Assessing the non-economic outcomes of social entrepreneurship in Luxembourg

Francesco Sarracino*and Andréa Gosset†

June 5, 2015

Abstract

We provide a first assessment of the ability of social enterprises to meet their non economic goals. The study takes advantage of unique data on social enterprises and well-being available for Luxembourg. Results suggest that social enterprises contribute to well-being and alleviate the bad-being of most vulnerable people. Such evidence supports policies in favour of social enterprises to promote social integration among socially vulnerable people.

1 Introduction

Policy-makers, scholars and operators tend to agree that social economy is a key to build sustainable and inclusive growth, i.e an innovation-based growth compatible with social cohesion and job creation (Rosenblatt, 2013). There are various reasons for this; for example, it is frequently held that organizations belonging to the social economy – henceforth labelled social enterprises independently from their legal status – are better fit to address social or environmental issues than public institutions (Borzaga et al., 2010; Becchetti and Borzaga, 2012). The Social Economy Intergroup of the European Parliament on the theme "Social economy actors' responses to facing the economic crisis" emphasizes that social enterprises are better endowed to face the economic crisis than many private companies. Moreover, many observers recognize that social enterprises pursue long-term action plans, and they are less likely to relocate abroad even if they develop on an international scale (Toia report, 2013). On one side these reasons

*Institut national de la statistique et des études économiques du Grand-Duché du Luxembourg (STATEC); Agence pour la Normalisation et l'Economie de la Connaissance (ANEC), Luxembourg; Laboratory for Comparative Social Research (LCSR), National Research University Higher School of Economics (Russia)

†Agence régionale de santé Provence - Alpes Côte d'Azur (France).

allowed a renewed interest in social entrepreneurship, on the other they also increased the number of those who believe that public institutions should limit themselves to identify and finance the organizations that better deal with social or environmental priorities.

Despite the increasing recognition and promotion of social economy, empirical studies evaluating its non economic outcomes are scarce. As the main target of social enterprises is to address social issues rather than maximizing profits, it is relevant to study whether they meet their objectives by looking at their non-economic outcomes such as well-being, an encompassing measure of people's satisfaction with their own life. The aim of this work is to assess the ability of social enterprises to improve people's well-being. The availability of information on people's life satisfaction along with register data from the Statistical Office of Luxembourg, allows to test the hypothesis that social economy contributes to people's well-being in Luxembourg.

Luxembourg is the first European country to have established a Ministry of the solidarity economy in 2009 and to implement a program to support this sector. According to the Luxembourgian government, social economy is an innovative sector offering new solutions for a more sustainable economy. Therefore, in 2011, the Government implemented the first Action Plan for Solidarity Economy (PLES) to promote and develop social enterprises. In the same year, Business Initiative – a foundation supporting business initiatives in Luxembourg – launched a new support system for business projects with a social or solidarity aim in Luxembourg (the program is called 1,2,3 GO Social). The proliferation of social and solidarity initiatives made possible, in 2013, the establishment of the Luxembourg Union of the Social and Solidarity Economy (ULESS) whose goal is to represent, inform, educate and promote the principles and values of social economy in Luxembourg.

The main obstacle to the identification of social enterprises is the lack of a shared consensus about how to define the domain of social economy and its components: various countries and international institutions have adopted different solutions (Defourny and Nyssens, 2008, 2010). Yet, there is some agreement on some of the features characterizing social enterprises (European Standing Conference of Co-operatives, Mutual Societies, Associations and Foundations, 2002):

- the objective of the social enterprise is to serve its members or the community;
- the social enterprise is autonomous;
- in its statute and code of conduct, the social enterprise establishes a democratic decision-making process that implies the participation of users and workers;
- the social enterprise focuses on people and work over capital in the distribution of revenue and surplus;

- its activities are based on principles of participation, empowerment, and individual and collective responsibility.

Social enterprises are meant to deliver goods or services; however, compared to traditional firms, they pursue social profitability, rather than profits in the purely economic sense (Sullivan Mort et al., 2003). Social profitability mean, for example, contribution to democratic development, to the development of an active and empowered citizenship, or to projects promoting employability of people in difficulty, such as people with handicap, jailed people or unemployed ones.

Organizations belonging to social economy come typically in four main legal forms: cooperatives, mutual societies, foundations and associations (European Commission, 2013). A cooperative is collectively, voluntarily and democratically run by its members who gather to serve common social and economic goals. A mutual society pursues solidarity and mutual assistance providing services to its members. A foundation is a group of private donations meant to purse charitable purposes. An association is a group of volunteers that act in solidarity to address a common non-profit interest. In some cases social enterprises are also identified as third sector, in alternative to the public and private sectors.

