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"The gustibus errari (pot)est": utility misprediction, preferences for well-being and life satisfaction[§]

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Abstract

The life satisfaction literature generally focuses on how life events affect subjective well-being. Through a contingent valuation survey we test whether well-being preferences have significant impact on life satisfaction. A sample of respondents is asked to simulate a policymaker decision consisting in allocating scarce financial resources among 11 well-being domains. Consistently with the utility misprediction hypothesis, we find that the willingness to invest more in the economic well-being domain is negatively correlated with life satisfaction. Our findings are shown to be robust when we account for unobservables related to economic fragility and non-random sample selection. Reverse causality and omitted variable bias are controlled for with instrumental variables and a sensitivity analysis on departures from exogeneity assumptions. Subsample estimates document that the less educated are more affected by the problem.

Keywords: life satisfaction, well-being preferences, utility misprediction, subjective well-being.

JEL numbers: A13, D64, H50, I31

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γνῶθι σεαυτόν (know thyself)
Socrate

1. Introduction

Several authors have provided rationales explaining why individuals may mispredict utility (see, among others, Lebergott 1993, Lane 1991, Frank 1999 and Frey et al. 2004). Among the most relevant of them we find underestimation of asymmetric adaptation to the effects of extrinsic/intrinsic aspects to subjective well-being,[1] distorted past memories due to peak-end rules[2] and effects of marketing policies advertising comfort goods more than stimulus goods.[3] The same line of thought argues that utility misprediction may explain the often observed positive (negative) correlation between life satisfaction and intrinsic (extrinsic) life goals (e.g. Kasser and Ryan 1996; Sirgy 1997; Frey and Stutzer, 2004). This is because the above-mentioned rationales lead individuals to overestimate the impact on life satisfaction of extrinsic and material goods. Advocates of the utility misprediction hypothesis must however overcome the error correction argument (why people do not correct their misprediction) and, from an empirical point of view, empirical findings in support of this hypothesis must be proven to be robust to reverse causality and endogeneity.

[1] The life satisfaction literature documents on this point that individuals adapt quickly to positive changes in income (van Praag 1993, Easterlin 2001, Stutzer 2004, Di Tella et al. 2010) while much less so to negative non pecuniary events such as illnesses, shocks to relational goods and job losses (e.g. Easterlin 2005, Oswald and Powdthavee 2008, Luhmann et al. 2012).

[2] Frey and Stutzer (2005) argue that extrinsic attributes are more related to peak emotions which are demonstrated to distort retrospective assessments of feelings in psychological experiments (Kahneman, 1999). Due to such peak emotions materialistic events are remembered with more satisfaction.

[3] The concepts of stimulus and comfort goods were first introduced by Scitovsky (1992). Stimulus goods are goods whose consumption is not possible without previous investment in activities or skills which make such consumption possible. The concept may be applied for instance to cultural, language or sport abilities. The main example provided by Scitovsky is the enjoyment of culture and arts and study and investment in humanistic culture accumulates the crucial "capital" which allows to enjoy this kind of stimulus good. In alternative, comfort goods are goods which provide immediate satisfaction but may create in the long run dependence and may weaken investment in the acquisition of the skills necessary to consume stimulus goods, thereby contributing to create a happiness paradox (Pugno, 2013). Since comfort goods may produce dependence, and consequently a much more stable flow of profits, they are by far more advertised than stimulus goods. Frey and Stutzer (2013) argue that advertising emphasizes extrinsic more than intrinsic aspects of goods. Our point is that advertising pushes toward comfort goods which in turn require more economic wellbeing to be consumed but negatively affect life satisfaction. Addiction to comfort goods and insufficient investment in skills required to consume stimulus goods may contribute to explain why the negative effects of utility misprediction may not be easily corrected in a dynamic perspective.

We aim to contribute to this literature by documenting from an original source of empirical evidence a strong and statistically significant negative correlation between life satisfaction and materialistic preferences proxied for by expenditure preferences for economic well-being. We show that our evidence is robust to non random sample selection, endogeneity and reverse causality. The starting point of our investigation is the process of construction of equitable and sustainable well-being indicators (*Benessere Equo e Sostenibile*) enacted by the Italian Statistical Institute in 2011 following the guidelines of the Sen/Stiglitz commission (see section 2 for details). The result of such process is the identification of 11 well-being domains which were regarded as fundamental by representatives of different groups of the Italian population. Our research builds on such classification by asking individuals to simulate the hypothetical policymaker decision to allocate a given sum among the 11 domains. Our work is novel from this point of view since, to our knowledge and with the exception of Becchetti et al. (2013), papers investigating the determinants of political preferences have so far concentrated their effort on single factors affecting support for a specific well-being domain (i.e. environmental sustainability, redistribution), while never looking at how weights across different domains are distributed.

Empirical findings related to our question on well-being preference weights document that individuals who would invest more in economic well-being are significantly less satisfied with their life. The maintained assumption behind our reasoning is that willingness to invest more in economic wellbeing in the simulated policymaker action should mirror excess time dedicated to its pursuit in private life thereby producing negative consequences on life satisfaction. Under this assumption, our results are consistent with the utility misprediction hypothesis since individuals who overestimate utility from material well-being (and underestimate utility from other non-material domains, like e.g. socializing) should declare higher willingness to invest in economic well-being (rather than, e.g., in social relationships) and, at the same time – due to a systematic estimation error in their utility estimation – lower life satisfaction than individuals who declare

lower willingness to invest in the same domain while attaching higher value to other non-material domains.

Most of the empirical work in the paper aims to disentangle the above discussed utility misprediction interpretation of the observed nexus from the alternative interpretations of omitted variable bias, endogeneity and reverse causality.

A first alternative rationale may in fact be that available explanatory variables do not adequately capture all economic well-being dimensions. According to this interpretation, individuals would invest more in economic well-being while being relatively less satisfied with life because they are relatively worse off in terms of unobservable economic well-being components (i.e., they may be relatively more indebted or suffer from other forms of financial fragility not captured by information available to the researcher). In order to control for this problem we introduce income satisfaction among regressors in our benchmark specification. Such variable not only captures the impact of all unobservables related to economic well-being but also accounts for a potential gap between expectations and realisations in terms of material satisfaction which may produce a negative impact on life satisfaction even when income and other unobservable economic components are at levels which may be objectively considered as adequate.

A second rationale for our findings, alternative to utility misprediction, is reverse causality: reduced life satisfaction may push individuals to search compensation for their unhappiness in material goods. According to this view, whatever the causes of unhappiness (idiosyncratic time invariant psychological traits or life events) their effects on life satisfaction may produce a reverse causality nexus from the latter to materialistic preferences due to such compensatory reaction.

We control for these alternative interpretations with instrumental variable regressions and a sensitivity analysis à la Imbens (2003) which allows us to evaluate the robustness of our results to the introduction of a simulated confounder when relaxing the standard conditional independence assumption. Note as well that the sensitivity analysis also provides a sound alternative to the

introduction of income satisfaction among regressors when controlling for unobservables related to financial fragility.

Being robust to alternative interpretations tested with these econometric tools, our results therefore provide confirmation that utility misprediction is an explanation of our main result. These results have relevant implications for economic theory since they suggest the need of broadening our theoretical horizons from a standard framework for economic modeling in which preferences are generally regarded as exogenous and time invariant (*de gustibus non est disputandum*) to a framework in which individuals progressively discover their preferences in a noisy environment in which psychological or sociological distortions may make this work not simple (*de gustibus errari potest*).

The paper is divided into six sections (including introduction and conclusions). In the second section we describe the institutional process of construction of the equitable and sustainable well-being indicators which are at the root of our empirical work. In the third section we illustrate the design of our empirical investigation. In the fourth section we provide and comment descriptive findings and hypothesis testing. In the fifth section we illustrate and discuss our econometric results and robustness checks controlling for omitted variable bias, non-representativeness of our sample, endogeneity and reverse causality; we further provide subsample estimates in order to check how (below/above median) education and income affect misprediction. The final section concludes.

2. The BES process

The selection of proper well-being indicators is of crucial importance since it relates to the ultimate ends of socioeconomic activity and policymaking. The well-known limits of GDP in capturing the multiplicity of well-being dimensions have recently led the Sen-Stiglitz commission to recommend

and provide guidelines for the adoption of a more articulated set of indicators.[4] Italy was one of the first countries to follow the advice launching in 2011 a three-phases process. In the first, CNEL[5] members representing different stakeholders in the Italian society were asked to identify the most important well-being domains. In the second, ad hoc commissions of experts were created for each domain with the goal of identifying a proper set of indicators which could adequately capture specific different well-being dimensions. In the third, the set of indicators were presented to the CNEL stakeholders for validation.

The result of this process led to the definition of the following twelve BES domains:[6]

01. Health
02. Education and training
03. Work and life balance
04. Economic well-being
05. Social relationship
06. Politics and Institutions
07. Safety
08. Subjective well-being
09. Natural and cultural heritage
10. Environment
11. Research and innovation
12. Quality of services

A first description of Italy on their basis was presented the 12th March 2012. A nice property of the Italian process is its attempt to overcome the trade-off between subjective indicators (which may

[4] Downloadable at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf.
[5] CNEL composition (sixty-four councillors elected for five years) well reflect the heterogeneity of the Italian society. Forty-eight members are representatives of public and private-sector producers of goods and services: twenty-two of these represent employees, three represent the public and private leaders and managers, nine represent self-employed workers; seventeen are industry representatives, nominated by a Decree of the President of the Republic, after being proposed by the President of the Council of Ministers, upon deliberation of the Council of Ministers. Six members are representatives of social service and voluntary organisations.
[6] The complete list of the 134 specific indicators created in the different BES domains by ISTAT is attached in Appendix A. For a more complete and detailed information on the process of BES creation see the English version of the ISTAT/BES official website http://www.misuredelbenessere.it/index.php?id=48.

fall into the "happy slave" Sen's critique)[7] and objective indicators which tend to be paternalistic (that is, imposed on the population by a commission of experts) (Sugden, 2008). BES indicators are not paternalistic since domains in the first step of its creation process are proposed from stakeholders of the Italian society (see footnote 5) and the indicators suggested by commissions of experts for each domain are validated by the same stakeholders in the third final step. At the same time they do not fall into the happy slave critique since the role of subjective well-being indicators is very limited.[8]

3. The survey design and the theoretical framework

Our empirical analysis is based on an online survey we launched on March 2013. The survey appeared on three main Italian newspapers (Messaggero,[9] Avvenire,[10] Unità[11]) and on several other minor newspapers and websites.[12] We insert checks and identification processes in the online survey which prevent the same respondent from filling the form more the once. We terminated it by end of July collecting around 3,346 complete questionnaires.[13]

[7] With subjective wellbeing indicators we may have the paradox of individuals who behave as "happy slaves" reducing aspirations to the low level of their achievements, thereby lacking of desire for social progress. Sen illustrates the point by arguing that "*The defeated and the downtrodden come to lack the courage to desire things that others more favourably treated by society desire with easy confidence"* (Sen, 1985: 15).

[8] Subjective indicators occupy in the BES only one of the 12 domains (n.8 subjective wellbeing) while few subjective indicators are included to complement objective indicators in some selected domains (i.e. those of economic wellbeing, health, safety) (for further details see Appendix A and B). Note as well that, in spite of its limits and potential manipulations, subjective wellbeing worth being measured since satisfaction/lack of satisfaction with life is highly likely to have repercussions on objective indicators such as health, social capital and political stability.

[9] Messaggero, has a reputation of moderate conservative political orientation and is the fifth most red Italian newspaper (excluding sport newspapers).

[10] Avvenire, is the most important Italian catholic newspaper. As such it reflects the ideological divide of Italian believers which are equally divided between right and left wing orientation.

[11] Unità has a left wing tradition being the official newspaper of the Democrat Party.

[12] These are Forum Nazionale Terzo Settore, FQTS, ARCI, ConVol, CSV Net, Labsus, Dignità del lavoro, Auser, Avis, Anpas, Bandiera Gialla, La perfetta letizia, Mondo alla Rovescia, Confini online, Il Metapontino.it, ARCI, Campania, Blog vitobiolchini, Domos (domotica sociale).

[13] An inescapable limit of our online survey is that it is not representative of the Italian population. Online compilation in fact automatically selects a subsample of individuals who tend to be relatively younger and more educated than average. This limit is at the same time an interesting aspect of our survey since the composition of our sample anticipates characteristics of the future population which is bound to be more educated in the future. Also for this reason we may have a specific interest in investigating the relationship at stake in this specific group of the population. From another point of view lack of representativeness of our sample with respect to the Italian population is a common characteristics of many econometric studies which are not interested in descriptive traits of the universe of reference but

In the main question around which we concentrate our interest we ask respondents to allocate the hypothetical sum of 100 million euros to promote well-being improvement in one of the 11 (subjective wellbeing excluded) considered BES domains (see the attached questionnaire in the Appendix B). This question is followed by sub-questions in which respondents are asked to identify the five priorities in terms of indicators in each of the considered domains.[14] The questionnaire is completed by questions aimed to provide standard socio-demographic information. Needless to say, given the questionnaire structure and the presence of several questions, it is almost impossible that respondents may understand that the researcher is interested, in the specific case of this paper, in investigating the link between life satisfaction and well-being expenditure on the economic well-being domains.

The logic behind our main question of interest (desired investment in the 11 domains) may be resumed in the following theoretical framework illustrated by Becchetti et al. (2013) where it is assumed that each individual *i* has the following utility function defined over the set of the *j=1,…,J* domains

$$U_i = \left(E[W_{i1}(M_{i1})], E[W_{i2}(M_{i2})], \cdots, E[W_{iJ}(M_{iJ})]\right)$$

$$M_{i1} + M_{i2} + \cdots + M_{iJ} = M \qquad (1)$$

with W_j being the *j*-th well-being domain and M_{ij} is the total amount that the individual *i* would like to invest in the domain j (with the total amount to be invested among different domains being equal for all individuals).

First order conditions from utility maximization imply that individuals equalize the marginal utility arising from investing one euro in each of the different domains, that is

to econometric links in that specific sample. Last but not least, subsample estimates for high/low educated respondents help us to correct the bias and to understand what happens in the subsample of the less educated which is closer to country average characteristics. We also correct our main estimates for non-representativeness of our sample with specific design weights described in subsection 4.4.

[14] Note that the survey question changes when we ask preferences about subdomain specific indicators (from the simulation of an invested sum to an more general indication of priorities). This is because some of these indicators are subjective and it is not clear whether others may be affected by government expenditure (see Appendix B).

$$\frac{\partial U_i}{\partial E[W_{i1}]} \cdot \frac{\partial E[W_{i1}]}{\partial M_{i1}} = \frac{\partial U_i}{\partial E[W_{i2}]} \cdot \frac{\partial E[W_{i2}]}{\partial M_{i2}} = \cdots = \frac{\partial U_i}{\partial E[W_{iJ}]} \cdot \frac{\partial E[W_{iJ}]}{\partial M_{iJ}} \quad (2)$$

What illustrated above clearly shows that the marginal utility of the investment of one euro in a given domain is the product of two factors: the expected impact of one euro invested on the advancement of that well-being domain and the effect of such advancement on individual utility.

Based on this theoretical framework individual choices reflect beliefs on what politicians should do to maximize their well-being even though their expectations on the first of the two factors might be wrong. To make an example individuals may overestimate the impact of one euro spent on a given domain (i.e., safety) on the improvement of well-being in that domain (i.e. $\frac{\partial E[W_{i1}]}{\partial M_{i1}} > \frac{\partial W_{i1}}{\partial M_{i1}}$) and therefore find desirable high investment in it or may, on the contrary, consider that domain very important but erroneously believe that investment in that given domain is useless (i.e. $\frac{\partial E[W_{i1}]}{\partial M_{i1}} < \frac{\partial W_{i1}}{\partial M_{i1}}$). In this sense it should be better to define what we observe as *expenditure well-being preferences* more than well-being preferences. Consider as well that incorrect expectations of the kind described above cancel out if we assume that they are normally distributed in our sample. Furthermore, the discrepancy between the expected marginal improvements in a well-being domain by one-euro invested in that domain ($\frac{\partial E[W_{i1}]}{\partial M_{i1}}$) and the real marginal impact of such investment ($\frac{\partial W_{i1}}{\partial M_{i1}}$) can be due to region-specific factors like, for instance, lack of trust in local politicians and/or regional budget constraints which can be controlled for in the econometric analysis by introducing regional fixed effects. It is as well reasonable to assume that the incorrect expectation problem is less serious in the case of the economic well-being domain - the main object of our inquiry - since a government has many direct or indirect effective ways to affect this domain (such as subsidies, tax allowances, etc.).

