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Avoiding a "despair death crisis" in Europe. The drivers of human (un)sustainability

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Avoiding a "despair death crisis" in Europe. The drivers of human (un)sustainability

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Abstract

The emergence of the despair death crisis in the US stimulates researchers and policymakers to look at subjective wellbeing data from a different perspective. We wonder what can be done to avoid a similar situation in Europe and to this purpose we analyse factors correlated with (leading to) permanent depression in the European Social Survey by considering the latter as a proxy of despair deaths. We find strongest correlations with poor income, high income expectations, low education, low skilled jobs, status anxiety, poor social relationships, failure and shocks in affective relational life. If causality links between these drivers and the dependent variable are verified and confirmed we can conclude that the despair death crisis depends from a mix of material and immaterial factors that cannot be fully solved by mere monetary redistribution.

Keywords: depression, life satisfaction, happiness.

JEL numbers: I30, I31.

1. **Introduction**

The recent impressive phenomenon of the despair death crisis in the US is bringing the attention of researchers and policymakers to the problem of poverty of sense that endangers sustainability of human life.[1] As well documented by Case and Deaton (2015) the "death of despair" evidence represents a clear cut stylized fact in demographic trends in the US. Available data indicate in recent times (from 1998 to 2013) a surprising increase in mortality rates for all causes driven by a surge in mortality for suicides, opioid overdoses and alcohol related liver mortality for white non-Hispanics in the US, in spite of the marked decline in mortality in other US population groups and in almost all the other high income countries. The effect is concentrated in the middle age (45-54) cohort and has led to a decline in life expectancy at birth in spite of the ongoing medical progress.

A tentative explanation proposed by Deaton and Case (2015) is a disadvantage progressively growing from one age cohort to the next for the low educated in terms of access to well paid jobs in the labour market, marriage, child outcomes and health. As emphasized by Deaton (2015), this disadvantage produces failure to keep up with expectations in material and social outcomes regarded (Durkheim, 1897) as a crucial driver of human despair.

Ruhm (2018) discusses the identification of the causality link beyond the despair death evidence and observes that, in the Deaton and Case (2015), interpretation social and economic conditions lead to drug abuse and death, while a reverse causality nexus from drug abuse to worsened social and economic conditions cannot be excluded. If this is the case the role of social and economic conditions on despair deaths would be overstated. The conclusion of Ruhm (2018) is more in direction of the

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[1] See for instance the session titled "Despair death crisis and the future of capitalism" at the 2020 meeting of the American Economic Association (https://www.aeaweb.org/conference/2020/preliminary/2262).

reverse causality nexus since changes in economic conditions account for less than one-tenth of the rise in drug and opioid-involved mortality rates. Along this line a group of authors (Roux 2017; Ruhm 2019; Masters, Tilstra and Simon 2018) argue that highly addictive new drugs have played per se an important role. Dow et al. (2019) seem however to find on the contrary evidence for causality going from economic conditions to despair deaths. They wonder whether economic policies can address the problem and find that a rise in minimum wage and earned income tax credit could reduce non-drug related suicides.

The main contributions mentioned above are much less in conflict with each other than they may seem to be. Case and Deaton (2015) acknowledge that economic factors are not the only drivers of the phenomenon and that social factors matter, consistently with what argued and found by Ruhm (2018). The same concentration of the phenomenon on white non-Hispanics is a paradox and implies that poor economic conditions cannot be the only rationale explaining the phenomenon. Why black and Hispanics groups (belonging to the same low income-low education cohorts) do not display the same mortality dynamics ? And why Europe is unaffected by the phenomenon ?

The despair death stylized facts (and paradox) suggest that it would be of great interest for the subjective wellbeing literature to look at its object of study from a different angle. Instead of solely focusing on the drivers of life satisfaction using values of cognitive, affective or eudaimonic wellbeing in ascending order,[2] a specific investigation on the drivers that make individuals precipitate to states of permanent depression (where the risk of despair death is much higher) would help us to understand causes and to device policies to prevent despair deaths.

This investigation has relevant consequences and can provide useful insights for social and economic policies. As is well known depression is one of the most common mental disorders in the world. Depression has severe economic consequences in terms of loss of productivity and health expenditure. Evans-Lacko and Knapp (2016) analyse the cost of workplace depression in terms of absenteeism and pre-senteeism in eight countries and find that it accounts for a ratio between 0.1 and 4.9 percent of country GDP. Becchetti et al. (2019) find that individuals declaring that their life has poor sense have higher mortality rates in the following years.

There are a number of different things that can cause depression ranging from biological to environmental factors. The key drivers for depression can include the family history of depression, the medical conditions and social factors. The historical relationship between depression and genetic and social factors has long been studied by researchers. Weissman et al. (2016) analyzed the role of biological offspring and found that individuals with two previous generations affected with major depression were at highest risk for major depression, suggesting the potential value of determining family history of depression in children and adolescents beyond two generations. The historical relationship and the social factors affecting human depression, were analyzed by Paykel et al. (2018), highlighting the importance of social stress in puerperal depression. In particular, previous history of psychiatric disorder, younger age, early postpartum blues, and a group of variables reflecting poor marital relationships and absence of social support were also notable. Poor marital support acted as a vulnerability factor, only producing an effect in presence of stressful life events. Previous psychiatric history produced a strong independent effect, both with and without life events. Postpartum blues were only associated with depression in the absence of life events, suggesting a small hormonal sub-group.

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[2] For a survey of studies on life satisfaction see, among other, Frey and Stutzer and Becchetti and Pelloni (2013)

The goal of our paper is to provide a contribution in this direction by analysing drivers of high states of depression for respondents to the European Social Survey with the goal of providing useful insights for preventing the phenomenon of the US despair death crisis in Europe. There is obviously a trade-off in the choice of our dependent variable. On the one side, depression can hopefully not lead to suicide or other causes of despair death. On the other side it allows us to find a larger number of positive cases strongly correlated with that negative outcome and allows us to exploit the richness of survey data where we have a wide array of sociodemographic variables together with expression of tastes and values.

Our findings confirm that permanent depression is correlated with a mix of economic and non economic factors. If income and monetary factors play an important role, non economic factors such as education, gender, the importance of competition of status for the respondents and failure and shocks from relational life are as well all important component accounting for around two third of the explained variability of depression in our sample. These results are consistent with evidence from the life satisfaction literature where relational goods and competition for status play an important role on subjective wellbeing.

2. The dataset and the definition of the dependent variable

The source of data for our empirical analysis is the European Social Survey (ESS). We use the fifth, sixth, seventh and eight waves of ESS implemented in 2010, 2012, 2014 and 2016 respectively. The database contains information on health, socio-economic status, family networks, social and political preferences of a sample of Europeans aged 15 and over. More specifically, the ESS survey is composed by 21 country-level representative samples for the following countries: Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Israel, Czech Republic, Poland, Ireland, Luxembourg, Hungary, Portugal, Slovenia, Estonia and Croatia.

We build our dependent variable starting from an ESS question where respondents are asked whether they have been depressed most of times or all time in the last week. The construction of the question reflects the well-known fact that information on subjective wellbeing needs to be tied to an extended time period in order to avoid the influence of contingencies occurring during the interview (weather conditions, transient mood of the respondent at that moment, etc.).

The answer is positive for a non negligible share (8.09 percent) of respondents. Surprisingly this question is not so strictly correlated to low scores of the life satisfaction or life sense questions, that is, to cognitive or eudaimonic subjective wellbeing. The number of individuals reporting a level of happiness below 5, only in part corresponds to those saying they are depressed. More specifically, we have in our sample 4,319 individuals declaring both depression and happiness levels below 5, but also 6,893 individuals declaring depression but happiness level not below 5 and 8,901 individuals declaring happiness level below 5 but not depression. Depression therefore does not merely coincide with low scores given to the happiness question, since cases of coincidence are slightly more than 20 percent of all cases.e therefore argue that the investigation on the drivers of depression deserves a specific focus, different from a mere interpretation in the opposite direction of drivers of life satisfaction and life sense. Given that depression is more strictly correlated to despair than low levels of life satisfaction we argue that this is the closest and most relevant focus if we want to understand and prevent despair.

Descriptive findings on the other variables used in the empirical analysis that follows are shown in Table 1. Slightly less than half of the sample is of male gender (46.25 percent), the average number of members in the household is 2.69. With regard to marital status around 9 percent of respondents are divorced, 9 percent widowed while 28 percent never married nor created a civil union. Around 19.5 percent of the respondents find it difficult to live with the present income.

3. The econometric specification

We estimate a specification exploiting information on depression coming from three different ESS waves (5, 6 and 7).