The paper is organised as follows. In the next section, we review previous literature about the non economic outcomes of social economy, and specify our contribution to such literature. In section 3 we describe the data available for present analysis, whereas we detail our method in section 4. Section 5 shows the results of our analysis, while section 6 summarizes our empirical findings, emphasizes its limitations and draws some policy implications.

2 Literature review

Despite the increasing recognition and promotion of social enterprises, empirical studies about their non-economic impact are scarce. As the main target of social enterprises is to address social issues before maximizing profits, it is relevant to assess whether they deliver the expected social outcomes in terms of higher well-being of local communities, better health, higher job satisfaction and job creation, and social cohesion.

The appeal of social economy is linked to the belief that its new forms of economic organization are socially desirable: since traditional economy is not sufficient to assure employment, growth and well-being, it is necessary to complement it with new ways to organize economic activity to satisfy collective needs (Laville, 2010). Policy actors around the world look with increasing attention at social enterprises as a mean to support societies and deliver welfare services (Amin, 2009). At least in the Western world, social enterprises are recognized as important for addressing social and economic exclusion, and providing necessary services to disadvantaged people such as trainings

and jobs, as well as delivering services to marginalised groups (Cameron, 2010). Tortia (2010) argues that the features of not-for-profit organizations are such to promote productive efficiency, and employment, while reducing poverty and marginality, ultimately increasing aggregated well-being. Nonetheless, there is no quantitative assessment of the contribution of the social economy to the well-being of the people it serves. Previous studies have tried to identify and quantify the contribution to some social and economic outcomes, but the conclusions remain largely anecdotal because of the scarcity of data.

Laville and Nyssens (2001) emphasize that the declared goal of social enterprises is to serve the community, i.e. addressing equity issues and promoting community goods such as social cohesion, public health or local development. For example, the main aim of a social enterprise helping unemployed people is not to accumulate or distribute profits. Rather, the motivation is to fight long-term unemployment and to promote social integration and well-being (Laville and Nyssens, 2001). Furthermore, the rhetoric accompanying social economy emphasizes the ethic of care animating social entrepreneurs, an ethic that seems to be secondary or insufficient in the private and public sectors (Amin, 2009).

The assessment at aggregate level of the success of social enterprises in pursuing their general-interest missions is limited by data available in national and international accounting systems that focus mainly on the role of the for-profit and public sectors (Fazzi, 2010). Here general-interest mission is intended to cover a wide range of activities that are expected to ultimately benefit the well-being and quality of life of a given community (Blakemore, 2003). Even though findings vary greatly according to the definition of social enterprise adopted and the regions considered, available evidence points to a positive contribution of social economy to the procurement of socially valuable, general-interest services (Fazzi, 2010; Bouchard et al., 2006).

In a recent paper Pèrotin (2013) focused on the spill-over effects of the performance of worker cooperatives for the communities in which the firms operate. Since worker cooperatives provide institutions in which employees control most aspects of their job and firm strategy (including pay and employment trade-offs), the author postulates that such organizations internalise a number of externalities typical of the conventional operation of firms with positive spillovers on the job satisfaction, health and well-being of their employees. For example, worker cooperatives provide good, stable jobs in which employees' potential and creativity can flourish, they promote economic democracy, they offer sustainable and local employment and, therefore, they are expected to have a number of positive spillovers on their communities' economies, public finances and health (Pèrotin, 2013).

In a study on Côte d'Ivoire and Ghana, Calkins and Ngo (2010) perform a quantitative and qualitative analysis to test seven hypotheses about the possible benefits of cooperatives. Results showed that cooperatives have a positive impact on the income, health, and well-being of producers, and these benefits also spread to the surrounding community. In a similar vein, Fulton and Ketilson (1992) study the contribution of

cooperatives to the economic and social development of local communities in Canada. The authors find that cooperatives play an important economic role. However, the evidence of the contribution to the subjective well-being of residents and to social cohesion remains anecdotal.

At a micro level, Savio and Righetti (1993) analyse the history and development of an integrated cooperative established in 1981 in Northern Italy. Results show that cooperative members come from different marginalized areas of social and health distress, of which the two largest ones are social service users and psychiatric service users. The authors find a noticeable turn-over rate, which underlines the transitional function of the cooperative as a working context in which users can gain access to other more rewarding job opportunities in the labour market. However, the authors take the social outcomes in terms of benefit for the local communities or for the users as granted.

