

problems. People who reported a high level of trust were at lower risk of mental health problems.

There was no difference in the risk of reporting poor mental health among men and women who were not currently working. However men who were working were at significantly lower risk of reporting poor mental health than women (either working or non-working).

There was a significant interaction between smoking, age and social support and this is illustrated in Figure 1. Among younger people, low social support was associated with a higher risk of reporting mental health problems; younger people with high social support were less likely to report poor mental health. In middle aged and older people probability of reporting mental health problems was similar regardless of the level of social support. Smokers with low social support were more likely to report mental health problems than non-smokers with low social support, especially among younger people. However, among people with high social support there was no evidence of an association between smoking status and the probability of reporting mental illness.

Inclusion of individual-level trust, and the ED level variable indicating urban or rural location, significantly reduced the variance in self-reported poor mental health at ED level (Model 3; variance 0.046 SE 0.043 ns). The cross level interaction between ED location and trust was not significant, indicating their effects are additive.

#### Discussion

While there is area level variation in self-reported problems mental health not accounted for by individual level characteristics, this is largely explained by differences in urban and rural areas and patterns of trust in particular appear to be related to location. These findings give support for previous evidence that indicators of social capital may reflect well-preserved community networks and support but are not necessarily related to material or social disadvantage. In previous analyses we have shown that area level variation in health status appears largely to occur in an urbanised context. This suggests that in the main variability at area level reflects the composition of areas and that the compounding disadvantage of deteriorating social facilities and amenities is seen largely in an urban context. Clearly however the shift from a more rural based society is going to reflect change, and this is lent some support in this cross sectional analysis. There are also likely to be emerging secular or generational patterns in that older people appear to be both more trusting and less likely to report mental health problems. It must also be borne in mind that the stigma associated with

reporting poor mental health is more likely also to apply to older people.

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## Social Capital and Self-Rated Health in the Republic of Ireland: Evidence from the European Social Survey

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#### Abstract

This paper analyses the determinants of self-reported health in Ireland, conditioning self-reported health on a set of socio-economic, labour market and social capital variables. Ireland has the highest self-reported health rate in Europe, a finding backed-up by other studies. Data were derived from the 2002 and 2005 European Social survey. The full 87,915 observations from both rounds were pooled and used to estimate mean self-rated health across Europe. The Irish data were isolated, totalling 2,049 individuals for 2002 and 2,286 individuals for 2005. The 2002 data were used to analyse the determinants of subjective health state, as it had a richer array of social capital variables. The results demonstrate statistically significant effects of income on self-reported health that are robust to different statistical specifications and statistically significant though modest effects of social capital variables such as associational membership and frequency of social meeting and labour market variables such as being on a limited as opposed to permanent contract.

## Introduction

The extent to which health is distributed unequally across society and determined by social and labour market factors is an important question. Several studies have demonstrated that Ireland has very high self-rated health and well-being compared to other countries.<sup>1</sup> However, there also exist considerable social disparities in terms of health outcomes.<sup>2,3</sup> Several recent papers have examined socio-economic determinants of health.<sup>4,5</sup> There has also been considerable international empirical evidence about associations between social capital and health<sup>6-8</sup> and labour market variables and health<sup>9-11</sup>. However the literature is still very much contested in terms of the nature and scope of these associations.<sup>12,13</sup> A previous examination of self-rated health in Ireland revealed marked social gradients in self-rated health being related to age, marital status, tenure, educational status, social class, household size and eligibility for General Medical Services.<sup>3</sup> The properties of such scales and their relation to morbidity are discussed in several papers and there is strong evidence that single-item self-report measures are adequate survey measures of health with strong correlations to morbidity.<sup>14-18</sup> This paper further examines the relationship between self-reported health and a number of social capital and labour market variables, utilising data from the Irish round of the European Social Survey.