What must be also remarked is that the typical distortion of the contingent evaluation literature should not apply to our question. Individuals tend to provide biased answers when they want to convey a given message to the interviewer or when they are asked to make evaluations which can strategically affect their payoffs (i.e., they tend to declare lower willingness to pay for public goods in order to free ride or they misreport income for fear of being taxed) (Carson et al., 2001). The question we pose has no power of producing such an effect. In our case if the respondent wants to emphasize the importance of a given well-being domain she/he just has to declare to be willing to invest a higher amount on it. Hence the strategic goal should lead in this case to a true and not to a biased declaration.

3. Descriptive and empirical findings

In Table 1 we report summary statistics of the main variables used in the econometric analysis. The variable used is the standard cognitive measure of subjective well-being (life satisfaction).[15] Consistently with most of the empirical literature the distribution of self-reported life satisfaction is right skewed with most values concentrated between 6 and 9. Respondents' self-declared life satisfaction level (*life_sat*) is on average 7.2 while their average level of satisfaction with economic conditions is 5.5 (*income_sat*).

The preferred well-being domain in which respondents would invest is health (16.5 percent, *driver_health*), followed by education and training (13.5 percent, *driver_edu*), work and life balance (10.3 percent, *driver_job*) and economic well-being (9.6 percent, *driver_ecowell*), the least preferred domain being politics and institution (3.9 percent, *driver_politics*). Differences in well-

[15] Using self-declared levels of life satisfaction as a proxy for individual utility is a standard approach in the literature on subjective well-being and happiness economics (see, e.g., Frey and Stutzer 2002, Layard 2005, Di Tella and MacCulloch 2006, Stutzer and Frey 2010), as well as in psychology (e.g. Kahneman et al. 1999, Diener et al. 1999). As is well known alternative subjective wellbeing measures are of affective (negative/positive affect) and eudaimonic (evaluation of the sense of one's own life) type. The cognitive measure we adopt is however probably the most widely used at least in the economic literature on life satisfaction.

being preferences across domains are not negligible given that equal distribution of investment among them would predict an average investment of around 9 percent for each.

When it comes to socio-demographic characteristics we find that most survey participants have the Italian nationality (*Italian*), are from the "South or Islands" Italian macro-area (*South and Islands*), have an open-ended type of employment (*open-ended contract*) and declare that their income ranges between 15.000 and 30.000 euros; roughly 13 percent of the sample is unemployed (*not working*). About 35 percent of respondents have a high school diploma, 39 percent a Master's degree, while a negligible share of the sample has no education (0.3 percent).[16] As far as the civil status is concerned, the majority of individuals is married/cohabitant (57 percent) while about 35 percent is single.

In Figure 1 we plot money allocation (as percentage of the total) between the two domains of economic well-being and social-relations (without considering all the others) against declared levels of life satisfaction in order to emphasize the relationship between life satisfaction and preferences for material vs. non-material well-being. Figure 1 clearly shows the presence of a negative nexus between life satisfaction and investment in economic well-being especially at the left tail of the life satisfaction distribution. Among individuals with low levels of satisfaction (between 1 and 3) the amount spent in economic well-being over the total of the two domains of economic well-being and social relationship (the most typical intrinsic goal among the 11 domains) is largely above 60%. On the contrary, at the highest level of life satisfaction (between 8 and 10) investment in the economic well-being and social relations domains tend to converge.

A negative (positive) nexus between preferences for material (non-material) well-being - proxied for by investment in economic well-being (social-relations) domain - and life satisfaction is also found when comparing material vs. non-material investment preferences by levels of life satisfaction under parametric and non-parametric tests (see Table 2). As already suggested by

[16] This clearly reflect a bias toward high education due to the non random sample selection implicit in our research (only those who voluntarily accept to fill a questionnaire online may participate). We will address this problem with ad-hoc design weights in subsection 4.4.

Figure 1, low levels of life satisfaction are associated with stronger preferences toward material than toward non-material well-being, the differences being statistically significant under both parametric and non parametric tests for the interval of low levels of life satisfaction and when the entire life satisfaction range is considered. On the contrary, consistently with what found in Figure 1 at high levels of life satisfaction we do not detect significant differences between investment in the economic well-being driver and in social-relations.

The descriptive evidence provided so far highlights a negative nexus between investment in the economic well-being domain and life satisfaction. In order to further investigate the rationale behind such a negative relationship and account for potential endogeneity by controlling for a set of individual's socio-demographic and economic characteristics as well as regional fixed effects, we estimate the following baseline model:

$$Life\_sat_i = \alpha_0 + \sum_{j=1}^{J} \beta_s \; BES\_Driver_{is} + \sum_{k=1}^{K} \gamma_k \; SocioDem_{i,k} + \sum_{l=1}^{L} \delta_l \; DIncomeClass_{i,l} + \sum_{q=1}^{Q} \lambda_q \; DJobStatus_{i,q} + \sum_{v=1}^{V} \chi_v \; DSource_{i,v} + \sum_{g=1}^{G} \kappa_g \; DArea_{i,g} + \varepsilon_i \quad (3)$$

where the dependent variable (*Life_sat*) is subject *i*'s self-declared level of life satisfaction on a 1-10 scale (1 = completely unsatisfied, 10 = completely satisfied), *BES_Driver* is the share of money hypothetically invested by subject *i* in the *j*-th BES domain (*social well-being* being the omitted category), *SocioDem* is a set of respondent's sociodemograpic characteristics including political orientation (*RightWing*) expressed by respondents on a -10/+10 scale (-10 extreme left, +10 extreme right), a (0/1) dummy for Italian nationality (*Italian*), a set of dummies for the respondent's age class picking up five-year age intervals (the 30-35 age class is the omitted benchmark), education level dummies (primary-middle education being the omitted benchmark), a gender dummy taking value one if the respondent is female and zero otherwise and *MaritalStatus* dummies picking up the Divorced, Single, Separated and Widowed conditions (Married/Cohabitant being the omitted

benchmark). The specification also includes the respondent's income class (*DIncomeClass*) and job status (*DJobStatus*) dummies, with *Income_class < 15.000€* and *Not Working/Unemployed/Looking for a Job* being the excluded categories respectively. Individual's geographic location (i.e. depending on the specification, either *North-East*, *North-West* or *South and Islands* macroregions of Italy or region dummies) are also controlled for with *DArea* dummies. *Dsource* includes a set of dummy variables capturing the source of information through which the respondent came to know about the survey. The omitted benchmark is represented by those who filled the questionnaire through word of mouth (i.e. acquaintances/friends). The *Dsource* variables may capture part of the unobserved individual's traits which can represent a possible source of bias in our econometric estimates.

Table 3 reports results from an ordered logit estimate of different specifications of the baseline model in (3). In column 1 we estimate the baseline model without introducing the BES investment decisions and find that women, non-married/non-cohabitant, unemployed and/or low income individuals tend to report a lower degree of life satisfaction, while more educated and right-wing oriented individuals report a higher degree of life satisfaction. Interestingly, those who came to know about this questionnaire through sources not involving direct social activities (i.e. blog, social networks, etc.) are less satisfied with their life than those who were instead directly informed about it by friends/acquaintances. As argued above, the introduction of such dummies may reduce potential endogeneity issues by capturing individuals' unobserved traits (e.g., sociability) which are both correlated with BES investment choices and life satisfaction.

In Table 3, column 2 we introduce the share of money that individuals would allocate to the different BES well-being domains. Our results confirm the above-mentioned negative nexus between life satisfaction and investment in economic well-being. In particular, our main finding suggests that higher expenditure preferences for the economic well-being driver relatively to the social well-being one (the excluded category) is detrimental for life satisfaction. As a consequence (if alternative rationales of reverse causality and endogeneity may be ruled out) the utility

maximization hypothesis that individuals optimally balance their investment in each domain so to maximise their final utility (see eq. 2) seems to be rejected by the data. Even though reduced in magnitude, this main effect is robust to the introduction of the respondent's level of satisfaction with economic conditions (*income_sat*) accounting for the aspiration-realisation gap and both measurement errors and omitted variables concerning respondents' economic and financial status (Table 3, column 3), as well as to the introduction of regional fixed effects accounting for unobserved region-specific quality of institutions and/or local public expenditure (Table 3, column 4).

Based on this last specification, we evaluate the economic significance of our main result and find that a one percentage-point increase in investment in economic well-being increases (decreases) the probability of declaring a life satisfaction level below (above) the sample median by .57 (.64) percentage points. A graphical evidence of the magnitude of *driver_ecowell* is also shown in Figure 2 in which marginal effects from a proportional increase in the investment in economic well-being with respect to the maximum potential investment (i.e. 100 units) are plotted against the probability that *life_sat* is below the sample median (i.e., seven).

The main econometric results described above are also shown in the scatterplot in Figure 3 in which the predicted probability of declaring a level of life satisfaction below the sample median is plotted against the predicted values from an OLS regression of the amount of units invested in the economic well-being (*driver_ecowell*) on a set of controls as in (3). The scatterplot analysis confirms the negative relationship between life satisfaction and the amount of money invested in the economic well-being driver.

4. Correcting for endogeneity

So far we have described the relationship between preferences for material well-being and life satisfaction in terms of statistical correlation. In this section we check the robustness of our main

finding and try to correct for endogeneity arising from reverse causality and omitted variable bias by using respectively an instrumental variable approach (Subsection 4.1), discussing heterogeneous effects on life satisfaction from the investment on economic well-being by comparing subsamples of individuals by income class and education level (Subsection 4.2) and performing a sensitivity analysis (Imbens, 2003) on departures from exogeneity assumptions (Subsection 4.3). In addition, our main estimates are finally corrected for a possible bias deriving from the non-representativeness of our sample due to the voluntary-based response to the survey (Subsection 4.4).

4.1 Instrumental variable regressions

In what follows we implement an instrumental variable approach in order to control for endogeneity and reverse causality and account for the existence of a causal nexus between preferences for material well-being (*driver_ecowell*) and life satisfaction pointing to an opposite direction with respect to that presented in (3).

Before doing this, we first estimate the following baseline specification

$$Life\_sat_i = \alpha_0 + \beta\ Driver\_ecowell_i + \pi\ Income\_sat_i + \sum_{k=1}^{K} \gamma_k\ SocioDem_{i,k} + \sum_{l=1}^{L} \delta_l\ DIncomeClass_{i,l} + \sum_{q=1}^{Q} \lambda_q\ DJobStatus_{i,q} + \sum_{v=1}^{V} \chi_v\ DSource_{i,v} + \sum_{g=1}^{G} \kappa_g\ DRegion_{i,g} + \varepsilon_i \quad (4)$$

which is similar to the model in Table 3, column 4 with the only exception that the benchmark BES domain is now composed by all the other domains not included in (4) (since all other domains are excluded from right hand side variables). The rationale behind such a specification hinges on the necessity to instrument the main choice-variable of interest for this study which is suspected of endogeneity - *Driver_ecowell* - with instruments which are valid and relevant as we will document below.

Table 4, columns 1-2 report results from the OLS estimates of eq. 4. The negative relationship between investment in economic well-being and life satisfaction is confirmed also under this model specification. In addition, since the omitted BES benchmark is now composed by all the BES domains but *Driver_ecowell*, the new estimates reinforce our main finding since those investing more in the economic well-being domain with respect to *all* the other domains appear to be less satisfied with their life (Table 4, column 1). In column 2 we re-estimate the previous specification by replacing life satisfaction, investment in economic well-being and satisfaction with economic conditions with a ratio between the individual-*i*'s value for the latter variables and their regional sample average calculated excluding the individual *i* (see variable legend in the Appendix). The introduction of these ratios allows us to reduce the additional endogeneity due to the high correlation and/or simultaneity among *Driver_ecowell*, *Life_sat* and *Income_sat*. Estimation results reported in column 2 (Table 4) are consistent with those in column 1 and, more in general, with our core finding.

We then instrument *Driver_ecowell* with its sample average computed in individual-*i*'s region excluding *i*'s investment decision in the economic well-being domain. More specifically, for each individual *i* living region *j* we construct the variable $Mean\_EW_{-i,j} = \frac{\sum_j Driver\_ecowell_{-i,j}}{n_j - 1}$ (where n_j is the total number of individuals in the sample living in region *j*) and use it to instrument *Driver_ecowell* in the above-described estimates in columns 1-2 (Table 4). Once regional characteristics are controlled for in the reduced form equation, the validity of the chosen instrument is guaranteed by the plausible assumption that the regional average investment in economic well-being affects life satisfaction only through the individual's investment in that domain (which, as explained above, has not been included when computing the regional mean).[17] As an indirect test for the validity of the exclusion restriction we check for the significance of the instrumental variable

[17] Becchetti et al. (2013) document that individual well-being preferences are not affected by objective indicators, that is, they are not correlated to scarcity/abundance of the well-being dimension at regional level. This evidence reinforces even more our validity assumption since, in case of correlation, average preferences could affect individual life satisfaction through objective achievements in the specific wellbeing indicator at regional level.

in the main equation and find that $Mean\_EW_{-i,j}$ does not significantly account for the variation in the life satisfaction variable (columns 3-4, Table 4). Possible theoretical channels making such an exclusion restriction valid can derive from social imitation and/or cultural norms which explain also the correlation between other's average and individual's investment in economic well-being. The existence and the magnitude of such a correlation provides support for the relevance of our instrumental variable which is also empirically confirmed by ad-hoc statistical tests commented below.

Results from IV estimates are consistent with those from OLS estimates described above (i.e. they do not exhibit the typically larger standard errors and changes in coefficient magnitudes which occur when the set of instruments has not enough variability) and are reported in columns 5-6 of Table 4. Instrument relevance and the absence of weak instrument bias is confirmed by two statistical checks, i.e. i) the F-statistics from the first stage are relatively high (i.e. 12.73 and 9.18 for the specification in columns 5 and 6 respectively) and ii) the F-statistics from the Stock and Yogo (2005)'s weak-instrument test are greater than all the related Stock and Yogo critical values. We finally re-estimate the previous instrumental variable models accounting for the specific characteristics of the dependent variables both in the first and the second stage, i.e. categorical (*life_sat*) or censored (*driver_ecowell*, *ratio_LS* and *ratio_EW*). Estimation results reported in columns 7-10 (Table 4) confirm all the previous findings. Incidentally, the individual level of satisfaction with her/his own economic conditions enters significantly both the first and second stage but with an opposite sign, i.e. it positively affects life satisfaction but it does negatively for investment in economic well-being. Therefore, by including *income_sat* in both stages we are also likely to capture omitted variables representing an additional source of bias like, for instance, the unobserved economic and financial conditions and/or the aspiration-realisation gap which can simultaneously influence both life satisfaction and investment in material well-being.