We contribute to this literature looking at the non economic impact of social economy in Luxembourg using subjective well-being as a proxy of people's quality of life. Thirty years of research in social sciences demonstrated that subjective well-being can be considered a valid and reliable indicator to observe people' perceptions about their quality of life (Diener et al., 2012; Kahneman and Krueger, 2006). By providing an individual based assessment, subjective well-being offers an encompassing measure of quality of life to complement more traditional income-based measures (Fitoussi and Stiglitz, 2011; Layard, 2009). At the same time, such approach provides a direct way to assess the impact of social enterprises on the quality of life of the local community.

Subjective well-being is an individual-founded measurement of people's quality of life (OECD, 2013). The measurement and analysis of people's well-being has a long-standing tradition grounded in social psychology. This literature developed in the '70s and boomed after 2000 when subjective well-being entered the vocabulary and the research agendas of other social sciences, including economics (Bruni and Porta, 2007). Subjective well-being, sometimes also referred to as "happiness" or "life satisfaction", is usually observed through answers to survey questions such as: "Taking all things together, how happy would you say you are?" or "All things considered, how satisfied are you with your life as a whole these days?" (van Praag et al., 2003). These measures are relatively easy to collect, they are widely available and they proved to be reliable sources of information about individual's well-being. Their reliability has been confirmed in many studies from various disciplines: subjective well-being correlates with objective measures of well-being such as the heart rate, blood pressure, frequency of Duchenne smiles and neurological tests of brain activity (Blanchflower and Oswald, 2004; van Reekum et al., 2007); measures of subjective well-being are strongly correlated with other proxies of subjective well-being (Schwarz and Strack, 1999; Wanous and Hudy, 2001; Schimmack et al., 2010) and with the judgements about the respondent's happiness provided by friends, relatives or clinical experts (Schneider and Schimmack, 2009; Kahneman and Krueger, 2006; Layard, 2005).

Hence, in the last decades, subjective well-being has been employed in various do-

mains: in economics to analyze the impact of issues such as poverty, inequality, unemployment and inflation on people's welfare (Di Tella and MacCulloch, 2008; Alesina et al., 2004; Diener et al., 2009; Clark et al., 2012, 2013); in sociology and politics to study aging, gender issues, marital and employment status, as well as the quality of political institutions (Frey and Stutzer, 2000; Powdthavee, 2007; Stutzer and Frey, 2012). In present work we use subjective well-being as a proxy of people's quality of life to test the non-economic outcome of social enterprises in Luxembourg.

We expect that the higher is the share of social enterprises by city, the higher is people's well-being. We use the share of social enterprises by city in 2011, the last year when information on social enterprises is available, to estimate people's well-being in 2013, when data on life satisfaction were collected. To check the robustness of our findings, we repeat the same test using an alternative proxy of well-being and the share of social enterprises measured in each year from 2003 to 2011.

3 Data

As a proxy of the incidence of social enterprises in Luxembourg, we use the share of social enterprises on the total number of enterprises registered by city. Data are available from the Business Register of Luxembourg for the years 2003 – 2011. Despite the general agreement on the fact that an organization belongs to the social economy if it respects principles such as giving priority to individuals over capital, freedom of participation or democratic governance, identifying the entities that effectively fulfill such principles is difficult. The main obstacle is the lack of a shared consensus about how to define the domain of social economy: various countries and international institutions have adopted different solutions.