## Data and Method

Data were derived from the 2002 and 2005 European Social Survey<sup>19</sup> and analysed using STATA 9. The full 87,915 observations from both rounds were pooled and used to estimate the mean self-rated health across Europe. The Irish data were isolated, totalling to a sample-size of 2,049 individuals for 2002 and 2,286 individuals for 2005. The 2002 Irish data were utilised to estimate a detailed set of linear and non-linear multiple regression models to analyse the determinants of subjective health state, which itself was a five point scale: "very bad", "bad", "fair", "good", "very good". The 2002 data is used for this purpose as it contains a richer array of social capital variables. 3240 households were selected for interview, of which 2046 interviews were achieved, giving a response rate of 64.46 per cent. The nationally representative sample was drawn from the electoral register. We utilise a number of measures of social capital: number of associational memberships, frequency socialising with friends, social trust (as measured by a 1-30 scale summing three separate trust items) and availability of someone to discuss problems with. Our measures of labour market factors are: number of hours worked, degree of control over working hours and the nature of the contract the person was working under (permanent versus limited).

## Results

Table 1 displays the frequency distribution of self-reported health in 2002 and 2005. The majority of respondents describe their health as being fair, good or very good. There is no significant change in levels of self-rated health between the two rounds of the study. As can be seen in Table 2, the pooled data reveals that Ireland has the highest mean self-reported health of all the countries in the sample, thus replicating the other findings. Self-rated is highest in Ireland, Iceland, Denmark and Switzerland and lowest in Ukraine, Hungary, Estonia and Portugal.

We tested a number of specifications examining the link between self-reported health and social capital variables. The modelling strategy is similar to that pursued in a previous paper on well-being in Ireland.<sup>20</sup> Rather than omitting the 304 individuals that did not answer the income question, we impute their income as a linear function of their years of education. The results of the regression models are reported in Table 3. As can be seen, those who did not answer the income question do not differ in self-rated health in any of the five models. Model 1 examines the extent to which health is related to income and education without controlling for other factors and demonstrates a marked relationship between self-rated health and both measures. The stratification of health by income level is still very much apparent in the Irish context as

Table 1 Subjective Health in Ireland

Subjective general health	2002			2005		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
very good	842	41.17	41.17	960	42.03	42.03
good	868	42.44	83.62	951	41.64	83.67
fair	284	13.89	97.51	317	13.88	97.55
bad	40	1.96	99.46	48	2.1	99.65
very bad	11	0.54	100	8	0.35	100
Total	2,045	100		2,284	100	

Table 2 Self-Reported Health by Country (Pooled Data)

Country	Mean	Std. Deviation	N
Ireland	4.224	0.791	4329
Iceland	4.173	0.833	571
Denmark	4.120	0.906	2982
Switzerland	4.093	0.751	4179
Greece	4.045	0.984	4972
Austria	4.041	0.863	4506
Norway	3.997	0.892	3795
Sweden	3.985	0.869	3945
Belgium	3.983	0.797	3675
Israel	3.957	1.006	2487
United Kingdom	3.913	0.933	3942
Luxembourg	3.836	0.934	3185
Netherlands	3.831	0.773	4244
Finland	3.813	0.832	4019
Italy	3.726	0.814	1207
France	3.704	0.886	3308
Spain	3.661	0.923	3389
Germany	3.636	0.892	5785
Slovakia	3.621	0.926	1509
Czech Republic	3.560	0.947	4359
Slovenia	3.558	0.925	2957
Poland	3.538	0.942	3822
Portugal	3.396	0.882	3560
Estonia	3.350	0.898	1986
Hungary	3.332	0.965	3181
Ukraine	2.963	0.853	2021
Total	3.794	0.929	87915

Table 3 OLS Regression Estimates of Self-Reported Health (2002 Data)