4.2 Heterogeneous effects

Columns 8 and 10 (Table 4) show that being female, right-wing oriented, young, less educated, under a seasonal contract or redundancy fund benefits (relative to the being unemployed) and wealthier are among the factors which positively influence the investment in the economic well-being domain. In order to test for sample heterogeneous effects of the economic well-being investment we re-estimate the IV specification in columns 7-8 in Table 4 by comparing subsamples of individuals below/above the median income class and education level. Columns 1-2 in Table 5 show that individuals with income class above the median sample level face a negative impact of economic well-being investment on life satisfaction while the effect of investment in economic well-being is not significant for those reporting an income class level not above the sample median (columns 3-4, Table 5). In other terms, the former show higher preferences for the economic well-being domain but derive lower life satisfaction from it relative to the latter. A possible interpretation is that higher income individuals seem to be more subject to utility misprediction due to higher consumption of (comfort, extrinsic) goods subject to adaptation (see Easterlin, 2001 and Stutzer, 2004). The same occurs for those who are less educated (i.e. have at least a high school diploma) - and hence more exposed to media influence and/or imitation when consuming "status" or comfort goods (see footnote 3) - since they invest more in the economic well-being domain but also enjoy less from it in terms of life-satisfaction (columns 5-6, Table 5) relative to the higher educated respondents (columns 7-8, Table 5).

4.3 Sensitivity Analysis

As already discussed above, an additional source of bias in our estimates may derive from the exclusion of an unobserved variable which is correlated with both life satisfaction and investment in the economic well-being driver, even after accounting, as we do, for individual economic and financial fragility and aspirations. This is because personal traits (i.e. for instance, entrepreneurial skills, friendliness, assertiveness, envy, lack of generosity) or family-background values can act potentially as omitted factors which – if not introduced in our econometric analysis – make it hard to assume that investment in the economic well-being driver is uncorrelated with the error term.

Since the above mentioned variables are unobservable and in order to take into account for their potential role, we check whether our results are robust to the departure from the materialism-exogeneity assumption without relying on the validity and exogeneity of an instrument as above.

By exploiting the econometric advances in the policy evaluation literature, we implement the Imbens (2003)'s sensitivity analysis based on i) modelling relaxations of the unconfoundedness assumption through the simulation of parameter values underling an unobserved variable's distribution, and ii) assessing whether the main effect of interest vanishes under plausible assumptions on those parameter values. Since this approach has been proposed originally in the context of policy evaluation, the main effect of interest in the related literature is the "average treatment effect" (ATE) of a policy intervention (the "treatment variable") on an outcome variable. In our case, the treatment variable (*T)* can be thought as the probability of an individual's investment in economic well-being below the sample mean whereas the outcome (*Y)* is life satisfaction. We then model the possible channels through which an unobserved variable (*U)* influences *T* and *Y* leading to a bias of a fixed amount in the ATE estimation. We finally use the observed controls (*X)* to benchmark the plausibility of the existence of such an unobservable.[18]

The baseline model on which we implement the sensitivity analysis is reported in Table 3, column 2. In order to construct our "treatment" variable, we replace all the BES_Driver variables with an indicator equal to 1 if the respondent *i* invested in the economic driver more than the sample average and zero otherwise, i.e. $I_{Driver\_ecowell_i > \frac{\sum_i Driver\_ecowell_i}{N}}$ (*N* is the sample size). Consequently, in this specification the ATE (estimated under exogeneity) captures the impact of a high investment in economic well-being on life satisfaction.

Figures 4-6 show the results from the general sensitivity analysis performed using the algorithm developed by Harada (2012). In Figure 4 the solid curve represents the set of partial R-squares for U corresponding to an ATE which is half of the baseline one (i.e., 0.37), while in Figure 5 it

[18] See Imbens (2003) for further details on this method and Blattman and Annan (2010) for an application.

represents the set of partial R-squares for U that lead to an ATE equal to 0.01 (i.e. zero impact of investment in economic well-being on life satisfaction). Finally, in Figure 6 the solid curve is the set the partial R-squares for U which correspond to an ATE no longer significant at 95% confidence level. The "+" signs are the partial R-square values for the X covariates of the baseline model. More specifically, Figures 4-6 show the explanatory power of each of the observed regressors for T ($I_{Driver\_ecowell_i > \frac{\sum_i Driver\_ecowell_i}{N}}$) and Y (*life_sat*). The vertical axis reports the marginal increase in the R-square from adding the covariate to a regression of life satisfaction on all other covariates while the horizontal axis measures the marginal influence of the covariate on the variation in T. The solid curve can therefore be interpreted as a threshold beyond which the simulated U is so influential to reduce the baseline ATE by half (Figure 1), completely (Figure 2) or to make it no longer statistically significant (Figure 3).

Our findings document that all the observed regressors lie below the solid curve in all our plots. This implies that, in order to change the magnitude and significance of our baseline ATE, any unobserved factor U influencing both T and Y should implausibly account for more variation in the Y than actually do all the X covariates, including marital status, income, education, employment characteristics, and age which – as outlined before – are shown to play a significant role on life satisfaction. The overall conclusions from our check are that the ATE of a large investment on economic well-being on life satisfaction estimated under the assumption of exogeneity is still significant and does not change in magnitude when we relax such assumption by simulating a third omitted factor with "reasonable" parameter values.

4.4 Non-random sample selection

Since our sample is mainly composed by individuals who answer to the survey on a voluntary basis, non-representativeness may potentially be an additional source of bias. In particular, as it can be noticed from descriptive statistics, our sample is mostly composed by high educated, aged 40-45 individuals living in the South and Islands. Even though non-random sampling and consequent self-

selection issues can be partially accounted for through the IV estimation and the heterogeneous effects analysis implemented in the previous subsections, we perform an additional robustness check by re-estimating the models in Tables 3 and 4 with a calibration weighting approach. Design weights for the above-mentioned demographic characteristics are derived by merging our non-random sample with the national census (random) one. More specifically, we append the micro-data from the 2012 national census to our dataset and estimate on the whole (larger) sample a logistic regression of the individual's probability of being in the census on gender, education level, age and region of residence. We then take the inverse of the predicted probabilities and use them to weight our survey respondents in the main estimates.[19] Results are reported in the Appendix (Tables A2-A3) and are extremely similar to the unweighted ones from Tables 3-4, thereby suggesting that non-random feature of our sample does not lead to a severe estimation bias.

6. Conclusions

In this paper we exploit the unique opportunity of a database combining information on self-reported life satisfaction with individual preferences for government expenditure on different well-being domains. Our main finding is a strong and significant negative correlation between subjective well-being and willingness to invest more in the economic well-being domain. We document that utility misprediction is a relevant driver of our findings, net of the alternative and equally plausible interpretations related to endogeneity, reverse causality, omitted variable bias and measurement errors on our set of regressors (especially unobservables related to our objective economic well-being measures). We reach this conclusion since our main findings remain significant when: i) we control for income satisfaction with which we capture all unobservables related to economic well-being and the potential gap between achievements and expectations in the economic well-being domain; ii) we use an instrumental variable approach iii) we perform a sensitivity analysis which

[19] See Kott (2006), Sarndal (2007) and Skinner (1999) for details on calibration weighting procedures for non-random samples.

relaxes the conditional independence assumption and iv) we use ad hoc design weights to correct for non-random sampling. Interestingly, higher income and lower educated respondents seem to be more exposed to utility misprediction, possibly because of income-adaptation (the former) and exposure to the media or status-based imitation (the latter).

The robustness of the utility misprediction rationale in the interpretation of our findings implies non-trivial consequences for the economic literature. Most of our models are based on the assumption of rational individuals with time invariant preferences who "know their type", i.e. are fully aware of the characteristics of their utility function. We find on the contrary not just that "*de gustibus est disputandum*" (in the sense that each individual is perfectly informed about her/his time invariant preferences) but also that "*de gustibus errandum (pot)est*". Empirical support for the hypothesis of utility misprediction thereby opens the way to the much broader and general framework assuming utility functions which are not perfectly known to individuals and whose content can be revealed after a discovery process aimed to overcome the distortions that psychological (underestimation of asymmetric adaptation, peak-end rules) or social (impact of advertising) mechanisms may produce. The suggestion stemming from this paper is therefore that the economic literature should adopt a broader view on preferences and incorporate concepts on them which are well known in sociology, psychology and marketing.

Our robust empirical evidence on the existence utility misprediction calls for further investigation on the determinants of and the rationales behind the persistence of such prediction errors and on the factors which might reduce them. Regarding this last point, several policy suggestions which may be drawn from the above-mentioned view. Regulation or taxation reducing psychological or social factors influencing the discovery process of one's own preferences can create positive effects on individual well-being. Implications can be huge in other fields such as limits to TV advertising (especially for children) as it already occurs in several countries even though web exposure reduce the effectiveness of these measures. According to our subsample estimates in section 4.2 similar positive effects on economic well-being may arise from investment in education which may help

individual to reduce the noise produced by such psychological and social disturbances on preference discovery.

References

1. Becchetti, L., Corrado, L. and Fiaschetti, M. (2013), The heterogeneity of wellbeing "expenditure" preferences: evidence from a simulated allocation choice on the BES indicators, *CEIS Research Paper N. 297*
2. Blattman C. and Annan A. J. (2010), The Consequences of Child Soldiering, *Review of Economics and Statistics*, 42(4).
3. Carson, R.T., Flores, N.E. and Meade, N.F. (2001), Contingent valuation: controversies and evidence, *Environmental and Resource Economics*, 19: 173-210.
4. Di Tella, R. and MacCulloch, R. (2006), Some Uses of Happiness Data in Economics, *Journal of Economic Perspectives*, 20(1): 25-46.
5. Di Tella, R., Haisken-DeNew, J.P. and MacCulloch, R. (2010), Happiness Adaptation to Income and to Status in an Individual Panel, *Journal of Economic and Behavior Organization*, 76(3): 834-852.
6. Diener, E., Suh, E.M., Lucas, R.E., Smith, H.L. (1999), Subjective Well- Being: Three Decades of Progress. *Psychological Bulletin*, 125(2): 276-303.
7. Easterlin, R.A. (2001), Income and Happiness: Towards a Unified Theory, *Economic Journal*, 111(473): 465-484.
8. Easterlin, R.A. (2005), A Puzzle for Adaptive Theory, *Journal of Economic Behavior and Organization*, 56(4): 513-21.
9. Frank, R. H. (1999). Luxury Fever. Why Money Fails to Satisfy in an Era of Excess. New York: *Free Press.*
10. Frey, B.S. and Stutzer, A. (2002), What Can Economists Learn from Happiness Research?, *Journal of Economic Literature*, 40(2): 402-435.
11. Frey, B.S. and Stutzer, A. (2004), Economic Consequences of Mispredicting Utility, *IEW Working Paper* No. 218.
12. Frey, B.S. and Stutzer, A. (2005), Does the Political Process Mitigate or Accentuate Individual Biases due to Mispredicting Future Utility?. In: McCaffery E. and Slemrod J. (eds). Behavioral Public Finance. New York (N.Y.): *Russell Sage Foundation*.

13. Frey, B.S. and Stutzer, A. (2013), Economics and the Study of Individual Happiness. In: Susan A. David, Ilona Boniwell and Amanda Conley Ayers (eds.). The Oxford Handbook of Happiness. Oxford: *Oxford University Press*: 431-447.

14. Frey, B.S., Benz, M. and Stutzer, A. (2004), Introducing Procedural Utility: Not Only What but also How Matters, *Journal of Institutional and Theoretical Economics*, 160(3): 377-401.

15. Harada, M. (2012), Generalized Sensitivity Analysis, *Working paper*.

16. Imbens, G.W. (2003), Sensitivity to Exogeneity Assumptions in Program Evaluation, *American Economic Review*, 93: 126-32.

17. Kahneman, D. (1999), Objective Happiness. In: Kahneman, D., Diener, E. and Schwarz, N. (eds), Well-Being: The Foundations of Hedonic Psychology. New York: *Russell Sage Foundation*: 3-25.

18. Kahneman, D., Diener, E. and Schwarz N. (1999), Well-Being: The Foundation of Hedonic Psychology. New York: *Russell Sage Foundation*.

19. Kasser, T. and Ryan, R.M. (1996), Further Examining the American Dream: Differential Correlates of Intrinsic and Extrinsic Goals, *Personality and Social Psychology Bulletin*, 22(3): 280-287.

20. Kott, P. S. (2006), Using Calibration Weighting to Adjust for Nonresponse and Coverage Errors, *Survey Methodology*, 32 (2): 133-142.

21. Lane, R.E. (1991), The Market Experience. Cambridge: *Cambridge University Press*.

22. Layard, P.R.G. (2005), Happiness: Lessons From a New Science. New York and London: *Penguin*.

23. Lebergott, S. (1993), Pursuing Happiness: American Consumers in the Twentieth Century. Princeton, NJ: *Princeton University Press*.

24. Luhman, M., Hofmann, W., Eid, M. and Lucas, R.E. (2012), Subjective Well-Being and Adaptation to Life Events: A Meta-Analysis, *Journal of Personality and Social Psychology*, 102(3): 592-615.

25. Oswald, A. and Powdthaveem N. (2008), Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges, *Journal of Public Economics*, 92(5-6): 1061-1077.

26. Pugno, M. (2013), Scitovsky and the income-happiness paradox, *The Journal of Socio-Economics*, 43: 1–10

27. Sarndal, C. E. (2007), The Calibration Approach in Survey Theory and Practice, *Survey Methodology*, 33 (2): 99-119.

28. Scitovsky, T. (1992)[1976], The Joyless Economy. Oxford: *Oxford University Press.*

29. Sen, A.K. (1985), Well-being, Agency and Freedom: The Dewey Lectures 1984, *Journal of Philosophy*, 82: 69-221.

30. Sirgy, M.J. (1997), Materialism and Quality of Life, *Social Indicators Research*, 43(3): 227-260.

31. Skinner, C. (1999), Calibration Weighting and Non-Sampling Errors, *Research in Official Statistics*, 2: 33-43.

32. Stock, J. and Yogo, M. (2005), Testing for Weak Instruments in Linear IV Regression. In: Andrews DWK Identification and Inference for Econometric Models. New York: *Cambridge University Press*: 80-108.

33. Stutzer, A. (2004), The role of income aspirations in individual happiness, *Journal of Economic Behavior & Organization*, 54(1): 89-109

34. Stutzer, A. and Frey, B.S. (2010), Recent Advances in the Economics of Individual Subjective Well-Being, *Social Research: An International Quarterly*, 77(2): 679-714.

35. Sugden, R. (2008), Capability, Happiness, and Opportunity. In: Bruni, L., Comim, F. and Pugno, M. (2008), Capabilities and Happiness, *Oxford University Press*.

36. Van Praag, B.M.S. (1993), The Relativity of the Welfare Concept. In: Martha Nussbaum and Amarthya K. Sen (eds). The Quality of Life. *Oxford*: Clarendon: 362-416.