The estimated logit specification is

(1) $Depression_{i,t}$

$$= \alpha_0 + \alpha_1 Male_{i,t} + \sum_m \beta_m \, DIncomeDeciles_{i,t} + \sum_k \gamma_k \, DAgeClass_{i,t}$$

$$+ \sum_l \delta_l \, DMaritalStatus_{i,t} + \sum_o \lambda_o DEducationStatus_{i,t}$$

$$+ \sum_v \zeta_v \, DSocialMeeting_{i,t} + \sum_g \vartheta_g \, DLeftRightScale_{i,t} + \sum_s \rho_s DSelfHealth_{i,t}$$

$$+ \sum_n \varphi_n DFeelingOnIncome_{i,t} + \sum_j \psi_j \, DCountry_i + \sum_u \tau_u \, DWave_t + \varepsilon_{i,t}$$

where the dependent variable (Depression) is a 0/1 dummy taking unit value if the respondent answers that she/he has been depressed most of times or all time in the last week. Controls include a 0/1 gender dummy taking value one for male respondents, dummies for income deciles capturing relative income position of the respondent in her/his country, 10-year age class dummies to take into account the presumed nonlinear effect of ageing on depression. Marital status dummies include all questionnaire items (In a civil partnership, Formerly in civil partnership, now dissolved, Formerly in civil partnership, partner died, Separated (still legally married), Separated (still in a civil partnership), Divorced, Widowed, Never married and Never in Civil Partnership) except for the married status omitted benchmark. The specification also includes education dummies based on the standard ISCED[3] classification (less than lower secondary, lower secondary, lower tier upper secondary, upper tier upper secondary, advanced vocational, sub-degree, lower tertiary education, higher tertiary education). We use here as omitted benchmark education positions not harmonisable in the ISCED

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[3] ISCED is the International Standard Classification of Education created by UNESCO to harmonize education levels of different countries into common categories (those corresponding to the education dummies introduced in our estimate). For details see http://uis.unesco.org/en/topic/international-standard-classification-education-isced

classification. Other controls include dummies for placement on a 0-10 left-right political scale (the extreme left 0 class being the omitted benchmark) and dummies for the frequency of social meetings (Less than once a month, Once a month, Several times a month, Once a week, Several times a week, Every day) with "never" being the omitted benchmark. The estimate finally includes dummies for each country of origin (Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Israel, Czech Republic, Poland, Ireland, Luxembourg, Hungary, Portugal, Slovenia, Estonia and Croatia), with Albania being the omitted benchmark and standard errors are clustered at country level.

4. Empirical findings

Full estimates findings from four specifications gradually adding variables up to the fully-augmented specification presented in section 3 are shown in Table 2, while Tables A1-A9 and Figures A1-A9 in the Appendix describe more in detail the effect of each regressor of interest on the probability of falling into depression in the benchmark specification.

A first factor significantly correlated with the dependent variable is gender, with males having a 2 percent lower probability of falling into depression vis-à-vis the omitted benchmark of females. While reverse causality is obviously excluded here (sex changes when they occur are irrelevant in term of numbers on such big samples) some forms of endogeneity cannot be excluded since omitted variables affecting both male gender and the probability of depression can exist. Note that our gender finding is in sharp contrast with evidence on drivers of the upper side of subjective wellbeing in the literature where female gender is usually found as having a positive correlation with life satisfaction and life sense.[4]

The effect of self-assessed health is as expected very strong. Individuals declaring that their health is very bad (the worst possible answer) have a 30 percent higher probability of being depressed than those declaring that their health is very good (the omitted benchmark) (Table A6 and Figure A6). Even though the direct causality link seems the best candidate to explain this correlation, reverse causality here cannot be excluded: if it is likely that a serious health shock brings depression, it is as well possible that depressed individuals are more likely to suffer from health deterioration.

When we look at age results we find that the seventies are the best decade (0.5 percent lower probability of falling into depression than the omitted benchmark of the 80es), while all younger age cohorts register a higher probability of depression probably due to much higher expectations, time pressure and commitment (3 percent higher probability for those on the thirties) (Table A1 and Figure A1). These findings are consistent with the Deaton and Case (2015) interpretation of the despair death phenomenon in the US concentrating in middle age cohorts where high expectations are an important concurring factor. They as well suggest that ageing is not per se a depressing factor once controlling for health and all other included regressors. More specifically, based on our findings, it is not ageing per se that can lead to depression but the combination of poorer relational life and reduced health that may associate depression with age.

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[4] An interpretation in the literature for this gender happiness paradox is a difference in affect intensity leading females to have a stronger emotional reaction to life events (Fuijta et al. 1991; Diener et al. 1985).

Marital status findings are not at odds with the hypothesis that investing in an affective relationship with a partner is a high risk activity (as it occurs for any relational good where there is a coordination failure problem since the individual investment is not enough to guarantee the enjoyment of the good) (Table A5 and Figure A5).[5] Bad outcomes such as separation, divorce and widowhood increase significantly the probability of depression vis-à-vis the omitted benchmark of the married and/or civil union status. The magnitude of the effect is much higher in case of separation (around 4 percent against 1.6-1.7 percent). Non investing at all in affective relationships (the never married/never civil union status) also has a slight potentially depressing effect (0.6 percent).

Placement into higher income deciles has a progressive depression reducing effect with individuals in the top income deciles registering a 5 percent lower probability of depression than those in the lowest income decile (Table A2 and Figure A2). Again, this is a finding in contrast with what found in the life satisfaction literature with the Easterlin paradox, even though the core of the paradox is a non-positive relationship between per capita GDP growth and the share of very happy people.[6]

Human relationships (beyond affective with partner) are again an important driver since respondents declaring to meet for social (recreational) purposes with friends, relatives or colleagues every day register an around 9 percent lower probability of depression than those never doing it (Table A7 and figure A7). As for the case of health, endogeneity and reverse causality cannot be excluded here since individuals with more extroverted psychological traits are more likely to have a lively social life and less likely to be depressed. As well, absence of depression leads to a more lively social life.[7]

Education has an important direct effect since individuals with less than lower secondary degree have an around 3 percent higher probability of depression than those with high level post-university degree

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[5] The literature defines relational good as the enjoyment arising from the common consent or quality of relationship with other human beings in a common activity. As such, relational goods are a particular kind of local public goods characterised by local non excludability and anti-rivalry. (Gui, 1987; Ulhaner, 1989; Becchetti et al. 2011; Antoci et al., 2007; Corneo, 2005; Jenkins and Osberg, 2004 and Randon et al., 2008). This is because a relationship (in a club, in a social meeting) may be enjoyed only by those who are invited to take part (local non excludability). At the same time relational goods are more than simply non rival goods as typical public goods. This is because other human beings are essential for their enjoyment and not just non rival for the enjoyment itself (anti-rivalry). Quality of relational goods depends on mutual investment that is subject to coordination failure. Individual will is a necessary but not sufficient condition for production, consumption and investment in them since the latter require consent and participation also from the partners with whom the relational good is produced.

[6] The origin of the paradox in the descriptive evidence about the decoupling between per capita GDP and the share of very happy people in the US after the Second World War. The result therefore relates to the aggregate change of the two variables over time and not to a within effect for single respondents. The paradox is confirmed by Frey and Stutzer (2002) for a large sample of countries, and by Blanchflower and Oswald (2004) for the United States, United Kingdom, Belgium and Japan, between the early 1970s and late 1990s. Stevenson and Wolfers (2008) find that the decoupling does not occur when looking at per capita GDP and individual income. Easterlin and Angelescu (2009) argue that the paradox remains when looking at long term nexus between happiness and per capita GDP at country level. Bartolini et al. (2008) observe that deterioration of social capital accounts for part of the paradox in the US.

[7] Becchetti, Pelloni and Rossetti (2008) find that the relationship between social life and subjective wellbeing hides a two-way causation when the dependent variable is life satisfaction

(Table A3 and Figure A3). In order to evaluate the total effect of education on depression we should sum up to this direct effect two indirect effects accruing through income and health if we consider the microeconomic literature on returns to schooling and the literature on the nexus between education and health. Self-declared political orientation at the extreme left is the worst in terms of effects on depression indicating broadly a 1 percent higher probability of depression than all other locations.

If we interpret magnitudes of our coefficients in terms of ranking we observe that health is the strongest driver, followed by social relationships, affective relationships with the partner, income and education.

We as well introduce in our specification an income satisfaction variable. EES respondents are asked whether it is possible to live comfortably with their present income. The variable captures income and wealth related factors not measured by other regressors (income deciles, number of household members) but also income expectations. The variable is strongly significant. Individuals giving the more negative response (very difficult to live comfortably with present income) have a 9 percent higher probability of getting depressed (Table A9 and Figure A9).

Concerning country effects, only one country (the Czech Republic) reports a positive and significant coefficient, that is, a higher probability for respondents living there to be depressed with respect to the omitted benchmark of Albania. Other two countries (Poland and Hungary) are not significantly different from Albania (Table 2.1). All other countries have negative sign (lower probability of falling into depression vis-à-vis Albania). As is well known, country effects are affected by cultural factors and by the same meaning given to the world "depression" that may vary across cultures. Unfortunately the ESS survey does not contain vignettes that are used in the literature to control for these cultural effects.[8]

A relevant implication of our estimates is that less than one third of the variability in depression explained by the model is accounted for by monetary variables (income level and satisfaction about income) (Table 2.2). Around one third is explained by socio-demographic variables (gender, age, household composition), while another third depend on non monetary factors such as education, health and relational life.

We estimate a second fully augmented specification in order to exploit interesting information provided by the third ESS wave (Tables 3 and 3.1).

We can use here an interesting proxy for competition status where individuals are asked how important is to compare with other people income. We find that answering with the highest point on a 0-6 scale (very important) is associated with a 2 percent higher probability of falling into a depression state (Table 3). This finding, combined with those commented above, indicates the ambiguous and multifaceted effect of relationships on subjective (ill)being. The others are those without whom you cannot build and enjoy social relationships, but become "hell" (as in the famous

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[8] Vignettes are widely used in the empirical literature (when available) to correct for cultural differences by using scores given by respondents to the same observed situation (Corrado and Weeks, 2010; King and Wand, 2007). The approach has however limits and it works only when the two assumptions of vignette equivalence (vignette scenarios perceived without significant differences by respondents) and response consistency (use of response category in the same way in self-assessment and evaluation of the vignette scenario) are met. These two assumption are however often rejected in empirical tests (Bago d'Uva et al., 2009; Ferrer-I-Carbonell et al., 2010).