	1	2	3	4	5
Income	0.074***	0.046***	0.037***	0.040***	0.033***
	0.008	0.008	0.009	0.011	0.011
Imputation Dummy	0.029	0.001	0.012	0.033	0.019
	0.049	0.048	0.048	0.068	0.069
Years of Education	0.024***	0.017***	0.009*	0.010	0.001
	0.006	0.006	0.006	0.007	0.008
Age		-0.013***	-0.013***	-0.010***	-0.010***
		0.001	0.001	0.002	0.002
Female		-0.030	-0.032	0.056	0.035
		0.034	0.035	0.047	0.048
Separated		-0.136	-0.094	-0.238	-0.213
		0.099	0.101	0.130	0.131
Divorced		-0.223	-0.207	-0.156	-0.166
		0.159	0.157	0.194	0.194
Widowed		-0.037	-0.006	-0.044	0.037
		0.071	0.073	0.110	0.113
Never Married		-0.150***	-0.154***	-0.066	-0.069
		0.046	0.048	0.060	0.062
Social Trust			0.014***		0.009**
			0.003		0.004
Television Hours			-0.010		-0.020
			0.009		0.012
Associational Membership			0.023**		0.014
			0.011		0.014
Social Meeting			0.039**		0.031*
			0.012		0.017
No-one to discuss problems			-0.103		-0.093
			0.063		0.092
Prioritization of Work				0.029***	0.028***
				0.008	0.009
Prioritization of Leisure				0.029***	0.025***
				0.012	0.012
Ability to Organise Work				-0.034	-0.029
				0.023	0.023
Contract Working Hours				0.002	0.002
				0.002	0.002
Total Overtime				-0.002	-0.001
				0.002	0.002
Limited Contract				-0.084*	-0.089*
				0.053	0.053
Constant	3.500	4.434	4.178	3.959	3.938
	0.068	0.129	0.158	0.223	0.264
Number of obs	1980	1980	1887	1093	1053
F (3, 1976)	60.58	35.71	23.8	10.62	8
Prob > F	0	0	0	0	0
Adj R-squared	0.08	0.14	0.14	0.12	0.12
Root MSE	0.76	0.74	0.72	0.71	0.71

Notes: OLS coefficients reported with standard errors in parenthesis. Significance levels: \*\*\* 1%, \*\* 5%, \* 10%

Table 4 Description of Covariates

	Covariate	Description
Dependent Variable	Health	5-value categorical variable ("very bad" to "very good") indicating the respondent's subjective general health.
Demographic Variables	Income	10-value categorical variable of households' total net income, from all sources. Includes 304 missing values which have been imputed from Years of Education
	Imputation Dummy	A binary variable that identifies those observations for which income values have been imputed.
	Years of Education	Number of years of completed education.
	Age	Respondent's age calculated by subtracting the year they were born from 2005
	Female	Binary variable, 0 = Male, 1 = female
	Marital Status	5-value categorical variable indicating marital status ("married", "separated", "divorced", "widowed", "never married"). Implemented using dummy variables, with "married" as the base class.
Social Capital Variables	Social Trust	A measure of the general level of trust that the respondent has in society. It is generated by combining the scores given in answer to three questions: "Are people mostly helpful or mostly look out for themselves?"; "Do people mostly try to take advantage or try to be fair?"; and "Can most people be trusted?". Each question has a zero to ten range, yielding a zero to thirty range for the aggregate measure. Lower values indicate lower levels of trust.
	Television Hours	Zero to seven categorical variable ("No time at all" to "More than 3 hours") indicating how many hours are spent watching TV on an average weekday.
	Associational Membership	Total number of memberships held in the past year, calculated by adding up twelve binary variables, which indicate membership of the following types of clubs or associations: sports; humanitarian; cultural/hobby; trade union; business/professional/farming; consumer/automobile; environmental/peace/animal; religious; political party; science/education/teacher; social club; or other voluntary organisation.
	Social Meeting	One to seven categorical variable ("never" to "every day") indicating how often the respondent meets friends, colleagues or relatives socially.
	No-one to discuss problems	Binary variable indicating whether the respondent has someone to discuss intimate or personal concerns with.
Labour Market	Prioritization of Work	Zero to ten categorical variable ("extremely unimportant" to "extremely important") indicating the importance of work to the respondent.
	Prioritization of Leisure	Zero to ten categorical variable ("extremely unimportant" to "extremely important") indicating the importance of leisure time to the respondent.
	Ability to Organise Work	One to four categorical variable ("to a large extent" to "not at all") indicating the extent to which the respondent can organise their own work.
	Contract Working Hours	Total number of contracted hours, excluding overtime, per week in their main job.
	Total Overtime	Total number of hours of overtime worked,
	Limited Contract	Binary variable indicating the type of contract held by the respondent – "limited" or "unlimited".