Table 1 – Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Confidence Intervals	
Life_sat	3346	7.177	1.813	1	10	7.051	7.302
Income_sat	3346	5.539	2.407	1	10	5.300	5.779
Driver_ecowell	3346	9.639	12.302	0	100	6.515	12.763
Driver_health	3346	16.484	11.161	0	100	15.376	17.591
Driver_edu	3346	13.470	7.894	0	100	12.894	14.047
Driver_job	3346	10.282	8.236	0	100	9.695	10.868
Driver_social	3346	7.142	6.125	0	100	6.528	7.756
Driver_politics	3346	3.858	4.564	0	100	3.699	4.016
Driver_security	3346	6.892	5.992	0	100	6.622	7.161
Driver_cultur	3346	7.454	4.896	0	50	6.937	7.970
Driver_environ	3346	8.410	5.359	0	50	7.928	8.891
Driver_innovation	3346	8.581	5.884	0	100	7.842	9.320
Driver_serviqual	3346	7.789	5.552	0	100	7.361	8.218
Ratio_EW	3346	1.004	0.865	0	12.442	0.954	1.054
Ratio_IS	3346	1.001	0.433	0.147	2.309	0.986	1.016
Italian	3346	0.982	0.132	0	1	0.972	0.993
Female	3346	0.530	0.499	0	1	0.498	0.563
RightWing	3346	-2.582	4.690	-10	10	-2.922	-2.243
Age class	3346	5.171	2.746	1	13	4.900	5.441
North-East	3346	0.115	0.319	0	1	0.049	0.181
North-West	3346	0.162	0.368	0	1	0.058	0.266
South-and-Islands	3346	0.466	0.499	0	1	0.293	0.639
Center	3346	0.115	0.319	0	1	0.049	0.181
Open-Ended Contract	3346	0.393	0.489	0	1	0.349	0.438
Fixed-Term Contract	3346	0.112	0.316	0	1	0.100	0.125
Seasonal Contract	3346	0.021	0.144	0	1	0.009	0.034
Independent Contractor/Freelancer	3346	0.156	0.363	0	1	0.139	0.173
Redundancy Fund Benefits	3346	0.006	0.077	0	1	0.003	0.009
Redundancy Worker	3346	0.007	0.086	0	1	0.004	0.011
Housewife	3346	0.019	0.136	0	1	0.013	0.024
Student	3346	0.060	0.237	0	1	0.038	0.082
Retired	3346	0.099	0.299	0	1	0.081	0.118
Not working	3346	0.126	0.332	0	1	0.102	0.150
Income class: <15	3346	0.292	0.455	0	1	0.249	0.334
Income class: 15-30	3346	0.361	0.480	0	1	0.340	0.382
Income class: 30-50	3346	0.183	0.387	0	1	0.154	0.212
Income class: 50-100	3346	0.065	0.246	0	1	0.050	0.080
Income class: > 100	3346	0.010	0.097	0	1	0.005	0.014
Income class: no answer	3346	0.090	0.286	0	1	0.076	0.103
No school	3346	0.003	0.055	0	1	0.001	0.005
Primary school	3346	0.010	0.099	0	1	0.002	0.017
Middle school	3346	0.064	0.244	0	1	0.043	0.084
High School	3346	0.347	0.476	0	1	0.320	0.374
Vocational High School	3346	0.028	0.164	0	1	0.020	0.036
Bachelor' Degree	3346	0.134	0.341	0	1	0.121	0.148
Masters' Degree	3346	0.387	0.487	0	1	0.353	0.421
Phd	3346	0.027	0.164	0	1	0.017	0.038
Newspaper/magazines	3346	0.090	0.286	0	1	0.065	0.115
Online newspapers	3346	0.276	0.447	0	1	0.196	0.357
Social network/blogs	3346	0.129	0.335	0	1	0.104	0.153
Institutions/public entities	3346	0.012	0.110	0	1	0.007	0.018
Social network/third sector/associationism and coooperation	3346	0.166	0.372	0	1	0.100	0.232
Third sector manager training program	3346	0.102	0.303	0	1	0.068	0.136
Other	3346	0.013	0.111	0	1	0.008	0.017
Friends	3346	0.212	0.409	0	1	0.149	0.274
Single	3346	0.354	0.478	0	1	0.322	0.387
Separated	3346	0.036	0.187	0	1	0.028	0.045
Divorced	3346	0.024	0.152	0	1	0.017	0.030
Widowed	3346	0.016	0.125	0	1	0.010	0.022
Married	3346	0.570	0.495	0	1	0.541	0.599

Table 2 - Life satisfaction and preferences for economic well-being vs. social relations

			driver_ecowell	*driver_social*
Life_Sat	summary statistics	*mean*	9.64	7.14
		std. dev.	12.302	6.125
		obs.	3346	
	parametric test	*Pr(T < t)*	1.000	
		Pr(|T| > |t|)	0.000	
		Pr(T > t)	0.000	
	non-parametric test	*z-stat*	6.425	
		p-value	0.000	
Life_Sat (1-3)	summary statistics	*mean*	12.99	6.43
		std. dev.	19.37	6.256
		obs.	138	
	parametric test	*Pr(T < t)*	0.9998	
		Pr(|T| > |t|)	0.0004	
		Pr(T > t)	0.0002	
	non-parametric test	*z-stat*	3.219	
		p-value	0.001	
Life_Sat (4-6)	summary statistics	*mean*	13.56	7.11
		std. dev.	18.052	7.260
		obs.	859	
	parametric test	*Pr(T < t)*	1.000	
		Pr(|T| > |t|)	0.000	
		Pr(T > t)	0.000	
	non-parametric test	*z-stat*	9.244	
		p-value	0.000	
Life_Sat (7-9)	summary statistics	*mean*	8.07	7.17
		std. dev.	8.212	5.343
		obs.	2102	
	parametric test	*Pr(T < t)*	1.000	
		Pr(|T| > |t|)	0.000	
		Pr(T > t)	0.000	
	non-parametric test	*z-stat*	1.057	
		p-value	0.291	
Life_Sat (10)	summary statistics	*mean*	7.50	7.39
		std. dev.	7.131	7.769
		obs.	247	
	parametric test	*Pr(T < t)*	0.5604	
		Pr(|T| > |t|)	0.8793	
		Pr(T > t)	0.4396	
	non-parametric test	*z-stat*	-0.222	
		p-value	0.8240	

Table 3 – Life satisfaction and well-being domains: ordered logit regressions

	Dep var: *life_sat*	(1) OLOGIT	(2) OLOGIT	(3) OLOGIT	(4) OLOGIT
Investment Choice:					
	Driver_Health		-0.0167***	-0.0163***	-0.0182***
			(0.00603)	(0.00558)	(0.00526)
	Driver_Edu		0.00249	0.00529	0.00273
			(0.00682)	(0.00627)	(0.00572)
	Driver_Job		-0.0204***	-0.0182***	-0.0207***
			(0.00587)	(0.00584)	(0.00521)
	Driver_Ecowell		-0.0341***	-0.0218***	-0.0231***
			(0.00572)	(0.00525)	(0.00474)
	Driver_Politics		0.00883	0.00631	0.00284
			(0.0144)	(0.0114)	(0.0111)
	Driver_Security		-0.0121*	-0.0118	-0.0141**
			(0.00694)	(0.00731)	(0.00709)
	Driver_Cultur		-0.0188**	-0.0155*	-0.0171*
			(0.00935)	(0.00930)	(0.00888)
	Driver_Environ		-0.00483	-0.00349	-0.00481
			(0.00946)	(0.00938)	(0.00888)
	Driver_Innovation		-0.0118	-0.00678	-0.00870
			(0.00748)	(0.00744)	(0.00756)
	Driver_Serviqual		-0.00581	-0.00555	-0.00912
			(0.00836)	(0.00810)	(0.00802)
	Income_Sat			0.446***	0.447***
				(0.0192)	(0.0194)
Sociodemographic characteristics:					
	Italian	0.310	0.180	0.233	0.200
		(0.205)	(0.208)	(0.212)	(0.202)
	Female	-0.112**	-0.0693	-0.186***	-0.191***
		(0.0516)	(0.0512)	(0.0574)	(0.0553)
	RightWing	0.0281***	0.0389***	0.0357***	0.0351***
		(0.00883)	(0.00813)	(0.00825)	(0.00841)
	Age – under 25	0.361**	0.497***	0.286*	0.285*
		(0.159)	(0.150)	(0.162)	(0.169)
	Age 25-30	0.176	0.186	0.204	0.215*
		(0.132)	(0.131)	(0.125)	(0.127)
	Age 35-40	-0.0707	-0.112	-0.0522	-0.0532
		(0.109)	(0.107)	(0.103)	(0.106)
	Age 40-45	0.000778	-0.0357	0.0120	0.00898
		(0.112)	(0.112)	(0.123)	(0.120)
	Age 45-50	0.0243	-0.0341	0.0418	0.0373
		(0.118)	(0.118)	(0.112)	(0.110)
	Age 50-55	-0.156	-0.183	-0.162	-0.168
		(0.137)	(0.129)	(0.118)	(0.121)
	Age 55-60	-0.154	-0.175	-0.136	-0.140
		(0.202)	(0.189)	(0.169)	(0.170)
	Age 60-65	-0.0814	-0.109	-0.288	-0.304*
		(0.190)	(0.190)	(0.183)	(0.180)
	Age 65-70	-0.163	-0.255	-0.456**	-0.469**
		(0.221)	(0.238)	(0.218)	(0.217)
	Age 70-75	0.0972	-0.0197	-0.249	-0.309
		(0.373)	(0.373)	(0.395)	(0.402)
	Age 75-80	0.0118	-0.171	-0.474	-0.393
		(0.375)	(0.350)	(0.336)	(0.342)
	Age – over 80	-0.116	0.118	0.569	0.586
		(0.703)	(0.622)	(0.799)	(0.817)
	Single	-0.374***	-0.422***	-0.422***	-0.330***
		(0.0732)	(0.0800)	(0.0800)	(0.0836)
	Separated	-0.493***	-0.469***	-0.469***	-0.239*
		(0.165)	(0.156)	(0.156)	(0.132)
	Divorced	-0.661***	-0.590**	-0.590**	-0.469**
		(0.236)	(0.230)	(0.230)	(0.219)
	Widowed	-1.008***	-0.910***	-0.910***	-0.721***
		(0.273)	(0.265)	(0.265)	(0.259)
	High School	0.552***	0.266*	0.266*	0.0949
		(0.173)	(0.159)	(0.159)	(0.152)
	Vocational High School	0.383*	0.232	0.232	0.0450
		(0.225)	(0.223)	(0.223)	(0.227)
	Bachelor' Degree	0.689***	0.372**	0.372**	0.167
		(0.199)	(0.167)	(0.167)	(0.166)
	Masters' Degree	0.717***	0.387***	0.387***	0.190
		(0.176)	(0.149)	(0.149)	(0.150)
	Phd	0.784***	0.484*	0.484*	0.285
		(0.278)	(0.278)	(0.278)	(0.272)
Job status:					
	Open-Ended Contract	0.725***	0.686***	-0.146	-0.123
		(0.122)	(0.123)	(0.109)	(0.110)
	Fixed-Term Contract	0.441***	0.467***	-0.225*	-0.207*

	(0.162)	(0.148)	(0.125)	(0.125)
Seasonal Contract	0.679***	0.863***	0.384	0.428
	(0.229)	(0.172)	(0.309)	(0.315)
Independent Contractor/Freelancer	0.620***	0.560***	-0.000469	0.0183
	(0.102)	(0.108)	(0.101)	(0.103)
Redundancy Fund Benefits	0.381	0.656*	0.455	0.503
	(0.386)	(0.395)	(0.419)	(0.417)
Redundancy Worker	0.102	0.138	-0.301	-0.246
	(0.297)	(0.303)	(0.336)	(0.324)
Housewife	1.084***	1.022***	0.0212	0.0308
	(0.277)	(0.268)	(0.286)	(0.284)
Student	0.865***	0.713***	0.117	0.106
	(0.187)	(0.180)	(0.175)	(0.175)
Retired	0.751***	0.726***	-0.0243	0.00584
	(0.202)	(0.206)	(0.203)	(0.202)
Income class (€/year):				
15.000-30.000	0.449***	0.405***	-0.0519	-0.0505
	(0.0934)	(0.0910)	(0.0885)	(0.0899)
30.000-50.000	0.542***	0.505***	-0.192*	-0.182
	(0.119)	(0.118)	(0.115)	(0.115)
50.000-100.000	0.884***	0.883***	-0.0710	-0.0518
	(0.167)	(0.166)	(0.165)	(0.165)
>100.000	1.043***	1.077***	-0.220	-0.223
	(0.378)	(0.356)	(0.388)	(0.383)
no answer	0.179	0.205	-0.107	-0.0835
	(0.139)	(0.147)	(0.136)	(0.133)
Source of information:				
Newspaper/magazines	-0.191	-0.178	-0.128	-0.105
	(0.143)	(0.147)	(0.132)	(0.136)
Online newspapers	-0.268***	-0.252***	-0.209*	-0.176
	(0.102)	(0.0967)	(0.109)	(0.110)
Social network/blogs	-0.353***	-0.386***	-0.339***	-0.326***
	(0.102)	(0.108)	(0.122)	(0.119)
Institutions/public entities	-0.387	-0.420	-0.210	-0.206
	(0.395)	(0.368)	(0.506)	(0.497)
Social network/third sector/associationism and coooperation	-0.333***	-0.166*	-0.182**	-0.159*
	(0.0996)	(0.0900)	(0.0918)	(0.0898)
Third sector manager training program	0.0581	0.0220	-0.0144	0.0168
	(0.124)	(0.132)	(0.105)	(0.111)
Other	-0.358	-0.370	-0.370	-0.314
	(0.273)	(0.269)	(0.232)	(0.225)
Geographic area (in Italy):				
North-east	0.194	0.157	0.0869	
	(0.120)	(0.119)	(0.0988)	
North-west	0.205	0.154	0.163	
	(0.133)	(0.126)	(0.112)	
South and islands	-0.209*	-0.154	-0.105	
	(0.114)	(0.111)	(0.0926)	
Region Dummies	NO	NO	NO	YES
Observations	3,346	3,346	3,346	3,346

Robust standard errors clustered at municipality level in parentheses. Omitted categories: *Age 30-35* (Age); *Married/Cohabitant* (Marital Status); *<15.000€* (Income class), *Not Working/Unemployed/Looking for a Job* (Job status), *Friends* (Source of information), *Center* (Geographic area).
*** p<0.01, ** p<0.05, * p<0.1