Sartre quote) when they become competitors in the race for status. They are also those who can make you unhappy in case of negative events or outcomes in affective relationships that otherwise positively contribute to wellbeing.

5. Conclusions

The surprising and unexpected inversion in the falling worldwide mortality trends for the with non-Hispanic middle age class in the US (also defined as the "despair death crisis") has stimulated economists, social scientists and policymakers to focus their attention not only on the right tail of the happiness distribution.

With the goal of providing useful information to prevent a despair death crisis in Europe we investigate drivers of depression (a condition which may lead in the worst cases to despair death) in European countries. A first important result is that factors affecting depression are not just the inverse of those affecting the probability of being satisfied about life. The most important paradox, consistently with the previous literature, concerns the gender effect with female gender having a higher likelihood than male gender to be both depressed or very happy.

A second important finding is that non monetary factors play an important role accounting for around two third of the explained variability of depression in our sample.

Depression is a worldwide phenomenon with deep social and economic costs ranging from productivity losses to increased health expenditure. This is why policy implications from the analysis of their drivers are of foremost importance. A policy suggestion stemming from our analysis is that the "poverty of sense of life illness" leading to depression in EES countries cannot be cured only with redistribution policies based on income transfers. Even though income class and (un)satisfaction with income play an important role a fundamental part of the illness is determined by non monetary factors related to education, health, relational life and status anxiety.

Investment in health, education and in policies aimed at fostering relational life (work-life balance) should therefore play a crucial role in preventing the occurrence of a similar crisis in Europe. Cultural developments that de-emphasize positional competition and emphasize the value of human beings beyond their economic and social performance could also play an important role.

References

Antoci, Angelo, Pier Luigi Sacco, and Paolo Vanin. "Social capital accumulation and the evolution of social participation." *The Journal of Socio-Economics* 36.1 (2007): 128-143.

Bartolini, Stefano, et al. "American Decline in Social Capital and Happiness. Is there a Linkage? mimeo." *University of Siena*. 2009.

Becchetti, Leonardo, Alessandra Pelloni, and Fiammetta Rossetti. "Relational goods, sociability, and happiness." *Kyklos*61.3 (2008): 343-363.

Becchetti, Leonardo, and Alessandra Pelloni. "What are we learning from the life satisfaction literature?." *International review of economics* 60.2 (2013): 113-155.

Becchetti, Leonardo, Maria Bachelet, and Fabio Pisani. "Poor eudaimonic subjective wellbeing as a mortality risk factor." *Economia Politica* 36.1 (2019): 245-272.

Becchetti, Leonardo, Giovanni Trovato, and David Andres Londono Bedoya. "Income, relational goods and happiness." *Applied Economics* 43.3 (2011): 273-290.

Blanchflower, David G., and Andrew J. Oswald. "Well-being over time in Britain and the USA." *Journal of public economics* 88.7-8 (2004): 1359-1386.

Case, Anne, and Angus Deaton. "Rising midlife morbidity and mortality, US whites." *Proceedings of the National Academy of Sciences* 112.49 (2015): 15078-15083.

Case, Anne, and Angus Deaton. "Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century." *Proceedings of the National Academy of Sciences*112.49 (2015): 15078-15083.

Case, Anne, and Angus Deaton. "Mortality and morbidity in the 21st century." *Brookings papers on economic activity* 2017.1 (2017): 397-476.

Corneo, Giacomo. "Work and television." *European Journal of Political Economy* 21.1 (2005): 99-113.

Corrado, Luisa, and Melvyn Weeks. "Identification strategies in survey response using vignettes." (2010).

Diener, Ed, Ed Sandvik, and Randy J. Larsen. "Age and sex effects for emotional intensity." *Developmental Psychology* 21.3 (1985): 542.

Dow, William H., et al. *Can Economic Policies Reduce Deaths of Despair?*. No. w25787. National Bureau of Economic Research, 2019.

Durkheim, Emile. "1951." *Suicide: A study in sociology* (1897).

Easterlin, Richard A., and Laura Angelescu. "Happiness and growth the world over: Time series evidence on the happiness-income paradox." (2009).

Evans-Lacko, Sara, and Martin Knapp. "Cost of depression in the workplace across eight diverse countries– collectively US $250 billion." *LSE Health and Social Care* (2016).

Ferrer-i-Carbonell, Ada, Bernard MS Van Praag, and Ioannis Theodossiou. "Vignette equivalence and response consistency: The case of job satisfaction." (2011).

Frey, Bruno S., and Alois Stutzer. "What can economists learn from happiness research?." *Journal of Economic literature* 40.2 (2002): 402-435.

Fujita, Frank, Ed Diener, and Ed Sandvik. "Gender differences in negative affect and well-being: the case for emotional intensity." *Journal of personality and social psychology* 61.3 (1991): 427.

Gui, Benedetto. "Eléments pour une définition d'économie communautaire." *Notes et documents* 19.20 (1987): 32-42.

Jenkins, Stephen P., and Lars Osberg. "Nobody to play with? The implications of leisure coordination." *Contributions to Economic Analysis* 271 (2004): 113-145.

King, Gary, and Jonathan Wand. "Comparing incomparable survey responses: Evaluating and selecting anchoring vignettes." *Political Analysis* 15.1 (2007): 46-66.

Masters, Ryan K., Andrea M. Tilstra, and Daniel H. Simon. "Explaining recent mortality trends among younger and middle-aged white Americans." *International journal of epidemiology*47.1 (2018): 81-88.

Diez Roux, Ana V. "Despair as a cause of death: more complex than it first appears." (2017): 1566-1567.

Randon, Emanuela, Luigino Bruni, and Ahmad Naimzada. "Dynamics of relational goods." *International review of economics* 55.1-2 (2008): 113-125.

Ruhm, Christopher J. "Drivers of the fatal drug epidemic." *Journal of health economics* 64 (2019): 25-42.

Ruhm, Christopher J. *Deaths of despair or drug problems?*. No. w24188. National Bureau of Economic Research, 2018.

Stevenson, Betsey, and Justin Wolfers. *Economic growth and subjective well-being: Reassessing the Easterlin paradox*. No. w14282. National Bureau of Economic Research, 2008.

Uhlaner, Carole Jean. ""Relational goods" and participation: Incorporating sociability into a theory of rational action." *Public choice* 62.3 (1989): 253-285.

d'Uva, Teresa Bago, Andrew M. Jones, and Eddy Van Doorslaer. "Measurement of horizontal inequity in health care utilisation using European panel data." *Journal of health economics* 28.2 (2009): 280-289.

Weissman, Myrna M., et al. "Offspring of depressed parents: 30 years later." *American Journal of Psychiatry* 173.10 (2016): 1024-1032.

Variable	Description
	Dependent variables
Depression	Dummy variable=1 if the respondent is depressed and 0 otherwise.
	Independent variables
Age class	0/1dummies for the following age groups: Age 0-19; Age 20-29; Age 30-39; Age 40-49; Age 50-59; Age 60-69; Age 70-79; Age 80-89; Age 90+.
Education status	ISCED (International Standard Classification of Education) levels: Zero level of education meaning no education or unfinished first level of education. First level (primary education or first stage basic education), second level (lower secondary or second stage of basic education), third level (upper secondary education), fourth level (post-secondary non tertiary education), fifth level (first stage of tertiary education), sixth level (second stage of tertiary education).
Male	Dummy variable = 1 if the respondent's gender is male and 0 otherwise.
Income	Yearly household income after taxes and social insurance contributions.
Marital status	Marital status categorical variable: 1=Married, 2= Registered Partner; 3= Divorced 4= Separated; 5= Widowed
Household Size	Number of people leaving regularly as member of household
Self health	Self-assessed health status: 1=Very good health, 2=Good health, 3= Fair health, 4=bad Health, 4=Very bad health.
Social meeting	Categorical variable that measures how often socially meet with friends, relatives or colleagues: 1=Never, 2=Less than once a month, 3=Once a month, 4=Several times a month, 5=Once a week, 6=Several times a week, 7=Every day.
Placement on the left right scale	Categorical variable that indicates political preferences based on a 0-10 scale. The 0 is associated with the extreme left political preference, while 10 is associated with the extreme right political preference.
Maximum importance to compare income with other people's income	Dummy variable = 1 if the respondent believes very important the comparison with other people's income
Proxy for the Wealth/ Feeling about income	Categorical variable that indicates the feeling about the income nowadays, in this case is used as proxy for the Wealth. 1= Living comfortably on present income, 2=Copying on present income, 3=Difficult on present income, 4=Very difficult on present income.
Wave	2008 wave, 2010 wave, 2012 wave, 2014 wave, 2016 wave.
Country	Albania, Austria, Germany, Sweden, Netherlands, Norway, Spain, Finland, Italy, France, Denmark, Greece, Switzerland, Belgium, Iceland, Israel, Bulgaria, Cyprus, United Kingdom, Czech Republic, Poland, Ireland, Ukraine, Turkey, Kosovo Hungary, Slovakia, Portugal, Slovenia, Estonia, Romania, Russian Federation, Lithuania, Latvia and Croatia