it is by level of education. Model 2 adds to this model by including a range of demographic variables. Confirming the findings from SLAN, there are no gender differences in self-reported health levels. Self-rated health is significantly negatively related to age and being single as opposed to married.

The results of Model 3 show a statistically significant though modest effect a range of social capital variables. Associational membership and meeting socially with friends are both significantly associated with better self-rated health. There is no association between hours spent watching television and self-rated health. Social trust is statistically significantly associated with higher self-rated health. Model 4 removes the social capital variables and includes measures of job quality and difficulty. It is thus restricted to the sample engaged in market employment. Those on limited contracts show significantly lower health than their peers, even

controlling for several other demographic characteristics. There is evidence that placing a higher importance on work has an effect on health, but in fact a positive effect. Interestingly, this effect is statistically the same as the effect of placing a high importance on leisure. Model 5 examines the full set of variables. As can be seen, income remains positively associated with self-rated health and age remains negatively associated. Social trust, being on a permanent contract, and prioritising work and leisure are all associated with higher self-rated health.

#### Discussion

There are a number of key results from this paper. Firstly, the data confirm that Ireland had the highest level of self-rated health in Europe in both 2002 and 2005. Furthermore, there is a marked social gradient in self-rated health and statistically significant associations between self-reported health and social and labour

market factors at the individual level. The effects of both income and age are robust to the inclusion of several different social and labour market variables. Thus the paper offers further confirmation of social gradients in Irish health. The paper finds statistically significant though modest effects of standard social capital measures, such as associational membership, on self-reported health. Social trust is the social capital variable that has the highest association with health and this should be explored further.

In summary, the evidence for social capital and labour market effects on health at the individual level as gleaned from this important data-source is consistent with the view that individual access to networks and other types of social capital are health-promoting though the magnitude of the coefficients is small. However, it would be unwise to make wide-ranging conclusions on the basis of a single analysis and a number of research strategies are available. The existing archived data should be utilised to a far greater degree. Other secondary sources of data such as the Eurobarometers, World Values Survey, World Health Survey, Living in Ireland, Quarterly National Household Survey, International Social Survey Programme and several other similar data sources could be utilised to build up a picture of the determinants of health in Ireland. Instrumental variable regression techniques offer one potentially powerful tool for disentangling cause and effect. The key to such methodologies is to find variables that are associated with the independent variables but not directly with the dependent variables thus allowing the construction of algorithms that yield figures with causal interpretations. Furthermore, there is growing interest in the extent to which self-reported health measures are prone to differential item functioning and the development of anchoring vignette methodologies is a promising development in this regard.<sup>14,21-23</sup>

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## Analysing the Relationship between Voter Turnout and Health in Ireland

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#### Abstract

Health issues are an integral part of the political agenda in Ireland. Yet no study to date has examined the impact of health concerns on political outcomes. This study investigates the relationship between health, both physical and psychological, and perceptions of the health service, and voter turnout in Ireland using the European Social Survey in 2005, (n=2286, RR 59.7%). The results show that individuals with poor subjective health are significantly less likely to vote in a General Election. Dissatisfaction with the health service is also associated with a lower probability of voting. However these effects interact: those with poor health and who are dissatisfied with the health service are more likely to vote. Psychological well-being has no effect on voter turnout. The health effects identified in this study are large and further work is needed in this area to identify the causal mechanisms underlying this relationship.