Table 4 – Tackling endogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	OLS				**IV**		**OPROBIT**	**TOBIT**	**TOBIT**	**TOBIT**
dep var:	*life_sat*	*ratio_LS*	*life_sat*	*ratio_LS*	*life_sat*	*ratio_LS*	*life_sat*	*driver_ecowell*	*ratio_LS*	*ratio_EW*
driver_ecowell	-0.013***		-0.012***		-0.015***		-0.0269***			
	(0.0026)		(0.0029)		(0.0050)		(0.00850)			
income_sat	0.360***		0.360***		0.359***		0.225***	-0.709***		
	(0.0160)		(0.0160)		(0.0158)		(0.0138)	(0.165)		
ratio_IS		0.271***		0.271***		0.269***			0.237***	-0.345***
		(0.0142)		(0.0142)		(0.0122)			(0.0215)	(0.0458)
ratio_EW		-0.018***		-0.015**		-0.022***			-0.127***	
		(0.0058)		(0.0066)		(0.0073)			(0.0446)	
mean_EW			0.202	0.050				0.769***		-0.00799
			(0.3894)	(0.0647)				(0.143)		(0.00626)
Sociodemographic characteristics										
italian	0.206	0.037	0.206	0.037	0.193	0.036	-0.0168	-5.842*	0.0178	-0.165
	(0.1723)	(0.0246)	(0.1721)	(0.0244)	(0.2065)	(0.0298)	(0.129)	(3.164)	(0.0284)	(0.149)
female	-0.142***	-0.020***	-0.142***	-0.020***	-0.139**	-0.020**	-0.0694**	1.899***	-0.00790	0.139***
	(0.0510)	(0.0071)	(0.0510)	(0.0071)	(0.0585)	(0.0082)	(0.0352)	(0.647)	(0.00879)	(0.0497)
RightWing	0.028***	0.004***	0.028***	0.004***	0.029***	0.004***	0.0245***	0.370***	0.00633***	0.0269***
	(0.0062)	(0.0009)	(0.0062)	(0.0009)	(0.0064)	(0.0009)	(0.00488)	(0.113)	(0.00137)	(0.00511)
Age – under 25	0.253*	0.032	0.251*	0.032	0.263*	0.033	0.244**	5.213***	0.0591**	0.272***
	(0.1473)	(0.0205)	(0.1476)	(0.0205)	(0.1504)	(0.0212)	(0.106)	(1.776)	(0.0249)	(0.0757)
Age 25-30	0.116	0.015	0.115	0.015	0.116	0.015	0.0861	0.460	0.0189	0.0523
	(0.1299)	(0.0185)	(0.1300)	(0.0185)	(0.1192)	(0.0169)	(0.0737)	(0.591)	(0.0171)	(0.0585)
Age 35-40	-0.022	-0.003	-0.023	-0.003	-0.023	-0.003	-0.0148	-0.823	-0.00220	-0.0144
	(0.0861)	(0.0121)	(0.0861)	(0.0121)	(0.1087)	(0.0153)	(0.0580)	(0.996)	(0.0124)	(0.0805)
Age 40-45	-0.004	-0.001	-0.003	-0.001	-0.007	-0.001	-0.0233	-2.075**	-0.0116	-0.137*
	(0.0989)	(0.0139)	(0.0991)	(0.0139)	(0.1095)	(0.0155)	(0.0693)	(0.964)	(0.0159)	(0.0740)
Age 45-50	0.029	0.002	0.028	0.002	0.025	0.001	0.00992	-2.443**	-0.0159	-0.208**
	(0.0894)	(0.0124)	(0.0894)	(0.0124)	(0.1135)	(0.0159)	(0.0631)	(0.998)	(0.0157)	(0.0897)
Age 50-55	-0.136	-0.020	-0.137	-0.020	-0.140	-0.021	-0.119*	-2.201**	-0.0359**	-0.181**
	(0.1041)	(0.0147)	(0.1041)	(0.0147)	(0.1188)	(0.0167)	(0.0700)	(0.950)	(0.0164)	(0.0778)
Age 55-60	-0.185	-0.028	-0.185	-0.028	-0.187	-0.029	-0.107	-1.725	-0.0370*	-0.126
	(0.1686)	(0.0235)	(0.1687)	(0.0235)	(0.1368)	(0.0191)	(0.100)	(1.184)	(0.0214)	(0.106)
Age 60-65	-0.223	-0.032	-0.222	-0.032	-0.227	-0.033	-0.207**	-2.649**	-0.0474**	-0.196*
	(0.1515)	(0.0209)	(0.1514)	(0.0208)	(0.1495)	(0.0209)	(0.103)	(1.329)	(0.0219)	(0.116)
Age 65-70	-0.447**	-0.061**	-0.446**	-0.061**	-0.453**	-0.062**	-0.319**	-3.598*	-0.0799***	-0.226*
	(0.1959)	(0.0269)	(0.1959)	(0.0269)	(0.1896)	(0.0266)	(0.141)	(1.884)	(0.0309)	(0.137)
Age 70-75	-0.246	-0.028	-0.246	-0.028	-0.257	-0.030	-0.251	-6.401***	-0.0688*	-0.450***
	(0.3265)	(0.0458)	(0.3266)	(0.0459)	(0.2391)	(0.0336)	(0.212)	(2.244)	(0.0369)	(0.169)
Age 75-80	-0.075	-0.003	-0.078	-0.004	-0.084	-0.004	-0.246	-4.955*	-0.0256	-0.259
	(0.3427)	(0.0528)	(0.3434)	(0.0529)	(0.3154)	(0.0479)	(0.202)	(2.845)	(0.0451)	(0.204)
Age – over 80	0.108	0.019	0.107	0.018	0.098	0.018	0.0929	-6.387	0.00116	-0.284
	(0.7863)	(0.1124)	(0.7860)	(0.1125)	(0.7926)	(0.1112)	(0.406)	(5.508)	(0.0881)	(0.547)
single	-0.252***	-0.034***	-0.252***	-0.034***	-0.255***	-0.034***	-0.208***	-1.316*	-0.0375***	-0.0410
	(0.0728)	(0.0100)	(0.0730)	(0.0100)	(0.0714)	(0.0100)	(0.0511)	(0.691)	(0.0118)	(0.0558)
separated	-0.216	-0.030	-0.216	-0.030	-0.217	-0.030	-0.159*	-0.299	-0.0302	-0.00901
	(0.1327)	(0.0183)	(0.1327)	(0.0183)	(0.1493)	(0.0209)	(0.0865)	(1.013)	(0.0196)	(0.0849)
divorced	-0.437**	-0.063**	-0.436**	-0.063**	-0.438**	-0.063**	-0.295**	-0.276	-0.0635**	-0.0276
	(0.2037)	(0.0279)	(0.2043)	(0.0280)	(0.1770)	(0.0249)	(0.117)	(1.400)	(0.0268)	(0.125)
widowed	-0.879***	-0.129***	-0.878***	-0.129***	-0.876***	-0.128***	-0.506***	1.934	-0.108**	0.247*
	(0.2829)	(0.0410)	(0.2832)	(0.0411)	(0.2767)	(0.0401)	(0.168)	(1.853)	(0.0461)	(0.144)
high school	0.227*	0.038**	0.227*	0.037**	0.214	0.037**	-0.00157	-5.709**	0.0122	-0.213*
	(0.1260)	(0.0173)	(0.1259)	(0.0174)	(0.1324)	(0.0182)	(0.0950)	(2.478)	(0.0219)	(0.115)
vocational high school	0.227	0.034	0.224	0.033	0.223	0.033	0.0930	-1.348	0.0239	-0.0651
	(0.2123)	(0.0296)	(0.2132)	(0.0298)	(0.1935)	(0.0274)	(0.135)	(1.627)	(0.0323)	(0.148)
bachelor' degree	0.338**	0.055***	0.338**	0.054***	0.324**	0.053***	0.0516	-6.405**	0.0241	-0.258**
	(0.1346)	(0.0192)	(0.1347)	(0.0193)	(0.1467)	(0.0201)	(0.0926)	(2.864)	(0.0199)	(0.127)
masters' degree	0.312***	0.050***	0.312***	0.049***	0.298**	0.048**	0.0282	-6.781**	0.0158	-0.293**
	(0.1174)	(0.0160)	(0.1174)	(0.0161)	(0.1385)	(0.0189)	(0.101)	(2.893)	(0.0235)	(0.131)
phd	0.329	0.051	0.327	0.051	0.317	0.050*	0.0812	-5.245**	0.0232	-0.239*
	(0.2283)	(0.0315)	(0.2286)	(0.0315)	(0.2159)	(0.0298)	-0.0168	-5.842*	0.0178	-0.165
Job status:										
open-ended contract	-0.023	-0.002	-0.024	-0.003	-0.023	-0.002	-0.0594	0.321	0.00605	0.0832
	(0.1015)	(0.0142)	(0.1013)	(0.0142)	(0.1015)	(0.0142)	(0.0646)	(0.782)	(0.0150)	(0.0747)
fixed-term contract	-0.090	-0.014	-0.090	-0.014	-0.090	-0.014	-0.0930	1.779*	-0.00192	0.140*
	(0.1234)	(0.0178)	(0.1235)	(0.0178)	(0.1234)	(0.0178)	(0.0701)	(1.076)	(0.0174)	(0.0713)
seasonal contract	0.525**	0.064	0.529**	0.066*	0.525**	0.064	0.424***	7.490***	0.0965***	0.320**
	(0.2577)	(0.0390)	(0.2598)	(0.0392)	(0.2577)	(0.0390)	(0.145)	(2.798)	(0.0295)	(0.141)
independent contractor/ freelancer	0.130	0.019	0.130	0.019	0.130	0.019	0.0197	-0.311	0.0225	0.0493
	(0.0883)	(0.0125)	(0.0884)	(0.0125)	(0.0883)	(0.0125)	(0.0592)	(0.920)	(0.0143)	(0.0813)
redundancy fund	0.516	0.067	0.515	0.068	0.516	0.067	0.424	10.15***	0.114**	0.509**
benefits	(0.3567)	(0.0498)	(0.3565)	(0.0498)	(0.3567)	(0.0498)	(0.265)	(3.638)	(0.0571)	(0.210)
redundancy worker	-0.188	-0.028	-0.189	-0.028	-0.188	-0.028	-0.169	0.359	-0.0160	0.0955
	(0.3041)	(0.0423)	(0.3042)	(0.0424)	(0.3041)	(0.0423)	(0.172)	(2.473)	(0.0421)	(0.270)
housewife	0.211	0.034	0.211	0.034	0.211	0.034	0.0959	-1.193	0.0368	0.0415
	(0.2404)	(0.0349)	(0.2405)	(0.0349)	(0.2404)	(0.0349)	(0.165)	(3.034)	(0.0360)	(0.217)
student	0.116	0.020	0.116	0.019	0.116	0.020	-0.00648	-3.338	0.0111	-0.0715

	(0.1702)	(0.0238)	(0.1703)	(0.0237)	(0.1702)	(0.0238)	(0.118)	(2.144)	(0.0250)	(0.119)
retired	0.124	0.017	0.124	0.017	0.124	0.017	0.0451	1.512	0.0370	0.245*
	(0.1750)	(0.0237)	(0.1750)	(0.0237)	(0.1750)	(0.0237)	(0.112)	(1.282)	(0.0237)	(0.135)
Income class (€/year):										
15.000-30.000	-0.040	-0.006	-0.040	-0.006	-0.040	-0.006	-0.0536	-0.127	-0.00595	0.0225
	(0.0792)	(0.0109)	(0.0793)	(0.0109)	(0.0792)	(0.0109)	(0.0493)	(0.477)	(0.0104)	(0.0465)
30.000-50.000	-0.134	-0.018	-0.133	-0.018	-0.134	-0.018	-0.114*	0.110	-0.0146	0.0479
	(0.1023)	(0.0141)	(0.1023)	(0.0142)	(0.1023)	(0.0141)	(0.0675)	(0.599)	(0.0144)	(0.0592)
50.000-100.000	-0.072	-0.006	-0.073	-0.006	-0.072	-0.006	-0.0220	1.956**	0.00857	0.172**
	(0.1502)	(0.0202)	(0.1498)	(0.0201)	(0.1502)	(0.0202)	(0.107)	(0.868)	(0.0219)	(0.0720)
>100.000	-0.174	-0.015	-0.173	-0.014	-0.174	-0.015	-0.0840	2.441	0.00591	0.179
	(0.3108)	(0.0422)	(0.3109)	(0.0423)	(0.3108)	(0.0422)	(0.222)	(1.584)	(0.0423)	(0.139)
no answer	-0.019	-0.003	-0.018	-0.002	-0.019	-0.003	-0.00127	1.721**	0.00985	0.138**
	(0.1142)	(0.0162)	(0.1143)	(0.0162)	(0.1142)	(0.0162)	(0.0792)	(0.854)	(0.0191)	(0.0649)
Source of information:										
Newspapers/	-0.179	-0.027*	-0.179	-0.027*	-0.18	-0.03	-0.0753	-0.756	-0.0410**	-0.125
magazines	(0.1153)	(0.0161)	(0.1155)	(0.0161)	(0.125)	(0.017)	(0.0749)	(0.832)	(0.0177)	(0.0782)
	-0.209**	-0.029*	-0.210**	-0.029*	-0.21**	-0.03**	-0.119*	-0.460	-0.0372**	-0.0683
Online newspapers	(0.1024)	(0.0145)	(0.1024)	(0.0145)	(0.096)	(0.014)	(0.0620)	(0.653)	(0.0151)	(0.0511)
	-0.306***	-0.042***	-0.306***	-0.042***	-0.31***	-0.04***	-0.208***	-0.617	-0.0492***	-0.0287
Social networks/blogs	(0.0913)	(0.0130)	(0.0915)	(0.0130)	(0.103)	(0.014)	(0.0581)	(0.762)	(0.0119)	(0.0622)
	-0.079	-0.010	-0.080	-0.010	-0.08	-0.01	-0.0753	-2.715*	-0.0399	-0.265*
Institutions/public entities	(0.3646)	(0.0519)	(0.3651)	(0.0519)	(0.337)	(0.047)	(0.239)	(1.564)	(0.0546)	(0.142)
Social network/	-0.140*	-0.025**	-0.141*	-0.025**	-0.13	-0.02*	-0.0150	4.789**	-0.0108	0.150*
Associationism (…)	(0.0799)	(0.0112)	(0.0799)	(0.0112)	(0.097)	(0.014)	(0.0720)	(2.001)	(0.0157)	(0.0857)
	0.042	0.007	0.042	0.007	0.04	0.01	0.00934	0.305	0.0128	0.0669
Third sector manager (…)	(0.1045)	(0.0153)	(0.1045)	(0.0153)	(0.100)	(0.014)	(0.0725)	(0.691)	(0.0176)	(0.0645)
Other	-0.360*	-0.052**	-0.364*	-0.053**	-0.37*	-0.05*	-0.270**	-4.117**	-0.0879***	-0.428***
	(0.1881)	(0.0256)	(0.1886)	(0.0255)	(0.202)	(0.028)	(0.130)	(1.738)	(0.0318)	(0.147)
Geographic area (in Italy):										
north-east								-0.203		-0.0126
								(0.580)		(0.0502)
north-west								-0.408		-0.0253
								(0.457)		(0.0390)
south and islands								-1.467***		-0.0709*
								(0.564)		(0.0374)
regional dummies	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO
Observations	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346
Adjusted R-squared	0.266	0.237	0.266	0.237	0.266	0.237				
Excluded instruments					mean_EW	mean_EW				
Instrumented					driver_ecowel	ratio_EW				
Weak id. test, F					21.64	35.09				
Standard errors	clustered by municipality (n. 108)				robust		clustered by municipality (n. 108)			

Omitted categories: *Age 30-35* (Age); *Married/Cohabitant* (Marital Status); *<15.000€* (Income class), *Not Working/Unemployed/Looking for a Job* (Job status), *Friends* (Source of information), *Center* (Geographic area). *** p<0.01, ** p<0.05, * p<0.1

Table 5: economic well-being preferences and life satisfaction (heterogeneous effects – IV))