Table 1 Descriptive statistics

Variable	Obs	Density
Depression	94.269	0.076
Household's total net income	153.662	
1		0.106
2		0.115
3		0.112
4		0.111
5		0.107
6		0.103
7		0.099
8		0.093
9		0.074
10		0.075
Male	193.893	0.462
Age class	193.962	
0-19		0.055
20-29		0.134
30-39		0.154
40-49		0.166
50-59		0.170
60-69		0.160
70-79		0.107
80-89		0.043
90+		0.007
Country	193.962	
Albania		0.006
Austria		0.031
Belgium		0.036
Bulgaria		0.024
Switzerland		0.031
Cyprus		0.011
Czech Republic		0.045
Germany		0.061
Denmark		0.024
Estonia		0.042
Spain		0.039
Finland		0.041
France		0.039
United Kingdom		0.046
reece		0.013

Variable	Obs	Density
Social meeting	192.596	
Never		0.020
Less than once a month		0.089
Once a month		0.101
Several times a month		0.198
Once a week		0.177
Several times a week		0.264
Every day		0.148
Self health	193.656	
Very good		0.234
Good		0.407
Fair		0.269
Bad		0.072
Very bad		0.015
Feeling about Household's income nowadays	191.608	
Living comfortably on present income		0.264
Copying on present income		0.444
Difficult on present income		0.195
Very difficult on present income		0.085
Placement on left right scale	166.770	
0		0.037
1		0.024
2		0.547
3		0.095
4		0.096
5		0.329
6		0.098
7		0.107
8		0.084
9		0.028
10		0.042
Education status	193.962	
No or unfinished		0
Primary		0.106
Lower Secondary		0.171
Upper Secondary		0.152
Post-Secondary, non Tertiary		0.209
First level Tertiary		0.133
Second level Tertiary		0.097

Croatia	0.008	Marital Status	193.962	
Hungary	0.035	Married		0.019
Ireland	0.053	Registered partner		0.002
Israel	0.051	Separated		0.005
Iceland	0.008	Never married		0.284
Italy	0.018	Divorced		0.092
Lithuania	0.042	Widowed		0.094
Netherlands	0.037			
Norway	0.031	Household size	193.665	2.693
Poland	0.035			
Portugal	0.035	Maximum importance to compare income with other people's income	22.998	0.054
Russian Federation	0.038			
Sweden	0.034	ESS Round	193.962	
Slovenia	0.026	5		0.282
Slovakia	0.019	6		0.281
Ukraine	0.021	7		0.207
Kosovo	0.006	8		0.228

Table 2 The determinants of depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Male	-0.209***	-0.189***	-0.176***	-0.177***
	(0.028)	(0.028)	(0.029)	(0.031)
Age class				
0-19	-0.226***	-0.243***	0.210***	0.296***
	(0.076)	(0.078)	(0.055)	(0.055)
20-29	-0.094*	-0.085	0.277***	0.269***
	(0.055)	(0.056)	(0.041)	(0.040)
30-39	-0.008	0.005	0.283***	0.236***
	(0.053)	(0.053)	(0.035)	(0.040)
40-49	0.046	0.055	0.246***	0.201***
	(0.045)	(0.045)	(0.032)	(0.033)
50-59	0.073**	0.089**	0.184***	0.146***
	(0.035)	(0.035)	(0.027)	(0.027)
60-69	-0.041	-0.026	0.026	0.016
	(0.025)	(0.025)	(0.027)	(0.030)
80-89	0.031	0.001	-0.085***	-0.048
	(0.030)	(0.030)	(0.032)	(0.039)
90+	-0.040	-0.070	-0.092	-0.014
	(0.078)	(0.078)	(0.076)	(0.091)
Household's income				
2	-0.184***	-0.174***	-0.126***	-0.019
	(0.028)	(0.028)	(0.029)	(0.038)
3	-0.313***	-0.292***	-0.197***	-0.046
	(0.036)	(0.037)	(0.032)	(0.037)
4	-0.387***	-0.356***	-0.241***	-0.051*
	(0.037)	(0.038)	(0.031)	(0.030)
5	-0.451***	-0.415***	-0.282***	-0.074**
	(0.043)	(0.045)	(0.036)	(0.036)
6	-0.525***	-0.486***	-0.333***	-0.089**
	(0.042)	(0.043)	(0.040)	(0.039)
7	-0.569***	-0.528***	-0.349***	-0.080*
	(0.050)	(0.052)	(0.047)	(0.048)
8	-0.625***	-0.581***	-0.397***	-0.103**
	(0.046)	(0.048)	(0.041)	(0.040)
9	-0.677***	-0.632***	-0.412***	-0.104**
	(0.060)	(0.061)	(0.052)	(0.048)
10	-0.795***	-0.751***	-0.528***	-0.217***
	(0.068)	(0.069)	(0.059)	(0.064)
Household size	-0.017**	0.000	0.003	-0.008
	(0.007)	(0.008)	(0.007)	(0.009)
Education status				
No or unfinished	0.225***	0.225***	0.110*	0.039
	(0.068)	(0.065)	(0.058)	(0.056)
Primary	0.404***	0.405***	0.230***	0.189***
	(0.031)	(0.031)	(0.033)	(0.037)
Lower Secondary	0.328***	0.326***	0.202***	0.155***
	(0.025)	(0.026)	(0.030)	(0.035)

Upper Secondary	0.156***	0.158***	0.088***	0.047*
	(0.027)	(0.027)	(0.029)	(0.028)
Post-Secondary	0.140***	0.140***	0.094***	0.075**
	(0.027)	(0.027)	(0.025)	(0.030)
First Level Tertiary	0.086***	0.086***	0.054**	0.029
	(0.027)	(0.027)	(0.025)	(0.029)
Second Level Tertiary	0.019	0.021	0.030	0.026
	(0.033)	(0.033)	(0.034)	(0.040)
Marital Status				
Registered partner		0.192***	0.151**	0.109
		(0.058)	(0.061)	(0.067)
Separated		0.302***	0.306***	0.330***
		(0.068)	(0.064)	(0.068)
Divorced		0.169***	0.169***	0.120***
		(0.024)	(0.023)	(0.025)
Widowed		0.201***	0.169***	0.156***
		(0.027)	(0.027)	(0.027)
Never Married		0.070***	0.080***	0.056***
		(0.018)	(0.018)	(0.020)
Self health				
Good			0.195***	0.206***
			(0.029)	(0.029)
Fair			0.598***	0.572***
			(0.034)	(0.033)
Bad			1.164***	1.084***
			(0.043)	(0.043)
Very Bad			1.664***	1.563***
			(0.067)	(0.071)
Social meeting				
Less than once a month			-0.273***	-0.289***
			(0.052)	(0.055)
Once a month			-0.435***	-0.409***
			(0.054)	(0.061)
Several times a month			-0.568***	-0.563***
			(0.048)	(0.050)
Once a week			-0.517***	-0.497***
			(0.051)	(0.052)
Several times a week			-0.600***	-0.566***
			(0.049)	(0.048)
Every day			-0.532***	-0.519***
			(0.045)	(0.048)
Placement on left right scale				
1				-0.094**
				(0.040)
2				-0.075*
				(0.043)
3				-0.076**
				(0.033)
4				-0.046
				(0.041)
5				-0.114***

				(0.029)
6				-0.100***
				(0.036)
7				-0.136***
				(0.039)
8				-0.050
				(0.034)
9				-0.116**
				(0.057)
10				-0.050
				(0.052)
Feeling about Household's income nowadays				
Copying on present income				0.102***
				(0.023)
Difficult on present income				0.348***
				(0.031)
Very difficult on present income				0.658***
				(0.040)
Wave				
6	-0.097*	-0.091*	-0.065	-0.069*
	(0.059)	(0.055)	(0.046)	(0.039)
7	-0.177***	-0.169***	-0.139***	-0.119***
	(0.050)	(0.048)	(0.042)	(0.037)
Country dummies	Yes	Yes	Yes	Yes
Constant	-0.679***	-0.816***	-1.027***	-1.358***
	(0.064)	(0.072)	(0.074)	(0.071)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

Omitted benchmarks: age class between 70-79; first (lowest income) class of the household's net income; "Upper Tertiary" class for education status; "Married" class for marital status; "Very Good" class of self-assessed health; "Never" class of social meeting; the 0 (extreme left) class of placement in the political opinion left-right scale; "Living Comfortably on present income" in the Feeling about Household's income question, Albania for country dummies.
MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2.1 The determinants of depression: country fixed effects

