.046)		(0.047)	(0.046)
	VII	–0.069	0.934	VII	–0.095	0.910	VII	–0.094	0.910
		(0.061)	(0.057)		(0.061)	(0.055)		(0.061)	(0.055)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
One Child		0.073	1.076	0.073	1.076	0.073	1.076
		(0.060)	(0.064)	(0.060)	(0.064)	(0.060)	(0.064)
Two Children		0.028	1.028	0.026	1.027	0.026	1.026
		(0.063)	(0.065)	(0.063)	(0.065)	(0.063)	(0.065)
Three Children		0.165**	1.180**	0.161**	1.175**	0.161**	1.175**
		(0.073)	(0.086)	(0.073)	(0.086)	(0.073)	(0.086)
Separated		–0.658***	0.518***	–0.662***	0.516***	–0.662***	0.516***
		(0.106)	(0.055)	(0.106)	(0.055)	(0.106)	(0.055)
Divorced		–0.069	0.933	–0.069	0.934	–0.069	0.934
		(0.110)	(0.102)	(0.110)	(0.103)	(0.110)	(0.103)
Widowed		–0.507***	0.602***	–0.506***	0.603***	–0.506***	0.603***
		(0.077)	(0.046)	(0.076)	(0.046)	(0.076)	(0.046)
Never Married		–0.305***	0.737***	–0.306***	0.737***	–0.306***	0.736***
		(0.052)	(0.038)	(0.052)	(0.038)	(0.052)	(0.038)
Health is Hampered[v]	I	–0.176	0.838	I –0.191*	0.826*	I –0.191*	0.826*
		(0.111)	(0.093)	(0.110)	(0.091)	(0.110)	(0.091)
	II	–0.182*	0.833*	II –0.191**	0.826**	II –0.192**	0.826**
		(0.096)	(0.080)	(0.095)	(0.079)	(0.095)	(0.079)
	III	–0.310***	0.734***	III –0.312***	0.732***	III –0.312***	0.732***
		(0.080)	(0.058)	(0.079)	(0.058)	(0.079)	(0.058)
	IV	–0.338***	0.713***	IV –0.338***	0.714***	IV –0.338***	0.713***
		(0.075)	(0.053)	(0.075)	(0.053)	(0.075)	(0.053)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
	V	–0.128*	0.880*	–0.130*	0.878*	–0.130*	0.878*
		(0.071)	(0.062)	(0.071)	(0.062)	(0.071)	(0.062)
	VI	0.128	1.136	0.134*	1.144*	0.134*	0.878*
		(0.081)	(0.092)	(0.081)	(0.092)	(0.081)	(0.062)
	VII	0.073	1.075	0.080	1.084	0.080	1.083
		(0.106)	(0.114)	(0.106)	(0.115)	(0.106)	(0.115)
Good Health[v]	I	–0.588***	0.555***	–0.592***	0.553***	–0.593***	0.553***
		(0.111)	(0.062)	(0.111)	(0.061)	(0.111)	(0.061)
	II	–0.585***	0.557***	–0.585***	0.557***	–0.586***	0.556***
		(0.088)	(0.049)	(0.088)	(0.049)	(0.088)	(0.049)
	III	–0.422***	0.656***	–0.419***	0.658***	–0.420***	0.657***
		(0.065)	(0.042)	(0.064)	(0.042)	(0.064)	(0.042)
	IV	–0.469***	0.626***	–0.468***	0.626***	–0.469***	0.626***
		(0.056)	(0.035)	(0.056)	(0.035)	(0.056)	(0.035)
	V	–0.531***	0.588***	–0.531***	0.588***	–0.531***	0.588***
		(0.050)	(0.029)	(0.049)	(0.029)	(0.049)	(0.029)
	VI	–0.664***	0.515***	–0.662***	0.516***	–0.663***	0.588***
		(0.055)	(0.028)	(0.055)	(0.029)	(0.055)	(0.029)
	VII	–0.657***	0.519***	–0.653***	0.520***	–0.654***	0.520***
		(0.074)	(0.039)	(0.075)	(0.039)	(0.075)	(0.039)
Fair Health[v]	I	–0.983***	0.374***	–0.985***	0.373***	–0.985***	0.373***
		(0.137)	(0.051)	(0.136)	(0.051)	(0.136)	(0.051)
	II	–1.081***	0.339***	–1.075***	0.341***	–1.075***	0.341***
		(0.116)	(0.039)	(0.116)	(0.040)	(0.116)	(0.040)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