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
sample split:	below-median *income class*		above-median *income class*		ed. at least *high school*		ed. above *high school*	
dep var:	life_sat	driver_ecowell	life_sat	driver_ecowell	life_sat	driver_ecowell	life_sat	driver_ecowell
driver_ecowell	-0.00663		-0.0293***		-0.0125***		-0.0103	
	(0.00467)		(0.00990)		(0.00449)		(0.00849)	
income_sat	0.242***	-0.685***	0.215***	-0.712***	0.239***	-0.909***	0.244***	-0.467***
	(0.0136)	(0.185)	(0.0236)	(0.185)	(0.0157)	(0.247)	(0.0150)	(0.110)
mean_EW		0.802***		0.613***		1.204***		0.405***
		(0.171)		(0.0848)		(0.171)		(0.111)
Sociodemographic characteristics								
italian	0.239*	-2.378	-0.324	-12.42**	0.226*	-9.372**	-0.112	0.868
	(0.131)	(2.225)	(0.322)	(5.501)	(0.128)	(3.932)	(0.193)	(1.806)
female	-0.110**	2.087***	-0.0468	1.711**	-0.0409	2.552**	-0.146***	1.592**
	(0.0453)	(0.789)	(0.0788)	(0.756)	(0.0603)	(1.082)	(0.0519)	(0.650)
RightWing	0.0184***	0.384***	0.0267***	0.293***	0.0168***	0.405**	0.0251***	0.362***
	(0.00626)	(0.137)	(0.00762)	(0.0713)	(0.00553)	(0.166)	(0.00719)	(0.0888)
single	-0.158***	-1.604**	-0.257***	0.148	-0.105	-1.886*	-0.262***	-1.041
	(0.0557)	(0.787)	(0.0995)	(1.249)	(0.0726)	(1.113)	(0.0673)	(0.722)
separated	-0.158	-0.795	-0.166	0.432	-0.0763	1.159	-0.277***	-0.162
	(0.126)	(1.370)	(0.172)	(1.147)	(0.150)	(2.038)	(0.0979)	(1.139)
divorced	-0.340**	-1.057	-0.267	0.642	-0.244	-1.951	-0.297	1.893
	(0.150)	(1.774)	(0.183)	(1.799)	(0.152)	(2.433)	(0.193)	(2.006)
widowed	-0.492***	3.314*	-0.618**	1.087	-0.469***	2.047	-0.718**	1.566
	(0.178)	(1.805)	(0.305)	(1.297)	(0.162)	(1.708)	(0.353)	(1.669)
high school	0.132	-4.595**	-0.136	-9.175**				
	(0.0986)	(2.215)	(0.197)	(4.090)				
vocational high school	0.0868	-0.811	0.322	0.153				
	(0.177)	(1.962)	(0.324)	(4.794)				
bachelor' degree	0.209**	-6.007**	-0.102	-8.488*				
	(0.102)	(2.563)	(0.207)	(4.600)				
masters' degree	0.210**	-5.799**	-0.142	-9.028**				
	(0.102)	(2.490)	(0.194)	(4.421)				
phd	0.369**	-4.582**	-0.317	-7.330*				
	(0.170)	(2.144)	(0.274)	(4.205)				
age class dummies	YES	YES	YES	YES	YES	YES	YES	YES
Job status:								
open-ended contract	-0.0364	0.366	-0.253*	-0.165	0.174*	-1.148	-0.312***	1.083
	(0.0723)	(0.816)	(0.153)	(1.431)	(0.101)	(1.628)	(0.0987)	(0.906)
fixed-term contract	-0.0831	2.593**	-0.381*	-1.627	-0.0111	1.862	-0.266***	1.746*
	(0.0927)	(1.165)	(0.223)	(1.739)	(0.143)	(1.718)	(0.0747)	(0.942)
seasonal contract	0.383	11.49***	-0.427	-12.64**	0.328*	6.225**	0.427	7.268**
	(0.256)	(3.282)	(0.426)	(5.051)	(0.199)	(2.999)	(0.293)	(3.161)
independent contractor/	0.0717	0.589	-0.198	-1.728	0.300**	-1.276	-0.216**	0.122
freelancer	(0.0688)	(1.063)	(0.162)	(1.543)	(0.125)	(1.882)	(0.0892)	(0.921)
redundancy fund	0.151	12.40***	0.481	-8.664	0.362	9.021***	0.425***	2.718
benefits	(0.249)	(3.661)	(0.541)	(7.575)	(0.366)	(2.959)	(0.156)	(2.912)
redundancy worker	-0.148	0.288	-0.275	3.055***	0.0471	1.040	-0.956	-5.947
	(0.207)	(2.846)	(0.468)	(1.149)	(0.201)	(2.653)	(0.779)	(5.502)
housewife	0.210	-2.713	0.0215	1.472	0.318	-0.169	-0.132	-1.651
	(0.267)	(4.125)	(0.286)	(2.681)	(0.210)	(3.448)	(0.257)	(2.275)
student	0.0752	-0.466	-0.150	-9.340**	0.149	-4.140	-0.127	-0.634
	(0.154)	(1.718)	(0.211)	(4.056)	(0.138)	(3.021)	(0.169)	(1.306)
retired	0.202	2.447	-0.300*	0.217	0.260	1.608	-0.271	1.811
	(0.150)	(1.849)	(0.178)	(2.073)	(0.182)	(1.942)	(0.180)	(1.565)
Income class (€/year):								
15.000-30.000					-0.0772	0.0163	-0.0461	0.223
					(0.0764)	(0.961)	(0.0619)	(0.688)
30.000-50.000					-0.0480	0.507	-0.176*	-0.314
					(0.103)	(1.248)	(0.0915)	(0.719)
50.000-100.000					0.0177	1.821	-0.0755	1.040
					(0.173)	(1.726)	(0.129)	(0.778)
>100.000					0.188	3.077	-0.226	1.190
					(0.565)	(3.048)	(0.227)	(1.633)
no answer					0.0301	2.627*	-0.120	0.574
					(0.113)	(1.549)	(0.107)	(1.207)
Geographic area (in Italy):								
north-east	0.135**	-1.273*	-0.0867	1.235	0.0804	0.407	0.0305	-0.374
	(0.0687)	(0.733)	(0.0866)	(0.811)	(0.100)	(1.030)	(0.0803)	(0.635)
north-west	0.104	-1.168**	-0.0270	0.139	0.0778	0.894	0.0425	-0.825
	(0.0771)	(0.591)	(0.0876)	(0.773)	(0.0924)	(0.902)	(0.0792)	(0.502)
south and islands	-0.0276	-1.581**	-0.0814	-1.665**	-0.0522	-2.144**	-0.0263	-1.139**
	(0.0609)	(0.675)	(0.0798)	(0.834)	(0.0715)	(0.965)	(0.0575)	(0.551)
Source of information dummies:	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,185	2,185	1,161	1,161	1511	1511	1835	1835

Omitted categories: *Age 30-35* (Age); *Married/Cohabitant* (Marital Status); *<15.000€* (Income class), *Not Working/Unemployed/Looking for a Job* (Job status), *Friends* (Source of information), *Center* (Geographic area). *** p<0.01, ** p<0.05, * p<0.1

Figure 1 – Life satisfaction across well-being domains.

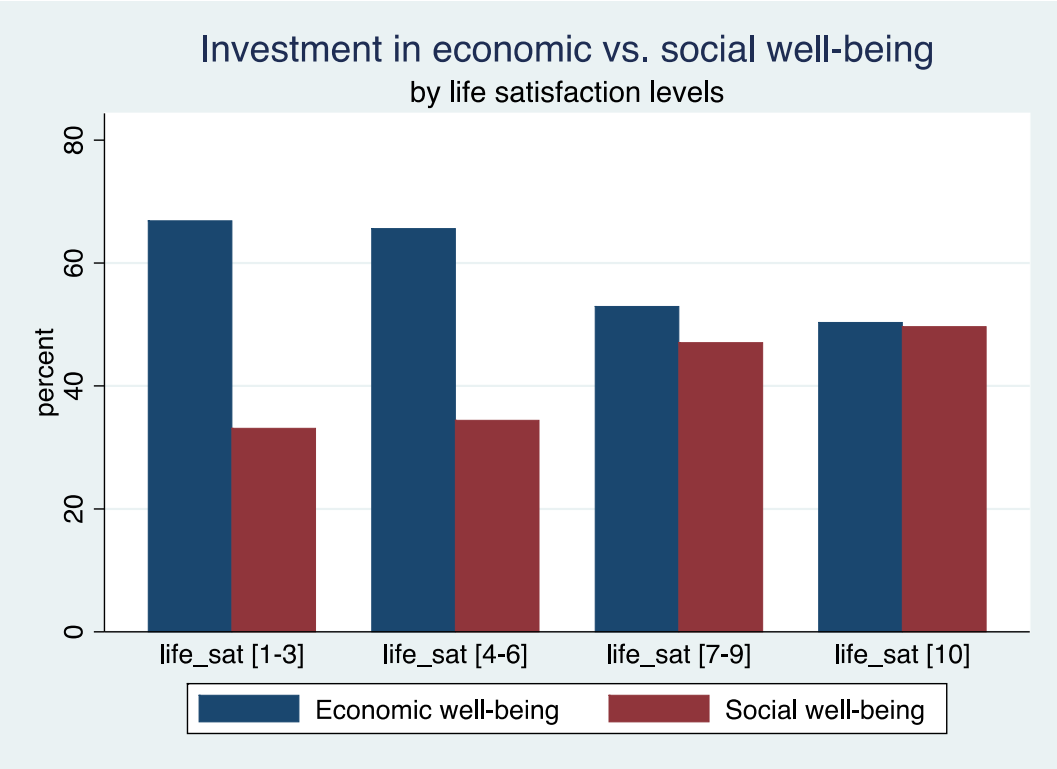
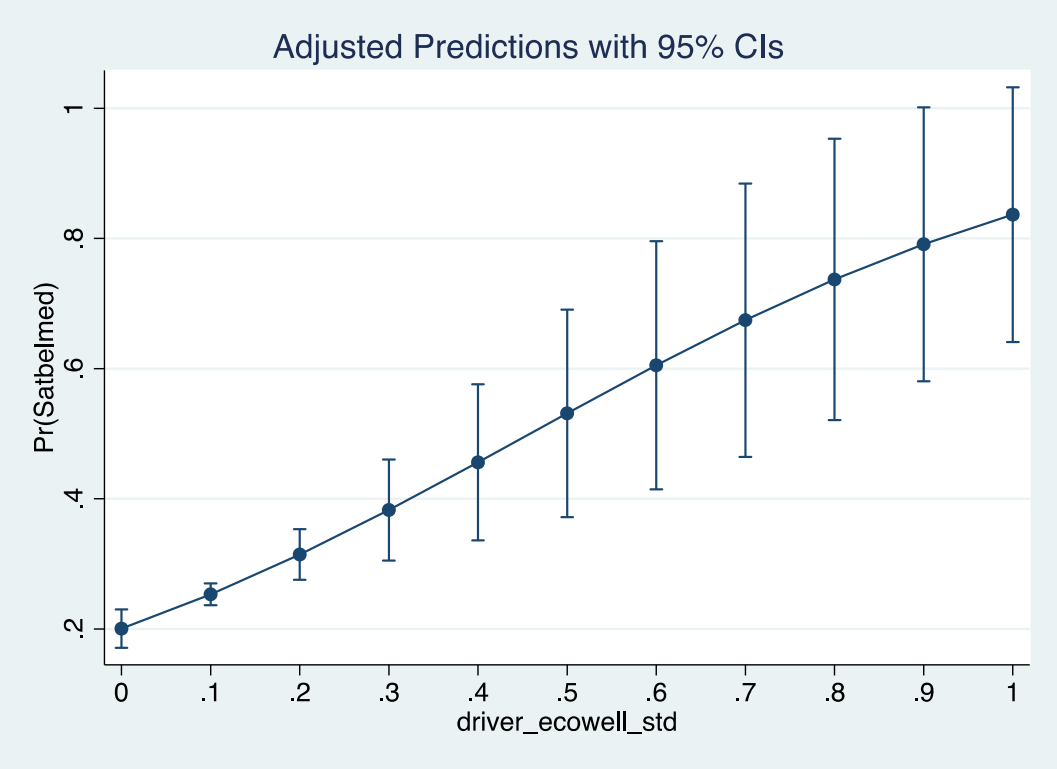
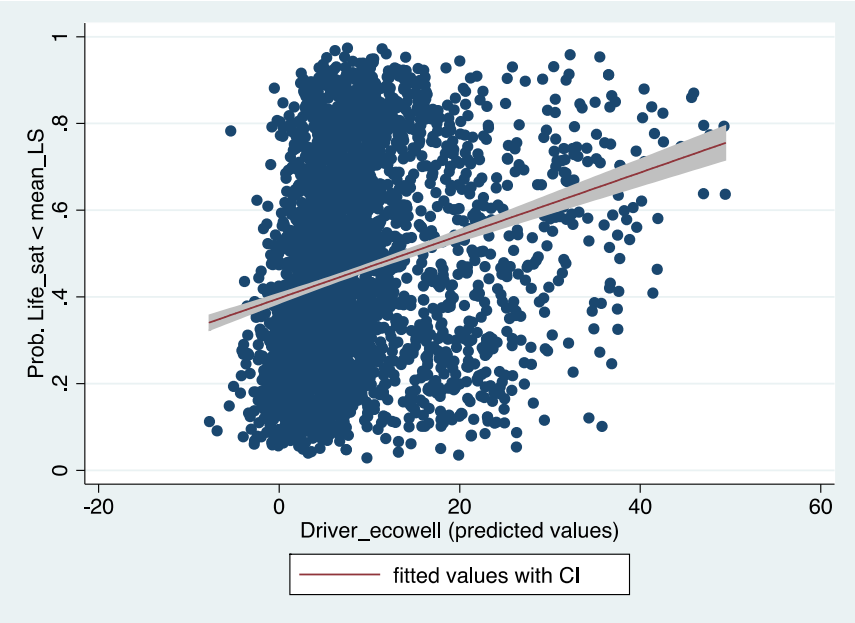


Figure 2 –Economic well-being investment vs. above-median life satisfaction



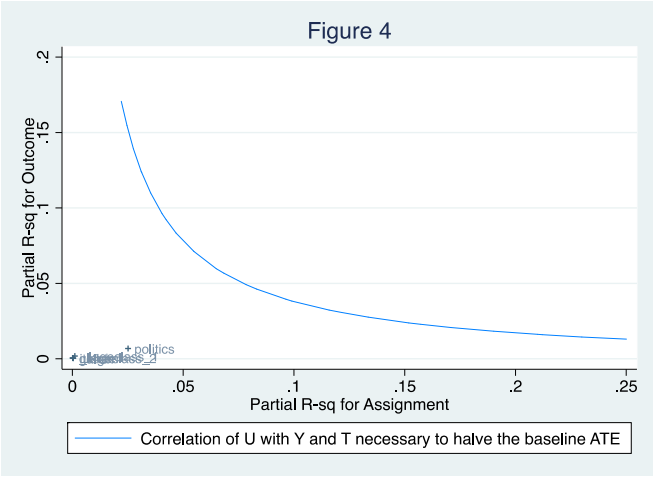
Note: The Figure reports marginal effects for unit-changes in the *driver_ecowell*/100 variable computed after estimating a logistic regression model in which the independent variables are those used in the specification in column 4 of Table 3 while the dependent variable (*Satbelmed*) is a dummy equal to one if *life_sat*<7 and 0 otherwise (seven is the sample median value of *life_sat*).

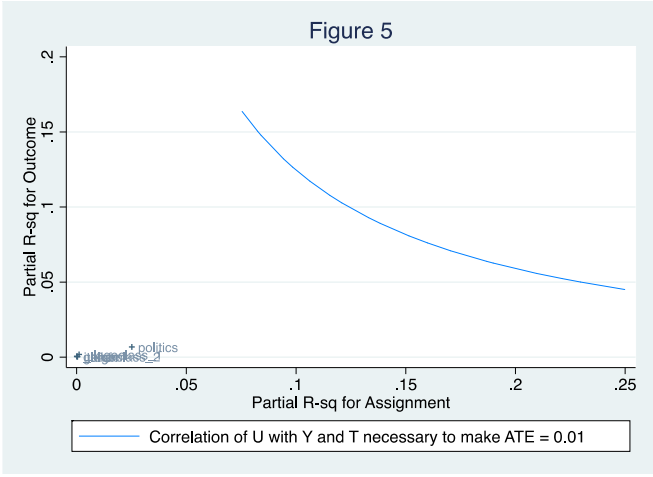
Figure 3 – Life satisfaction and investment in economic well-being

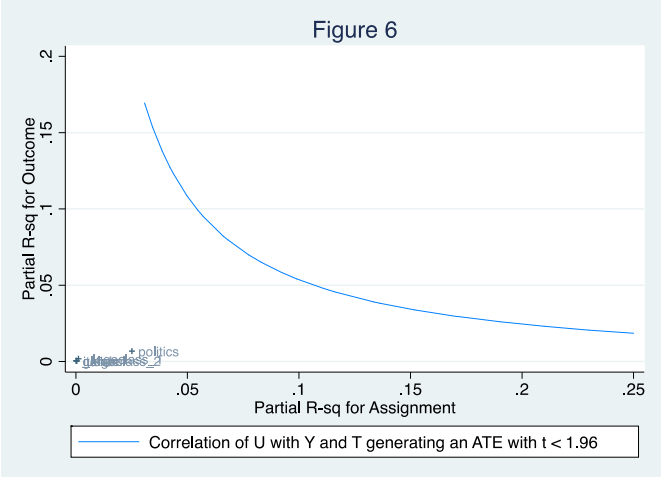


Notes: [1] Variable *Prob. Life_sat* < *mean_LS* (i.e. the prob. that the individual's *life_sat* is below the regional average *life_sat*) contains the predicted probabilities from a logistic regression of *Prob. Life_sat* < *mean_LS* on a set of socio-economic characteristics including civil status, income satisfaction, age, education, regional dummies, employment status, gender, nationality, income class, source of information (see Tables 3-4). [2] Variable *Driver_ecowell* contains the predicted probabilities from a logistic regression of the amount invested in economic well-being on the above-mentioned set of socio-economic characteristics.