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Country				
Austria	-0.533***	-0.562***	-0.464***	-0.343***
	(0.031)	(0.030)	(0.028)	(0.032)
Belgium	-0.300***	-0.328***	-0.231***	-0.133***
	(0.026)	(0.027)	(0.028)	(0.031)
Bulgaria	-0.199***	-0.211***	-0.248***	-0.327***
	(0.024)	(0.023)	(0.020)	(0.021)
Switzerland	-0.529***	-0.550***	-0.395***	-0.235***
	(0.030)	(0.031)	(0.031)	(0.036)
Cyprus	-0.410***	-0.420***	-0.315***	-0.269***
	(0.022)	(0.021)	(0.021)	(0.023)
Czech Republic	0.094***	0.063**	0.103***	0.154***
	(0.024)	(0.025)	(0.025)	(0.028)
Germany	-0.275***	-0.292***	-0.349***	-0.195***
	(0.029)	(0.029)	(0.029)	(0.033)
Denmark	-0.579***	-0.602***	-0.514***	-0.330***
	(0.027)	(0.027)	(0.029)	(0.032)
Estonia	-0.126***	-0.158***	-0.341***	-0.291***
	(0.023)	(0.024)	(0.021)	(0.022)
Spain	-0.287***	-0.304***	-0.277***	-0.176***
	(0.020)	(0.020)	(0.021)	(0.027)
Finland	-0.835***	-0.857***	-0.783***	-0.662***
	(0.025)	(0.025)	(0.025)	(0.028)
France	-0.296***	-0.320***	-0.252***	-0.092***
	(0.027)	(0.026)	(0.027)	(0.030)
United Kingdom	-0.431***	-0.457***	-0.384***	-0.214***
	(0.024)	(0.025)	(0.024)	(0.028)
Hungary	0.286***	0.251***	0.051**	0.017
	(0.023)	(0.025)	(0.022)	(0.025)
Ireland	-0.616***	-0.636***	-0.477***	-0.326***
	(0.018)	(0.018)	(0.020)	(0.025)
Israel	-0.235***	-0.256***	-0.227***	-0.171***
	(0.016)	(0.017)	(0.017)	(0.021)
Iceland	-0.549***	-0.573***	-0.404***	-0.219***
	(0.010)	(0.012)	(0.014)	(0.019)
Italy	-0.444***	-0.453***	-0.381***	-0.248***
	(0.011)	(0.012)	(0.011)	(0.016)
Lithuania	-0.232***	-0.271***	-0.446***	-0.358***
	(0.023)	(0.025)	(0.024)	(0.027)
Latvia	-0.201***	-0.225***	-0.313***	-0.241***
	(0.058)	(0.054)	(0.047)	(0.047)
Netherlands	-0.565***	-0.595***	-0.495***	-0.361***
	(0.028)	(0.028)	(0.029)	(0.033)
Norway	-0.735***	-0.757***	-0.698***	-0.521***
	(0.027)	(0.027)	(0.028)	(0.030)
Poland	-0.058**	-0.078***	-0.147***	-0.020
	(0.026)	(0.025)	(0.024)	(0.030)
Portugal	-0.298***	-0.313***	-0.315***	-0.270***

	(0.026)	(0.026)	(0.024)	(0.025)
Russian Federation	0.014	-0.014	-0.222***	-0.161***
	(0.035)	(0.032)	(0.031)	(0.033)
Sweden	-0.495***	-0.519***	-0.400***	-0.235***
	(0.027)	(0.027)	(0.028)	(0.031)
Slovenia	-0.518***	-0.544***	-0.614***	-0.481***
	(0.027)	(0.026)	(0.024)	(0.027)
Slovakia	-0.198***	-0.219***	-0.243***	-0.197***
	(0.029)	(0.028)	(0.027)	(0.031)
Ukraine	0.155***	0.123***	-0.094***	-0.134***
	(0.018)	(0.019)	(0.021)	(0.024)
Kosovo	-0.227***	-0.257***	-0.198***	-0.053***
	(0.008)	(0.011)	(0.010)	(0.016)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

Country coefficients are those of the corresponding estimates of Table 2. Albania is the omitted benchmark. MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3.1 the determinants of depression by adding the Maximum importance to compare income with other people's income

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Maximum importance to compare income with other people's income				0.181***
				(0.052)
Male	-0.220***	-0.196***	-0.182***	-0.243***
	(0.041)	(0.042)	(0.046)	(0.064)
Age class				
0-19	-0.152	-0.168*	0.171**	0.441***
	(0.100)	(0.102)	(0.084)	(0.160)
20-29	-0.098**	-0.087*	0.181***	0.016
	(0.048)	(0.052)	(0.051)	(0.061)
30-39	-0.016	0.001	0.191***	-0.022
	(0.053)	(0.052)	(0.048)	(0.073)
40-49	0.027	0.048	0.176***	-0.040
	(0.046)	(0.047)	(0.045)	(0.070)
50-59	0.093**	0.123***	0.168***	-0.044
	(0.039)	(0.038)	(0.030)	(0.052)
60-69	-0.091*	-0.071	-0.082**	-0.212***
	(0.047)	(0.045)	(0.041)	(0.070)
80-89	0.018	-0.034	-0.155**	-
	(0.065)	(0.067)	(0.063)	
90+	0.120	0.097	0.068	0.045
	(0.126)	(0.131)	(0.162)	(0.248)
Household's income				
2	-0.234***	-0.209***	-0.140***	-0.135
	(0.065)	(0.070)	(0.046)	(0.082)
3	-0.348***	-0.318***	-0.195***	-0.099
	(0.083)	(0.089)	(0.058)	(0.078)
4	-0.464***	-0.436***	-0.261***	-0.008
	(0.091)	(0.094)	(0.073)	(0.069)
5	-0.571***	-0.533***	-0.317***	-0.104
	(0.086)	(0.091)	(0.065)	(0.096)
6	-0.686***	-0.639***	-0.382***	-0.037
	(0.089)	(0.094)	(0.071)	(0.105)
7	-0.774***	-0.720***	-0.419***	-0.073
	(0.089)	(0.098)	(0.075)	(0.097)
8	-0.879***	-0.824***	-0.533***	-0.206**
	(0.095)	(0.103)	(0.082)	(0.104)
9	-0.865***	-0.809***	-0.474***	-0.086
	(0.092)	(0.099)	(0.076)	(0.115)
10	-1.034***	-0.977***	-0.648***	-0.218
	(0.123)	(0.130)	(0.122)	(0.153)
Household size	-0.033***	-0.012	-0.012	-0.044**
	(0.011)	(0.009)	(0.011)	(0.020)
Education status				
No or unfinished	-0.154***	-0.161***	-0.209***	-0.324***
	(0.055)	(0.056)	(0.064)	(0.083)

Primary	0.400***	0.396***	0.198**	0.138
	(0.085)	(0.086)	(0.097)	(0.123)
Lower Secondary	0.276***	0.271***	0.164*	0.071
	(0.069)	(0.069)	(0.085)	(0.112)
Upper Secondary	0.104	0.106	0.035	-0.020
	(0.077)	(0.076)	(0.080)	(0.091)
Post-Secondary	0.066	0.068	0.046	0.043
	(0.052)	(0.052)	(0.055)	(0.065)
First Level Tertiary	0.015	0.019	-0.006	-0.059
	(0.066)	(0.065)	(0.075)	(0.082)
Second Level Tertiary	-0.003	0.000	0.013	-0.035
	(0.087)	(0.086)	(0.092)	(0.118)
Marital Status				
Registered partner		0.205***	0.187***	0.147
		(0.059)	(0.061)	(0.095)
Separated		-	-	-
Divorced		0.112**	0.116**	-0.011
		(0.056)	(0.058)	(0.118)
Widowed		0.250***	0.197***	0.282**
		(0.043)	(0.045)	(0.140)
Never Married		0.082	0.094**	0.009
		(0.050)	(0.048)	(0.079)
Self health				
Good			0.142***	0.118**
			(0.034)	(0.048)
Fair			0.561***	0.458***
			(0.052)	(0.064)
Bad			1.096***	0.965***
			(0.052)	(0.097)
Very Bad			1.681***	1.629***
			(0.081)	(0.277)
Social meeting				
Less than once a month			-0.306***	-0.095
			(0.074)	(0.156)
Once a month			-0.476***	-0.296*
			(0.096)	(0.157)
Several times a month			-0.586***	-0.423***
			(0.087)	(0.156)
Once a week			-0.552***	-0.385**
			(0.086)	(0.156)
Several times a week			-0.655***	-0.487***
			(0.075)	(0.151)
Every day			-0.541***	-0.368**
			(0.070)	(0.151)
Placement on left right scale				
1				-0.151
				(0.131)
2				-0.166
				(0.168)
3				-0.179

	(1)	(2)	(3)	(4)
				(0.109)
4				-0.122
				(0.122)
5				-0.118
				(0.111)
6				-0.162*
				(0.090)
7				-0.214**
				(0.108)
8				-0.178
				(0.113)
9				-0.172
				(0.202)
10				0.108
				(0.155)
Feeling about Household's income nowadays				
Copying on present income				0.120***
				(0.046)
Difficult on present income				0.346***
				(0.061)
Very difficult on present income				0.679***
				(0.122)
Constant	-0.608***	-0.790***	-0.936***	-1.001***
	(0.074)	(0.085)	(0.135)	(0.251)
Observations	29,869	29,869	29,704	13,966
R-Squared	0.091	0.095	0.169	0.143

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3.2 the Country effects on depression by adding the Maximum importance to compare income with other people's income: country fixed effects

	(1)	(2)	(3)	(4)
VARIABLES	Base	Base+MS	Base+SH+SM	Base+SH+SM+LR
Country				
Belgium	-0.070*	-0.073*	-0.000	-0.003
	(0.039)	(0.039)	(0.036)	(0.055)
Bulgaria	0.114*	0.144**	0.143***	0.142*
	(0.060)	(0.064)	(0.053)	(0.074)
Switzerland	-0.202***	-0.210***	-0.078*	-0.090
	(0.043)	(0.045)	(0.043)	(0.071)
Cyprus	-0.029***	-0.023**	-0.023	
	(0.008)	(0.009)	(0.014)	