		Model 3		*Model 4*		*Model 5*	
		Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
Fair Health[v]	III	–0.880***	0.415***	–0.877***	0.416***	–0.877***	0.416***
		(0.093)	(0.038)	(0.092)	(0.038)	(0.092)	(0.039)
	IV	–0.864***	0.422***	–0.865***	0.421***	–0.865***	0.421***
		(0.084)	(0.035)	(0.084)	(0.035)	(0.084)	(0.035)
	V	–0.916***	0.400***	–0.917***	0.400***	–0.917***	0.400***
		(0.080)	(0.032)	(0.080)	(0.032)	(0.080)	(0.032)
	VI	–1.100***	0.333***	–1.106***	0.331***	–1.106***	0.331***
		(0.095)	(0.032)	(0.095)	(0.032)	(0.095)	(0.032)
	VII	–0.929***	0.395***	–0.928***	0.395***	–0.928***	0.395***
		(0.130)	(0.051)	(0.130)	(0.051)	(0.130)	(0.051)
Very Bad Health[v]	I	–1.757***	0.173***	–1.773***	0.170***	–1.773***	0.170***
		(0.194)	(0.033)	(0.192)	(0.033)	(0.192)	(0.033)
	II	–1.813***	0.163***	–1.813***	0.163***	–1.813***	0.163***
		(0.167)	(0.027)	(0.166)	(0.027)	(0.167)	(0.027)
	III	–1.526***	0.217***	–1.522***	0.218***	–1.521***	0.218***
		(0.148)	(0.032)	(0.147)	(0.032)	(0.147)	(0.032)
	IV	–1.288***	0.276***	–1.292***	0.275***	–1.291***	0.275***
		(0.144)	(0.040)	(0.144)	(0.039)	(0.144)	(0.040)
	V	–1.206***	0.299***	–1.211***	0.298***	–1.210***	0.298***
		(0.157)	(0.047)	(0.156)	(0.047)	(0.156)	(0.047)
	VI	–1.334***	0.263***	–1.327***	0.265***	–1.326***	0.265***
		(0.202)	(0.053)	(0.201)	(0.053)	(0.201)	(0.053)
	VII	–1.049***	0.350***	–1.045***	0.352***	–1.044***	0.352***
		(0.239)	(0.084)	(0.240)	(0.084)	(0.240)	(0.084)

Table A.2: Generalised Ordered Logit Results – Models 3-5 (Contd.)

	Model 3		*Model 4*		*Model 5*	
	Coeff (Robust SE)	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*	*Coeff (Robust SE)*	*Odds Ratio[a] (Robust SE)*
N	12,947		12,947		12,947	
Pseudo R^2	0.074		0.073		0.074	

Notes: [a]Exponentiated coefficients; standard errors in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.001$. Year dummies included.
OR: Odds Ratio; SE Standard Error. Variables denoted with superscript "v" violated the parallel-lines assumption.
I – life satisfaction levels 0-3 (0, 1, 2, 3) compared to 4, 5, 6, 7, 8, 9 and 10.
II – life satisfaction levels 0-3 and 4 compared to 5, 6, 7, 8, 9 and 10.
III – life satisfaction levels 0-3, 4 and 5 compared to 6, 7, 8, 9 and 10.
IV – life satisfaction levels 0-3, 4, 5 and 6 compared to 7, 8, 9 and 10.
V – life satisfaction levels 0-3, 4, 5, 6 and 7 compared to 8, 9 and 10.
VI – life satisfaction levels 0-3, 4, 5, 6, 7 and 8 compared to 9 and 10.
VII – life satisfaction levels 0-3, 4, 5, 6, 7, 8 and 9 compared to 10.