Figures 4-6 – Sensitivity Analysis







Notes: [1] We use the ISA program for the general sensitivity analysis (GSA) developed by Hamada (2012) which is built upon Imbens (2003)'s paper. The GSA does not hinge on the binary distributional assumption of U as in Imbens (2003) while generating very similar results. [2] The "+" signs are the partial R^2 values for the X covariates of the baseline model, plotted according to the additional explanatory power of the covariate for T ($I_{Driver\_ecowell_i > \frac{\sum_i Driver\_ecowell_i}{N}}$, horizontal axis) and for Y (*life_sat*, vertical axis); the axis measures variations in the R^2 from adding that X-regressor to the baseline model. [3] The solid curve is the set of partial R^2 for U where the unobserved covariate correlated with both treatment and educational outcomes so to modify magnitude and/or significance of the baseline ATE. [4] In all estimations standard errors are clustered at municipality level.

APPENDIX A

Table A1 - Variable legend

Variable	Description
Life_sat	Self-declared degree of life satisfaction. Individual's answer on a 10-point Likert scale to the question "*All in all, how much do you feel satisfied with regard to your overall life*" [1=completely unsatisfied; 10 = completely satisfied].
Income_sat	Self-declared degree of income satisfaction. Individual's answer on a 10-point Likert scale to the question "*All in all, how much do you feel satisfied with regard to your economic conditions*" [1=completely unsatisfied; 10 = completely satisfied].
Driver_ecowell Driver_health Driver_edu Driver_job Driver_social Driver_politics Driver_security Driver_cultur Driver_environ Driver_innovation Driver_serviqual	Amount invested in each of the 11 drivers (i.e., Economic well-being Health, Education and training, Work and life balance, Social relations, Politics and institutions, Safety, Landscape and cultural heritage, Environment, Research and innovation, Quality of service*)* when answering to the following question: *Imagine you have the responsibility of government and you have an amount equal to 100 units (i.e. 100 million euro) to spend and you can decide how to distribute these resources among the various items making sure, however, the total sum destined is equal to one hundred.*
Ratio_EW	Ratio between the individual-*i*'s investment in the economic well-being driver and average sample investment on that domain in his/her region (the regional sample average has been calculated excluding his/her choice). In other terms, for each individual *i* living in region *j* we calculate the following ratio: $ratio\_EW_{i,j} = \frac{Driver\_ecowell_i}{Mean\_EW_{-i,j}}$, where $Mean\_EW_{-i,j} = \frac{\sum_j Driver\_ecowell_{-i,j}}{n_j - 1}$ (n_j is the total number of individuals in our sample who live in region *j*).
Ratio_IS	Ratio between the individual-*i*'s self-declared level of income satisfaction and the average sample level of income satisfaction in his/her region (the regional sample average has been calculated excluding his/her choice). In other terms, for each individual *i* living in region *j* we calculate the following ratio: $ratio\_IS_{i,j} = \frac{Income\_sat_i}{Mean\_IS_{-i,j}}$, where $Mean\_IS_{-i,j} = \frac{\sum_j Income\_sat_{-i,j}}{n_j - 1}$ (n_j is the total number of individuals in our sample who live in region *j*).
Italian	Dummy variable = 1 if the respondent has an Italian citizenship and 0 otherwise.
Female	Dummy variable = 1 if the respondent's gender is female and 0 otherwise.
RightWing	Respondent's political orientation expressed on a -10/+10 scale (-10 extreme left, +10 extreme right).
Age class	Set of age class dummies picking up five year age intervals starting from 25-30 and ending up with 75-80. *Under 25* and *Over 80* are two end classes also included as age dummies in the estimates, while the 30-35 age class is the omitted benchmark.
North-East	Dummy variable = 1 if the respondent lives in the North Eastern Italian macro-area and 0 otherwise.
North-West	Dummy variable = 1 if the respondent lives in the North Western Italian macro-area and 0 otherwise.
South-and-Islands	Dummy variable = 1 if the respondent lives in the South and Islands Italian macro-area and 0 otherwise.
Center	Dummy variable = 1 if the respondent lives in the Center Italian macro-area and 0 otherwise.
Open-Ended Contract	Dummy variable = 1 if the respondent job status is *Open-ended contract* and 0 otherwise.
Fixed-Term Contract	Dummy variable = 1 if the respondent job status is *Fixed-Term contract* and 0 otherwise.
Seasonal Contract	Dummy variable = 1 if the respondent job status is *Seasonal contract* and 0 otherwise.
Independent Contractor/Freelancer	Dummy variable = 1 if the respondent job status is *Independent Contractor/Freelancer* and 0 otherwise.
Redundancy Fund Benefits	Dummy variable = 1 if the respondent job status is *Redundancy Fund Benefits* and 0 otherwise.
Redundancy Worker	Dummy variable = 1 if the respondent job status is *Redundancy Worker* and 0 otherwise.
Housewife	Dummy variable = 1 if the respondent job status is *Housewife* and 0 otherwise.
Student	Dummy variable = 1 if the respondent job status is *Student* and 0 otherwise.
Retired	Dummy variable = 1 if the respondent job status is *Retired* and 0 otherwise.
Not working	Dummy variable = 1 if the respondent job status is *Unemployed* and 0 otherwise.
Income class: <15	Dummy variable = 1 if the respondent's income-class is *Less than € 15.000 per year* and 0 otherwise.
Income class: 15-30	Dummy variable = 1 if the respondent's income-class is *Between € 15.000 and € 30.000 per year* and 0 otherwise.
Income class: 30-50	Dummy variable = 1 if the respondent's income-class is *Between € 30.000 and € 50.000 per year* and 0 otherwise.
Income class: 50-100	Dummy variable = 1 if the respondent's income-class is *Between € 50.000 and € 100.000 per year* and 0 otherwise.
Income class: > 100	Dummy variable = 1 if the respondent's income-class is *More than € 100.000 per year* and 0 otherwise.
Income class: no answer	Dummy variable = 1 if the respondent's did not select any income-class option and 0 otherwise.
No school	Dummy variable = 1 if the respondent owns any education title and 0 otherwise.
Primary school	Dummy variable = 1 if the respondent owns a primary school title and 0 otherwise.
Middle school	Dummy variable = 1 if the respondent owns a middle school title and 0 otherwise.
High School	Dummy variable = 1 if the respondent owns a upper secondary high school title and 0 otherwise.
Vocational High School	Dummy variable = 1 if the respondent owns a technical vocational high school title (3 years) and 0 otherwise.
Bachelor' Degree	Dummy variable = 1 if the respondent owns bachelor's degree title (3 years) and 0 otherwise.
Masters' Degree	Dummy variable = 1 if the respondent owns masters' degree title (3 years) and 0 otherwise.

Phd	Dummy variable = 1 if the respondent owns Phd title (3 years) and 0 otherwise.
Newspaper/magazines	Dummy variable = 1 if the respondent heard about this research through *newspaper/magazines* and 0 otherwise.
Online newspapers	Dummy variable = 1 if the respondent heard about this research through *online newspapers* and 0 otherwise.
Social network/blogs	Dummy variable = 1 if the respondent heard about this research through *social network/blogs* and 0 otherwise.
Institutions/public entities	Dummy variable = 1 if the respondent heard about this research through *institutions/public entities* and 0 otherwise.
Social network/third sector/associationism and coooperation	Dummy variable = 1 if the respondent heard about this research through *Social network/third sector/Associationism and coooperation* and 0 otherwise.
Third sector manager training program	Dummy variable = 1 if the respondent heard about this research through *Third sector manager training program* and 0 otherwise.
Other	Dummy variable = 1 if the respondent heard about this research through *other sources* and 0 otherwise.
Friends	Dummy variable = 1 if the respondent heard about this research through *acquaintances/friends* and 0 otherwise.
Single	Dummy variable = 1 if the respondent's marital status is *single* and 0 otherwise.
Separated	Dummy variable = 1 if the respondent's marital status is *separated* and 0 otherwise.
Divorced	Dummy variable = 1 if the respondent's marital status is *divorced* and 0 otherwise.
Widowed	Dummy variable = 1 if the respondent's marital status is *widowed* and 0 otherwise.
Married	Dummy variable = 1 if the respondent's marital status is *married* and 0 otherwise.

Table A2 - Life satisfaction and well-being domains: ordered logit regressions (sample balanced)

		(1)	(2)	(3)	(4)
	Dep var: *life_sat*	OLOGIT	OLOGIT	OLOGIT	OLOGIT
Investment Choice:					
	Driver_Health		-0.0168***	-0.0168***	-0.0191***
			(0.00625)	(0.00566)	(0.00550)
	Driver_Edu		0.000715	0.00266	5.29e-05
			(0.00701)	(0.00649)	(0.00603)
	Driver_Job		-0.0217***	-0.0204***	-0.0232***
			(0.00583)	(0.00569)	(0.00526)
	Driver_Ecowell		-0.0352***	-0.0237***	-0.0244***
			(0.00566)	(0.00503)	(0.00461)
	Driver_Politics		0.00646	0.00324	-0.000506
			(0.0143)	(0.0109)	(0.0107)
	Driver_Security		-0.0114	-0.0122	-0.0147**
			(0.00723)	(0.00762)	(0.00749)
	Driver_Cultur		-0.0213**	-0.0180*	-0.0191**
			(0.00954)	(0.00957)	(0.00941)
	Driver_Environ		-0.00735	-0.00745	-0.00865
			(0.00989)	(0.00988)	(0.00952)
	Driver_Innovation		-0.0106	-0.00680	-0.00954
			(0.00775)	(0.00772)	(0.00794)
	Driver_Serviqual		-0.00713	-0.00711	-0.0111
			(0.00842)	(0.00813)	(0.00785)
	Income_Sat			0.443***	0.443***
				(0.0207)	(0.0206)
Sociodemographic characteristics:					
	Italian	0.201	0.0875	0.109	0.0840
		(0.215)	(0.216)	(0.228)	(0.220)
	Female	-0.134**	-0.0935*	-0.210***	-0.214***
		(0.0541)	(0.0542)	(0.0601)	(0.0576)
	RightWing	0.0314***	0.0411***	0.0380***	0.0374***
		(0.00895)	(0.00877)	(0.00889)	(0.00909)
	Age – under 25	0.304*	0.439***		
		(0.169)	(0.160)		
	Age 25-30	0.192	0.202		
		(0.143)	(0.143)		
	Age 35-40	-0.0564	-0.0968		
		(0.110)	(0.111)		
	Age 40-45	-0.0450	-0.0719		
		(0.119)	(0.123)		
	Age 45-50	0.0214	-0.0288		
		(0.117)	(0.117)		
	Age 50-55	-0.210	-0.235*		
		(0.140)	(0.137)		
	Age 55-60	-0.167	-0.180		
		(0.201)	(0.193)		
	Age 60-65	-0.133	-0.162		
		(0.182)	(0.183)		
	Age 65-70	-0.177	-0.258		
		(0.225)	(0.241)		
	Age 70-75	0.0943	-0.0127		

	(0.385)	(0.385)		
Age 75-80	0.0923	-0.115		
	(0.383)	(0.350)		
Age – over 80	-0.186	0.0204		
	(0.640)	(0.550)		
Single	-0.388***	-0.426***	-0.350***	-0.359***
	(0.0799)	(0.0864)	(0.0890)	(0.0891)
Separated	-0.460***	-0.437***	-0.245**	-0.213*
	(0.159)	(0.151)	(0.124)	(0.128)
Divorced	-0.637***	-0.558***	-0.491**	-0.453**
	(0.225)	(0.214)	(0.195)	(0.203)
Widowed	-1.000***	-0.925***	-0.774***	-0.759***
	(0.288)	(0.285)	(0.277)	(0.279)
High School	0.577***	0.291*	0.132	0.123
	(0.183)	(0.165)	(0.163)	(0.159)
Vocational High School	0.400*	0.252	0.0746	0.0647
	(0.228)	(0.226)	(0.236)	(0.230)
Bachelor' Degree	0.706***	0.391**	0.200	0.197
	(0.212)	(0.174)	(0.176)	(0.176)
Masters' Degree	0.744***	0.412***	0.213	0.230
	(0.187)	(0.156)	(0.165)	(0.159)
Phd	0.805***	0.495*	0.320	0.310
	(0.282)	(0.280)	(0.267)	(0.267)
Job status:				
Open-Ended Contract	0.683***	0.655***	-0.206**	-0.172
	(0.122)	(0.122)	(0.105)	(0.105)
Fixed-Term Contract	0.406***	0.433***	-0.266**	-0.241**
	(0.154)	(0.141)	(0.118)	(0.117)
Seasonal Contract	0.622***	0.816***	0.369	0.424
	(0.228)	(0.175)	(0.339)	(0.345)
Independent Contractor/Freelancer	0.552***	0.503***	-0.0835	-0.0638
	(0.105)	(0.110)	(0.104)	(0.104)
Redundancy Fund Benefits	0.393	0.653*	0.420	0.469
	(0.369)	(0.366)	(0.387)	(0.384)
Redundancy Worker	0.0610	0.0903	-0.370	-0.310
	(0.313)	(0.319)	(0.356)	(0.345)
Housewife	1.003***	0.953***	-0.0955	-0.0765
	(0.270)	(0.260)	(0.290)	(0.287)
Student	0.825***	0.680***	0.0721	0.0634
	(0.185)	(0.179)	(0.173)	(0.172)
Retired	0.713***	0.702***	-0.108	-0.0780
	(0.193)	(0.193)	(0.197)	(0.195)
Income class (€/year):				
15.000-30.000	0.445***	0.406***	-0.0477	-0.0462
	(0.0919)	(0.0879)	(0.0905)	(0.0914)
30.000-50.000	0.492***	0.456***	-0.251**	-0.235*
	(0.124)	(0.121)	(0.123)	(0.123)
50.000-100.000	0.904***	0.904***	-0.0646	-0.0501
	(0.178)	(0.180)	(0.182)	(0.182)
>100.000	1.037***	1.075***	-0.266	-0.252
	(0.357)	(0.335)	(0.389)	(0.381)
no answer	0.170	0.195	-0.141	-0.109
	(0.139)	(0.147)	(0.130)	(0.127)
Source of information:				
newspaper/magazines	-0.0867	-0.0751	-0.0767	-0.0280
	(0.176)	(0.181)	(0.155)	(0.157)
online newspapers	-0.250**	-0.234**	-0.198*	-0.140
	(0.100)	(0.0970)	(0.109)	(0.109)
social network/blogs	-0.368***	-0.391***	-0.345***	-0.324***
	(0.109)	(0.118)	(0.127)	(0.124)
institutions/public entities	-0.429	-0.445	-0.185	-0.181
	(0.337)	(0.327)	(0.485)	(0.462)
social network/third sector/associationism and coooperation	-0.321***	-0.165*	-0.193**	-0.153*
	(0.102)	(0.0920)	(0.0908)	(0.0929)
third sector manager training program	0.0278	-0.000240	-0.0182	0.0183
	(0.123)	(0.133)	(0.107)	(0.112)
other	-0.271	-0.266	-0.250	-0.185
	(0.255)	(0.260)	(0.224)	(0.218)
Geographic area (in Italy):				
north-east	0.187	0.147	0.0884	
	(0.123)	(0.123)	(0.102)	
north-west	0.177	0.129	0.167	
	(0.132)	(0.125)	(0.116)	
south and islands	-0.154	-0.114	-0.0682	
	(0.109)	(0.104)	(0.0875)	
Region Dummies	NO	NO	NO	YES
Observations	3,346	3,346	3,346	3,346

Robust standard errors clustered at municipality level in parentheses. Omitted categories: *Age 30-35* (Age); *Married/Cohabitant* (Marital Status); *<15.000€* (Income class), *Not Working/Unemployed/Looking for a Job* (Job status), *Friends* (Source of information), *Center* (Geographic area). *** p<0.01, ** p<0.05, * p<0.1