Germany	-0.101***	-0.104***	-0.186***	-0.061
	(0.035)	(0.036)	(0.032)	(0.060)
Denmark	-0.379***	-0.385***	-0.326***	-0.212***
	(0.039)	(0.040)	(0.037)	(0.061)
Spain	-0.309***	-0.310***	-0.327***	-0.462***
	(0.051)	(0.050)	(0.043)	(0.057)
Finland	-0.345***	-0.337***	-0.328***	-0.260***
	(0.009)	(0.009)	(0.014)	(0.028)
France	0.004	-0.006	0.047	0.079
	(0.036)	(0.038)	(0.036)	(0.057)
United Kingdom	0.133***	0.123***	0.123***	0.061**
	(0.014)	(0.015)	(0.015)	(0.027)
Ireland	-0.138***	-0.147***	-0.088***	-0.074**
	(0.013)	(0.013)	(0.016)	(0.031)
Latvia	-0.104***	-0.107***	-0.162***	
	(0.014)	(0.013)	(0.014)	
Netherlands	-0.420***	-0.429***	-0.339***	-0.380***
	(0.038)	(0.040)	(0.038)	(0.058)
Norway	-0.447***	-0.453***	-0.432***	-0.497***
	(0.036)	(0.038)	(0.035)	(0.061)
Poland	0.052***	0.049***	0.015	0.015
	(0.012)	(0.010)	(0.011)	(0.023)
Portugal	0.222***	0.241***	0.153***	0.074*
	(0.026)	(0.029)	(0.029)	(0.044)
Russian Federation	-0.074*	-0.070*	-0.166***	-0.006
	(0.038)	(0.038)	(0.029)	(0.038)
Sweden	0.031**	0.035***	0.083***	0.134***
	(0.013)	(0.013)	(0.015)	(0.032)
Slovenia	-0.362***	-0.379***	-0.479***	-0.505***
	(0.016)	(0.017)	(0.016)	(0.032)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.095	0.169	0.143

Country coefficients are those of the corresponding estimates of Table 3. Albania is the omitted benchmark. MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Appendix - Tables and Graphs for Average marginal effects

Table A1. The average marginal effects of the self-assessed health on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Self health				
Good	0	0	0.015***	0.015***
			(0.002)	(0.002)
Fair	0	0	0.064***	0.057***
			(0.003)	(0.003)
Bad	0	0	0.187***	0.158***
			(0.008)	(0.008)
Very bad	0	0	0.347***	0.300***
			(0.018)	(0.020)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The "very good" class of the self-health is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure A1. The average marginal effects of the self-assessed health on Depression
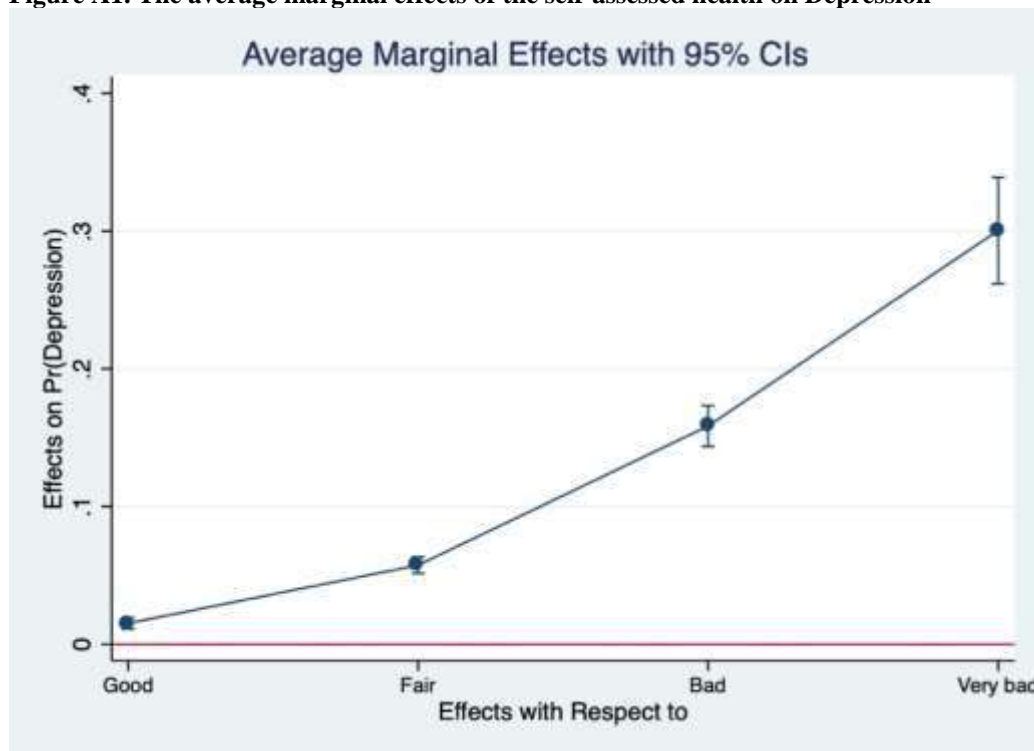
Table A1, Column (4) estimate. The "very good" class of the self-health is the omitted benchmark.

Table A2. The average marginal effects of Age class on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Age class				
0-19	-0.030***	-0.032***	0.025***	0.033***
	(0.010)	(0.010)	(0.007)	(0.006)
20-29	-0.013*	-0.011	0.033***	0.030***
	(0.007)	(0.007)	(0.005)	(0.004)
30-39	-0.001	0.001	0.034***	0.026***
	(0.007)	(0.007)	(0.004)	(0.004)
40-49	0.006	0.007	0.030***	0.022***
	(0.006)	(0.006)	(0.004)	(0.004)
50-59	0.010**	0.012**	0.022***	0.016***
	(0.005)	(0.005)	(0.003)	(0.003)
60-69	-0.005	-0.003	0.003	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
80-89	0.004	0.000	-0.010***	-0.005
	(0.004)	(0.004)	(0.004)	(0.004)
90+	-0.005	-0.009	-0.011	-0.002
	(0.010)	(0.010)	(0.009)	(0.010)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The age class between 70-79 is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

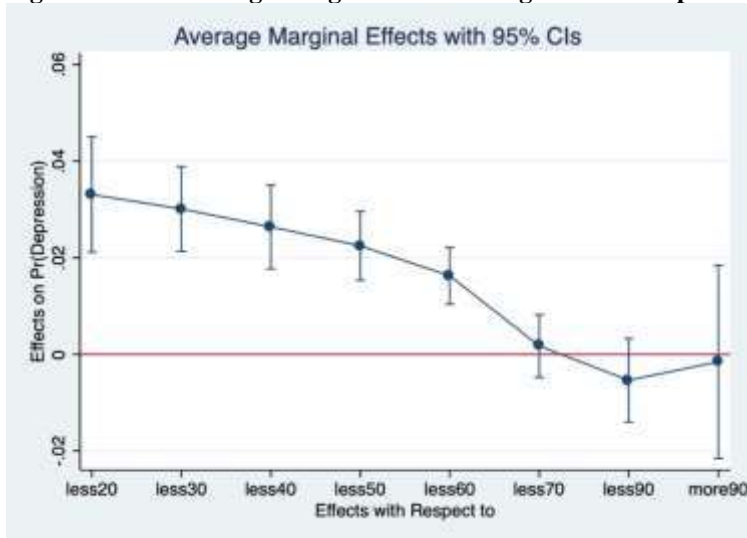**Figure A2. The average marginal effects of Age class on Depression**

Table A2, Column (4) estimate. The age class between 70-79 is the omitted benchmark.

Table A3. The average marginal effects of the Marital status on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Marital status				
civilunion	0	0.025***	0.018**	0.012
		(0.008)	(0.007)	(0.007)
separated	0	0.040***	0.037***	0.037***
		(0.009)	(0.008)	(0.008)
divorced	0	0.022***	0.020***	0.013***
		(0.003)	(0.003)	(0.003)
widowed	0	0.027***	0.020***	0.017***
		(0.004)	(0.003)	(0.003)
nevmarnevciv	0	0.009***	0.010***	0.006***
		(0.002)	(0.002)	(0.002)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The "married" class of marital status is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

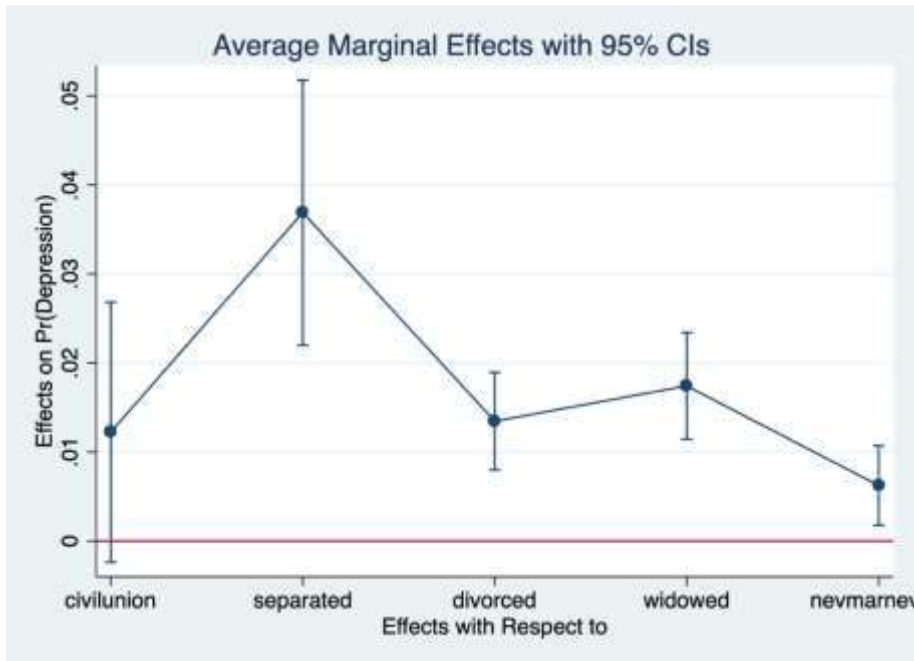**Figure A3. The average marginal effects of the Marital status on Depression**

Table A3, Column (4) estimate. The "married" class of marital status is the omitted benchmark.

Table A4. The average marginal effects of Household's total net income on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Household's total net income				
2	-0.037***	-0.034***	-0.019***	-0.002
	(0.006)	(0.006)	(0.005)	(0.005)
3	-0.058***	-0.053***	-0.029***	-0.005
	(0.007)	(0.007)	(0.005)	(0.004)
4	-0.069***	-0.062***	-0.035***	-0.006*
	(0.007)	(0.007)	(0.005)	(0.004)
5	-0.077***	-0.070***	-0.040***	-0.009**
	(0.008)	(0.008)	(0.005)	(0.004)
6	-0.086***	-0.078***	-0.046***	-0.010**
	(0.008)	(0.008)	(0.006)	(0.005)
7	-0.091***	-0.083***	-0.047***	-0.009*
	(0.009)	(0.009)	(0.007)	(0.006)
8	-0.097***	-0.089***	-0.052***	-0.012**
	(0.008)	(0.008)	(0.006)	(0.005)
9	-0.102***	-0.093***	-0.054***	-0.012**
	(0.009)	(0.009)	(0.007)	(0.006)
10	-0.111***	-0.103***	-0.064***	-0.023***
	(0.009)	(0.009)	(0.007)	(0.007)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The first (lowest income) class of the household's net income is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

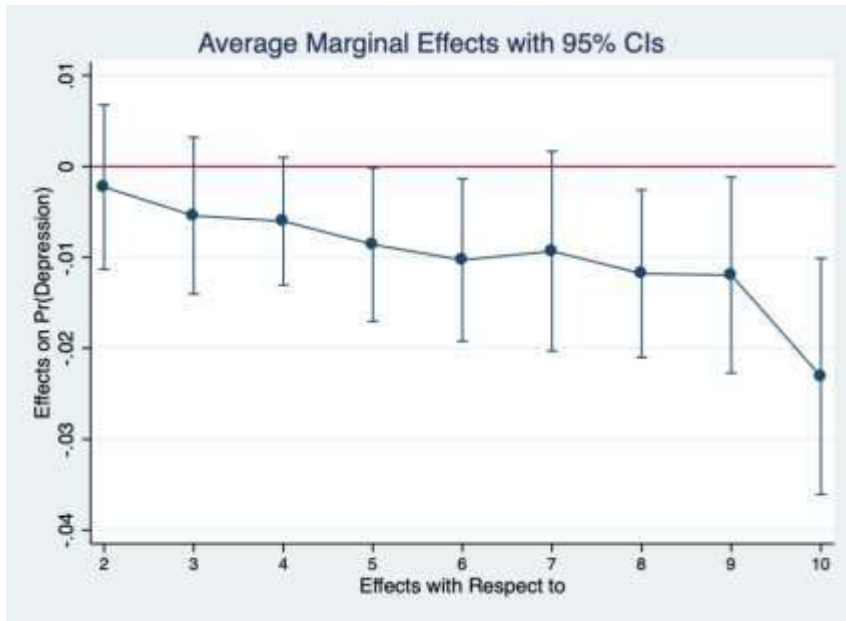**Figure A4. The average marginal effects of Household's total net income on Depression**

Table A4, Column (4) estimate. The first (lowest income) class of the household's net income is the omitted benchmark.

Table A5. The average marginal effects of the social meetings on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Social meeting				
Less than once a month	0	0	-0.050***	-0.049***
			(0.010)	(0.010)
Once a month	0	0	-0.074***	-0.065***
			(0.010)	(0.011)
Several times a month	0	0	-0.090***	-0.082***
			(0.010)	(0.009)
Once a week	0	0	-0.084***	-0.075***
			(0.010)	(0.009)
Several times a week	0	0	-0.093***	-0.083***
			(0.010)	(0.009)
Every day	0	0	-0.086***	-0.078***
			(0.009)	(0.009)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The "never" class of the social meeting is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure A5. The average marginal effects of the social meetings on Depression

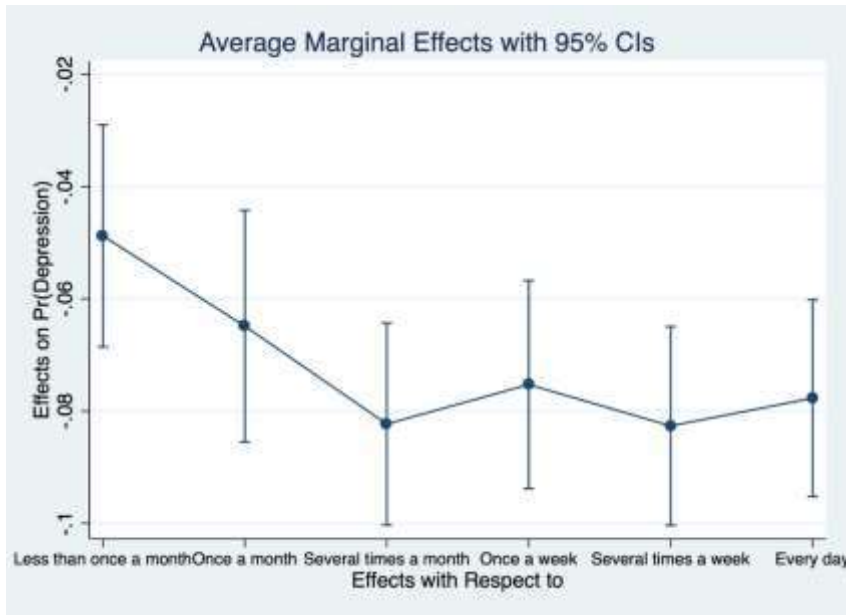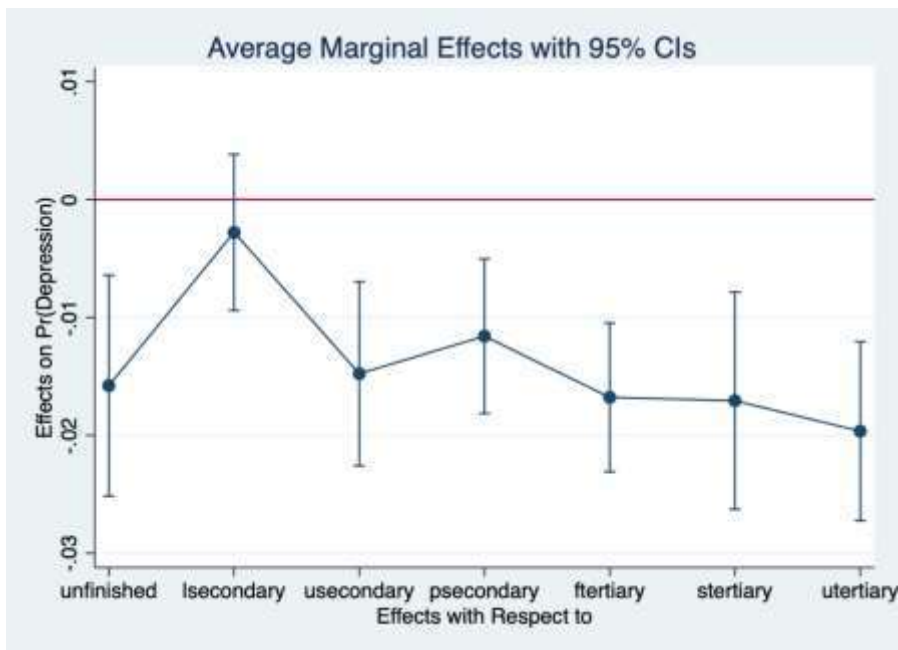Average Marginal Effects with 95% CIs

Table A5, Column (4) estimate. The "never" class of the social meeting is the omitted benchmark

Table A6 The average marginal effects of Educational status on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Education status				
No or unfinished	-0.022***	-0.022***	-0.013**	-0.016***
	(0.008)	(0.008)	(0.006)	(0.005)
Lower Secondary	-0.008**	-0.009**	-0.002	-0.003
	(0.004)	(0.004)	(0.004)	(0.003)
Upper Secondary	-0.031***	-0.031***	-0.016***	-0.015***
	(0.005)	(0.005)	(0.004)	(0.004)
Post-Secondary, non Tertiary	-0.033***	-0.033***	-0.015***	-0.012***
	(0.004)	(0.004)	(0.003)	(0.003)
First level Tertiary	-0.040***	-0.040***	-0.020***	-0.017***
	(0.004)	(0.004)	(0.003)	(0.003)
Second level Tertiary	-0.049***	-0.049***	-0.023***	-0.017***
	(0.006)	(0.006)	(0.005)	(0.005)
Upper Tertiary	-0.052***	-0.052***	-0.026***	-0.020***
	(0.004)	(0.004)	(0.004)	(0.004)
Observations	105,319	105,319	104,506	92,582

R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The "primary" class of educational status is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure A6 The average marginal effects of Educational status on Depression

Table A6, Column (4) estimate. The primary class of education status is the omitted benchmark.