Table A3 - Tackling endogeneity (sample balanced)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	OLS				**IV**		**OPROBIT**	**TOBIT**	**TOBIT**	**TOBIT**
dep var:	*life_sat*	*ratio_LS*	*life_sat*	*ratio_LS*	*life_sat*	*ratio_LS*	*life_sat*	*driver_ecowell*	*ratio_LS*	*ratio_EW*
driver_ecowell	-0.012***		-0.011***		-0.014***		-0.025***			
	(0.0024)		(0.0026)		(0.0050)		(0.0096)			
income_sat	0.355***		0.355***		0.353***		0.225***	-0.659***		
	(0.0168)		(0.0168)		(0.0163)		(0.0145)	(0.1431)		
ratio_IS		0.265***		0.265***		0.264***			0.233***	-0.337***
		(0.0148)		(0.0148)		(0.0127)			(0.0215)	(0.0418)
ratio_EW		-0.017***		-0.015**		-0.021***			-0.125**	
		(0.0053)		(0.0061)		(0.0072)			(0.0503)	
mean_EW			0.225	0.044				0.690***		-0.011*
			(0.3876)	(0.0660)				(0.1427)		(0.0063)
Sociodemographic characteristics										
italian	0.131	0.025	0.131	0.025	0.119	0.024	-0.045	-5.248*	0.007	-0.159
	(0.1850)	(0.0265)	(0.1850)	(0.0264)	(0.2110)	(0.0304)	(0.1363)	(3.0828)	(0.0308)	(0.1492)
female	-0.146***	-0.021***	-0.146***	-0.021***	-0.143**	-0.021**	-0.081**	1.792***	-0.009	0.130***
	(0.0530)	(0.0074)	(0.0530)	(0.0074)	(0.0595)	(0.0084)	(0.0391)	(0.6310)	(0.0099)	(0.0483)
RightWing	0.030***	0.004***	0.030***	0.004***	0.031***	0.004***	0.026***	0.364***	0.007***	0.027***
	(0.0067)	(0.0009)	(0.0068)	(0.0009)	(0.0064)	(0.0009)	(0.0053)	(0.1074)	(0.0015)	(0.0049)
Age – under 25	0.210	0.026	0.207	0.026	0.221	0.027	0.218**	4.965***	0.051**	0.251***
	(0.1396)	(0.0193)	(0.1398)	(0.0193)	(0.1530)	(0.0216)	(0.1096)	(1.7679)	(0.0256)	(0.0753)
Age 25-30	0.120	0.015	0.120	0.015	0.120	0.015	0.094	0.325	0.018	0.039
	(0.1347)	(0.0192)	(0.1348)	(0.0193)	(0.1221)	(0.0174)	(0.0779)	(0.5995)	(0.0176)	(0.0601)
Age 35-40	-0.009	-0.001	-0.010	-0.001	-0.011	-0.001	-0.007	-1.168	-0.004	-0.061
	(0.0915)	(0.0128)	(0.0914)	(0.0128)	(0.1095)	(0.0154)	(0.0636)	(0.9438)	(0.0138)	(0.0783)
Age 40-45	-0.022	-0.003	-0.021	-0.003	-0.026	-0.004	-0.032	-2.067**	-0.015	-0.149*
	(0.1104)	(0.0156)	(0.1105)	(0.0156)	(0.1117)	(0.0158)	(0.0782)	(0.9375)	(0.0186)	(0.0791)
Age 45-50	0.036	0.003	0.036	0.003	0.032	0.002	0.022	-2.467**	-0.016	-0.223**
	(0.0865)	(0.0121)	(0.0866)	(0.0121)	(0.1142)	(0.0160)	(0.0634)	(0.9655)	(0.0160)	(0.0918)
Age 50-55	-0.174	-0.026*	-0.175	-0.026*	-0.179	-0.026	-0.142*	-2.449***	-0.045**	-0.219***
	(0.1057)	(0.0149)	(0.1056)	(0.0149)	(0.1208)	(0.0170)	(0.0744)	(0.9331)	(0.0181)	(0.0848)
Age 55-60	-0.170	-0.027	-0.171	-0.027	-0.174	-0.027	-0.102	-1.872*	-0.038*	-0.152
	(0.1683)	(0.0234)	(0.1684)	(0.0234)	(0.1343)	(0.0187)	(0.1018)	(1.1326)	(0.0207)	(0.1033)
Age 60-65	-0.246	-0.036*	-0.246	-0.036*	-0.251*	-0.036*	-0.225**	-2.814**	-0.054**	-0.232**
	(0.1503)	(0.0207)	(0.1503)	(0.0207)	(0.1463)	(0.0205)	(0.1047)	(1.2551)	(0.0225)	(0.1136)
Age 65-70	-0.432**	-0.060**	-0.431**	-0.060**	-0.438**	-0.060**	-0.303**	-3.563**	-0.080**	-0.240*
	(0.1997)	(0.0277)	(0.1997)	(0.0277)	(0.1891)	(0.0266)	(0.1443)	(1.8002)	(0.0329)	(0.1337)
Age 70-75	-0.213	-0.024	-0.214	-0.024	-0.226	-0.026	-0.215	-6.522***	-0.068*	-0.487***
	(0.3402)	(0.0474)	(0.3403)	(0.0475)	(0.2456)	(0.0345)	(0.2229)	(2.1707)	(0.0372)	(0.1724)
Age 75-80	-0.022	0.002	-0.025	0.002	-0.031	0.001	-0.204	-5.205*	-0.026	-0.325
	(0.3295)	(0.0500)	(0.3300)	(0.0501)	(0.3004)	(0.0450)	(0.2024)	(2.7070)	(0.0439)	(0.2128)
Age – over 80	0.142	0.023	0.141	0.022	0.133	0.022	0.104	-5.885	0.007	-0.271
	(0.7216)	(0.1029)	(0.7214)	(0.1030)	(0.7227)	(0.1014)	(0.3837)	(5.3917)	(0.0827)	(0.5475)
single	-0.278***	-0.038***	-0.278***	-0.038***	-0.280***	-0.038***	-0.222***	-1.085*	-0.040***	-0.026
	(0.0814)	(0.0113)	(0.0815)	(0.0113)	(0.0742)	(0.0104)	(0.0543)	(0.6379)	(0.0127)	(0.0520)
separated	-0.198	-0.028	-0.198	-0.028	-0.198	-0.028	-0.148*	-0.168	-0.026	0.009
	(0.1282)	(0.0178)	(0.1282)	(0.0178)	(0.1516)	(0.0213)	(0.0826)	(0.9362)	(0.0183)	(0.0823)
divorced	-0.418**	-0.061**	-0.417**	-0.061**	-0.417**	-0.061**	-0.281**	0.170	-0.058**	0.002
	(0.1973)	(0.0268)	(0.1979)	(0.0269)	(0.1727)	(0.0243)	(0.1133)	(1.4747)	(0.0248)	(0.1276)
widowed	-0.915***	-0.134***	-0.914***	-0.134***	-0.913***	-0.133***	-0.533***	1.750	-0.115**	0.242*
	(0.2964)	(0.0431)	(0.2966)	(0.0431)	(0.2972)	(0.0433)	(0.1758)	(1.9751)	(0.0481)	(0.1391)
high school	0.240*	0.039**	0.240*	0.039**	0.226*	0.038**	0.005	-6.156**	0.013	-0.231**
	(0.1286)	(0.0178)	(0.1285)	(0.0178)	(0.1329)	(0.0182)	(0.0982)	(2.6151)	(0.0228)	(0.1175)
vocational high school	0.238	0.035	0.235	0.035	0.234	0.035	0.098	-1.485	0.025	-0.071
	(0.2112)	(0.0295)	(0.2121)	(0.0296)	(0.1947)	(0.0276)	(0.1343)	(1.6482)	(0.0319)	(0.1464)
bachelor' degree	0.355**	0.057***	0.355**	0.056***	0.339**	0.056***	0.062	-6.845**	0.025	-0.279**
	(0.1406)	(0.0202)	(0.1407)	(0.0202)	(0.1476)	(0.0202)	(0.1005)	(2.9900)	(0.0219)	(0.1292)
masters' degree	0.338***	0.053***	0.337***	0.053***	0.321**	0.052***	0.041	-7.369**	0.017	-0.321**
	(0.1204)	(0.0165)	(0.1204)	(0.0166)	(0.1393)	(0.0190)	(0.1093)	(3.0751)	(0.0258)	(0.1353)
phd	0.356	0.055*	0.354	0.055*	0.341	0.054*	0.087	-5.846**	0.025	-0.254*
	(0.2173)	(0.0300)	(0.2176)	(0.0299)	(0.2130)	(0.0294)	(0.1550)	(2.5794)	(0.0377)	(0.1377)
Job status:										
open-ended contract	-0.079	-0.011	-0.080	-0.011	-0.078	-0.010	-0.085	0.680	0.000	0.112
	(0.1048)	(0.0147)	(0.1046)	(0.0147)	(0.1206)	(0.0171)	(0.0642)	(0.7416)	(0.0160)	(0.0769)
fixed-term contract	-0.123	-0.018	-0.123	-0.018	-0.120	-0.018	-0.116*	1.732*	-0.005	0.146**
	(0.1196)	(0.0173)	(0.1197)	(0.0173)	(0.1282)	(0.0182)	(0.0665)	(0.9736)	(0.0173)	(0.0696)
seasonal contract	0.509*	0.062	0.511*	0.063	0.525**	0.063**	0.409***	7.481***	0.093***	0.310**
	(0.2721)	(0.0406)	(0.2737)	(0.0408)	(0.2117)	(0.0305)	(0.1561)	(2.7740)	(0.0310)	(0.1383)
independent contractor/ freelancer	0.053	0.007	0.053	0.007	0.053	0.008	-0.021	-0.006	0.013	0.069
	(0.0913)	(0.0130)	(0.0914)	(0.0130)	(0.1231)	(0.0175)	(0.0587)	(0.8455)	(0.0153)	(0.0806)
redundancy fund benefits	0.469	0.061	0.467	0.061	0.490	0.063	0.386	10.180***	0.108**	0.515**
	(0.3333)	(0.0465)	(0.3330)	(0.0465)	(0.3377)	(0.0483)	(0.2484)	(3.7777)	(0.0533)	(0.2149)
redundancy worker	-0.262	-0.038	-0.263	-0.039	-0.261	-0.038	-0.206	0.213	-0.028	0.080
	(0.3282)	(0.0459)	(0.3283)	(0.0460)	(0.3290)	(0.0467)	(0.1862)	(2.4421)	(0.0460)	(0.2689)
housewife	0.133	0.022	0.132	0.022	0.131	0.023	0.052	-0.881	0.026	0.050
	(0.2412)	(0.0350)	(0.2416)	(0.0350)	(0.2451)	(0.0349)	(0.1634)	(2.7829)	(0.0363)	(0.2130)
student	0.099	0.017	0.099	0.017	0.092	0.017	-0.014	-3.148	0.009	-0.066

	(0.1634)	(0.0231)	(0.1635)	(0.0231)	(0.1568)	(0.0222)	(0.1157)	(2.0232)	(0.0247)	(0.1160)
retired	0.055	0.007	0.055	0.007	0.057	0.008	0.012	1.967*	0.031	0.281**
	(0.1663)	(0.0226)	(0.1663)	(0.0226)	(0.1697)	(0.0239)	(0.1079)	(1.1810)	(0.0234)	(0.1298)
Income class (€/year):										
15.000-30.000	-0.032	-0.005	-0.031	-0.005	-0.032	-0.005	-0.049	-0.218	-0.005	0.013
	(0.0796)	(0.0110)	(0.0797)	(0.0110)	(0.0805)	(0.0114)	(0.0494)	(0.5012)	(0.0103)	(0.0519)
30.000-50.000	-0.164	-0.022	-0.163	-0.021	-0.165	-0.022	-0.140**	-0.043	-0.018	0.047
	(0.1082)	(0.0149)	(0.1081)	(0.0150)	(0.1005)	(0.0141)	(0.0712)	(0.6015)	(0.0150)	(0.0630)
50.000-100.000	-0.083	-0.007	-0.085	-0.007	-0.080	-0.006	-0.027	1.847**	0.008	0.181**
	(0.1604)	(0.0216)	(0.1600)	(0.0215)	(0.1343)	(0.0186)	(0.1154)	(0.8068)	(0.0245)	(0.0752)
>100.000	-0.206	-0.018	-0.205	-0.018	-0.201	-0.017	-0.108	2.503*	0.005	0.210
	(0.3226)	(0.0435)	(0.3226)	(0.0436)	(0.2669)	(0.0362)	(0.2255)	(1.4990)	(0.0437)	(0.1440)
no answer	-0.057	-0.008	-0.057	-0.007	-0.055	-0.007	-0.032	1.392*	0.003	0.122*
	(0.1093)	(0.0154)	(0.1093)	(0.0154)	(0.1219)	(0.0173)	(0.0765)	(0.8024)	(0.0182)	(0.0643)
Source of information:										
Newspapers/	-0.120	-0.018	-0.120	-0.018	-0.123	-0.019	-0.036	-0.946	-0.031	-0.117
magazines	(0.1222)	(0.0171)	(0.1223)	(0.0171)	(0.1252)	(0.0174)	(0.0847)	(0.8065)	(0.0196)	(0.0763)
	-0.185*	-0.025*	-0.185*	-0.025*	-0.188*	-0.025*	-0.108*	-0.695	-0.033**	-0.064
Online newspapers	(0.0988)	(0.0139)	(0.0988)	(0.0139)	(0.0981)	(0.0138)	(0.0612)	(0.6418)	(0.0149)	(0.0498)
	-0.301***	-0.041***	-0.301***	-0.041***	-0.304***	-0.042***	-0.208***	-0.634	-0.048***	-0.022
Social networks/blogs	(0.0914)	(0.0129)	(0.0914)	(0.0129)	(0.1033)	(0.0146)	(0.0582)	(0.7147)	(0.0121)	(0.0588)
	-0.073	-0.010	-0.074	-0.010	-0.079	-0.011	-0.089	-2.632*	-0.040	-0.278**
Institutions/public entities	(0.3406)	(0.0486)	(0.3411)	(0.0486)	(0.2944)	(0.0415)	(0.2239)	(1.5186)	(0.0527)	(0.1415)
Social network/	-0.127	-0.022**	-0.129	-0.022**	-0.119	-0.022	-0.025	4.415**	-0.010	0.141*
Associationism (…)	(0.0793)	(0.0112)	(0.0794)	(0.0112)	(0.0987)	(0.0138)	(0.0743)	(1.9464)	(0.0158)	(0.0832)
	0.033	0.006	0.033	0.006	0.033	0.006	0.000	0.230	0.010	0.060
Third sector manager (…)	(0.1068)	(0.0158)	(0.1069)	(0.0158)	(0.1042)	(0.0150)	(0.0708)	(0.6623)	(0.0178)	(0.0643)
Other	-0.259	-0.038	-0.263	-0.039	-0.265	-0.039	-0.210*	-3.979**	-0.073**	-0.419***
	(0.1745)	(0.0238)	(0.1746)	(0.0237)	(0.1901)	(0.0267)	(0.1234)	(1.7587)	(0.0329)	(0.1570)
Geographic area (in Italy):										
north-east								-0.366		-0.024
								(0.5468)		(0.0494)
north-west								-0.581		-0.034
								(0.4313)		(0.0368)
south and islands								-1.492***		-0.068*
								(0.5350)		(0.0360)
regional dummies	YES	YES	YES	YES			YES	NO	YES	NO
Observations	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346	3,346
Adjusted R-squared	0.255	0.228	0.254	0.228	0.255	0.228				
Excluded instruments					mean_EW	mean_EW				
Instrumented					driver_ecowel	ratio_EW				
Weak id. test, F					26.54	42.46				
Standard errors	clustered by municipality (n. 108)				robust		clustered by municipality (n. 108)			

Robust standard errors clustered at municipality level in parentheses. Omitted categories: *Age 30-35* (Age); *Married/Cohabitant* (Marital Status); *<15.000€* (Income class), *Not Working/Unemployed/Looking for a Job* (Job status), *Friends* (Source of information), *Center* (Geographic area). *** p<0.01, ** p<0.05, * p<0.1