Table A7. The average marginal effects of the ESS round on Depression

	(1)	(2)	(3)	(4)
VARIABLES	Base	Base+MS	Base+SH+SM	Base+SH+SM+LR
ESS round				
6	-0.014	-0.013	-0.008	-0.008*
	(0.008)	(0.008)	(0.006)	(0.005)
7	-0.024***	-0.022***	-0.017***	-0.013***
	(0.007)	(0.007)	(0.005)	(0.004)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The eight wave is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure A7. The average marginal effects of the ESS round on Depression
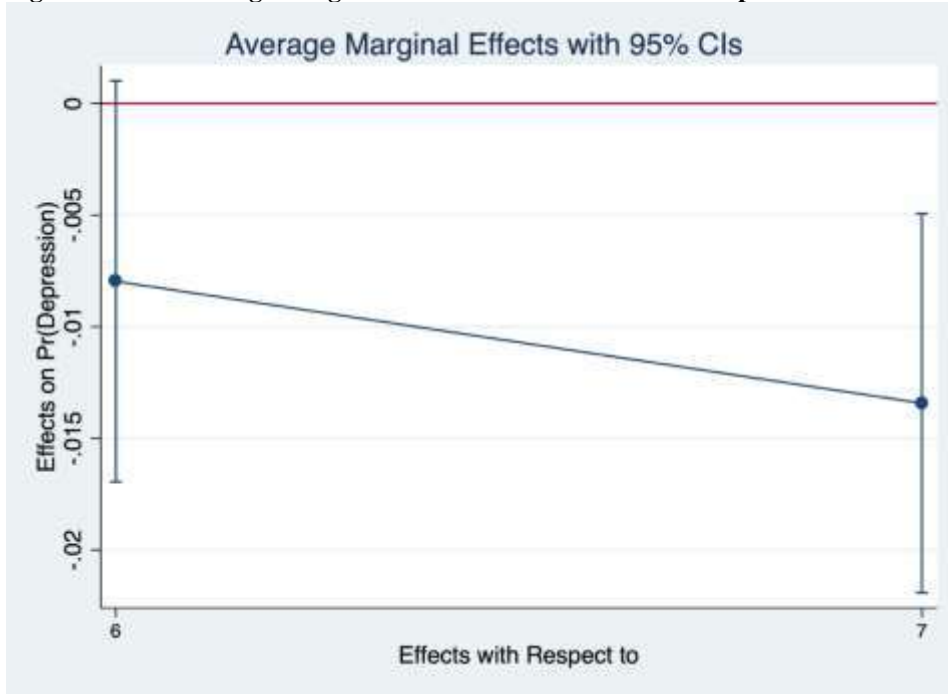

Table A7, Column (4) estimate. The (last) eight wave is the omitted benchmark.

Table A8. The average marginal effects of the Placement on left right scale on Depression

VARIABLES	(1) Base	(2) Base+MS	(3) Base+SH+SM	(4) Base+SH+SM+LR
Placement on left right scale				
1	0	0	0	-0.011**
				(0.005)
2	0	0	0	-0.009*
				(0.005)
3	0	0	0	-0.009**
				(0.004)
4	0	0	0	-0.006
				(0.005)
5	0	0	0	-0.013***
				(0.004)
6	0	0	0	-0.012***

	(1)	(2)	(3)	(4)
				(0.004)
7	0	0	0	-0.016***
				(0.005)
8	0	0	0	-0.006
				(0.004)
9	0	0	0	-0.013**
				(0.006)
10	0	0	0	-0.006
				(0.006)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The 0 class (extreme left) of the Placement on the left right scale is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

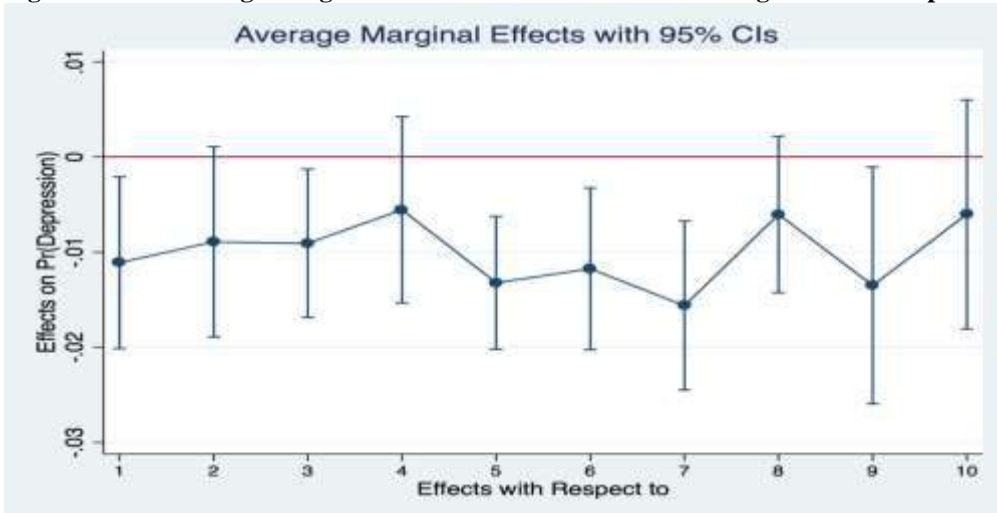**Figure A8 The average marginal effects of the Placement on left right scale on Depression**

Table A8, Column (4) estimate. The 0 class (extreme left) of the Placement on the left right scale is the omitted benchmark

Table A9. The average marginal effects of the Feeling about Household's income nowadays on Depression

	(1)	(2)	(3)	(4)
VARIABLES	Base	Base+MS	Base+SH+SM	Base+SH+SM+LR
Feeling about Household's income nowadays				
Copying on present income	0	0	0	0.009***
				(0.002)
Difficult on present income	0	0	0	0.039***
				(0.004)
Very difficult on present income	0	0	0	0.090***
				(0.006)
Observations	105,319	105,319	104,506	92,582
R-Squared	0.091	0.093	0.170	0.175

MS: Marital status levels also taken into account. SH: Self health levels also taken into account. SM: social meeting levels also taken into account. LR: Placement on left right scale also taken into account. The "Living comfortably on present income" class of the Feeling about Household's income nowadays is the omitted benchmark. Sample survival indicates the marginal effects of the covariates on the survival across waves. Clustered (for country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Figure A9. The average marginal effects of the Feeling about Household's income nowadays on Depression
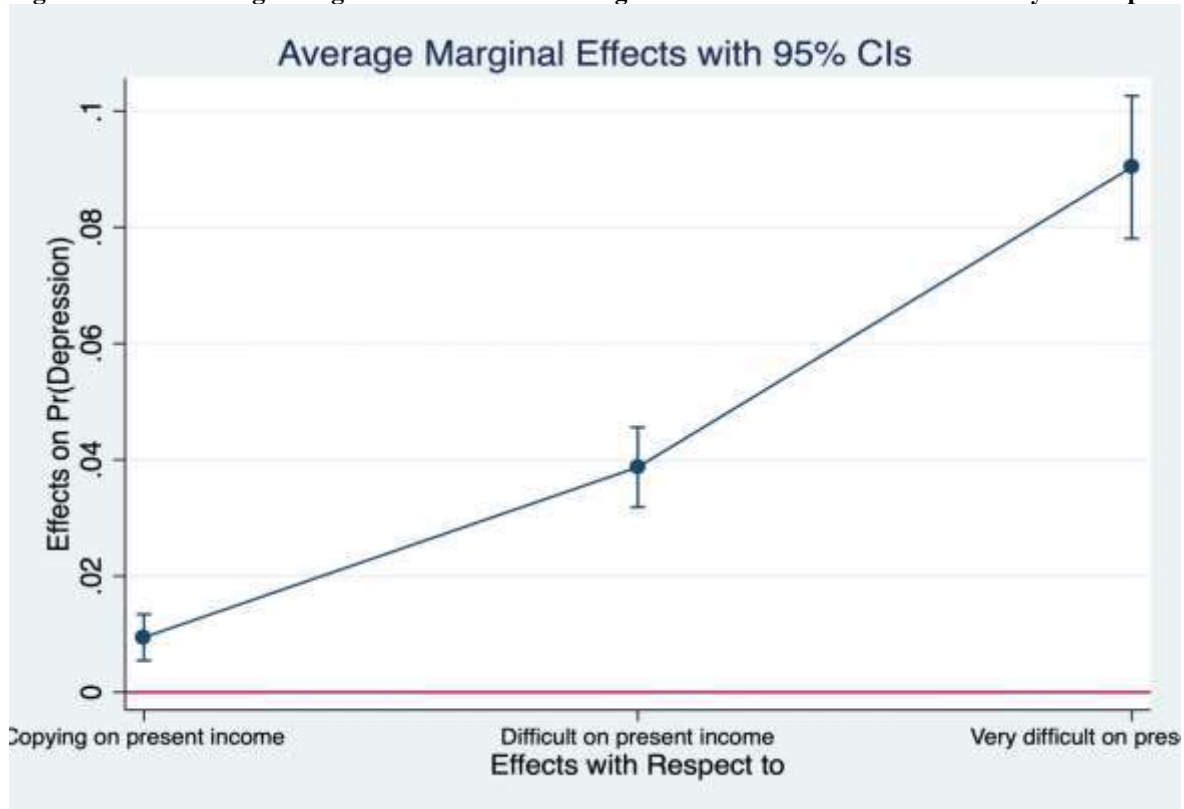

Table A9, Column (4) estimate. The "Living comfortably on present income" class of the Feeling about Household's income nowadays is the omitted benchmark