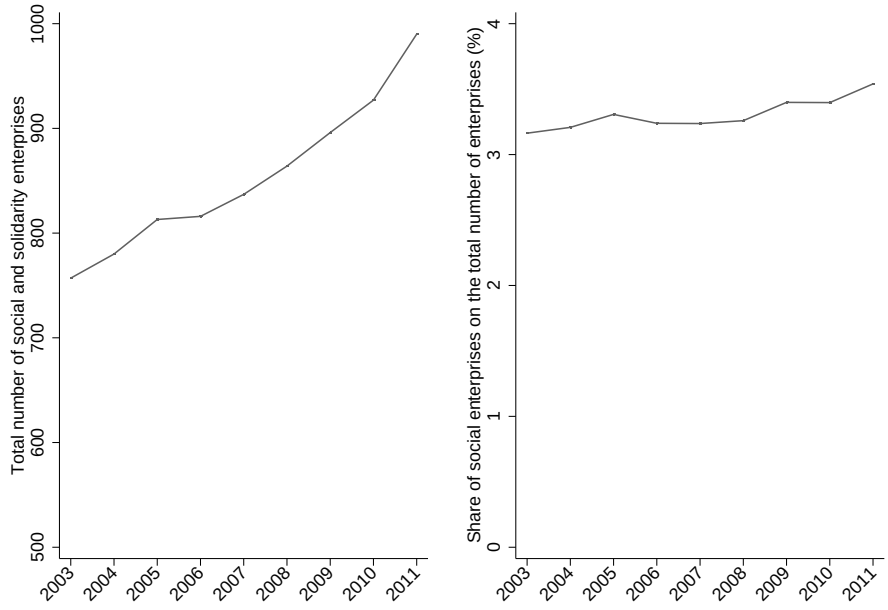
In present work, we identify social enterprises combining two methods. The first one identifies social enterprises with all the activities belonging to the Social Action section of the NACE (Statistical Classification of Economic Activities in the European Community) after excluding elderly houses and childcare centres (Allegrezza and Molling, 2005). The second method is based on the definition adopted by the INSEE, the French statistical office, and adjusted for Luxembourg (Peiffer and Hiltgen, 2010). According to this method, an entity is a social enterprise depending on its legal form.[1] The two methods have three legal forms in common: cooperative, non-profit organization and charitable organization. As proposed by Rückert and Sarracino (2014), here we consider social enterprises all the entities belonging to the union of the two sets identified with the above mentioned methods, including also elderly houses and childcare centres.[2]

Figure 1 shows the evolution of the total number of social enterprises and of the

[1]Possible legal forms are: cooperative, non-profit organization, charitable organization, fraternal benefit organization, mutual insurance association, cultural association and sports association.

[2]Possible overlapping social enterprises are considered only once.

Figure 1: Social enterprises in Luxembourg over time



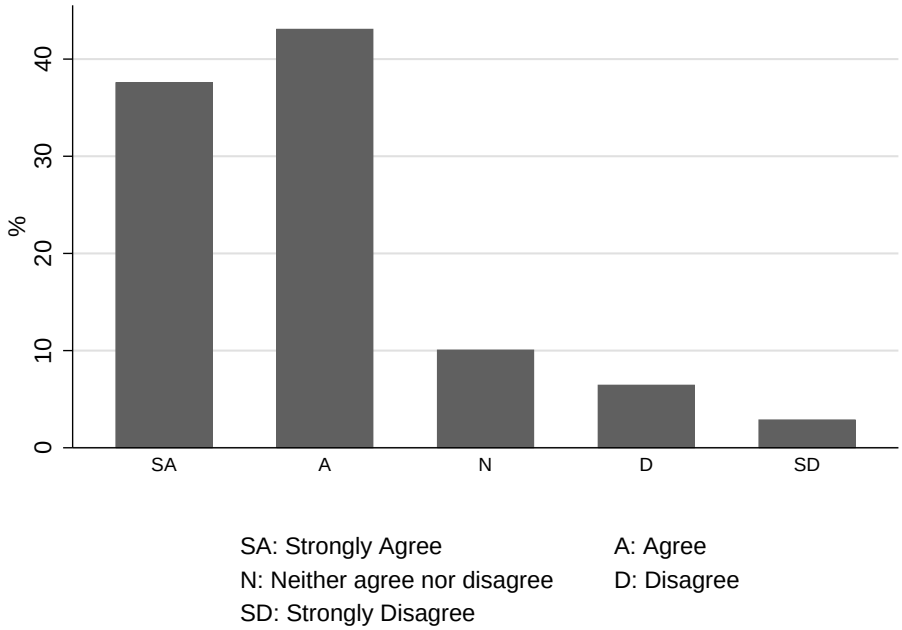
share of social enterprises on the total number of enterprises. Between 2003 and 2011 the number of social enterprises increased by 3.8% each year. The absolute number of social enterprises raised from 757 in 2003 to 990 in 2011. Yet, compared to other companies the share of social enterprises stayed nearly constant over time: the share of social enterprises on total enterprises registered in Luxembourg was 3.16% in 2003 and 3.54% in 2011.

Figures on subjective well-being derive from the Global Entrepreneurship Monitor survey (GEM) realized in 2013 on 2005 individuals in Luxembourg. The GEM aims to gather nationally representative information about entrepreneurial attitudes and behaviours. During the interviews respondents were asked, among other questions, to assess their own well-being and to provide various socio-demographic and economic information. Data on well-being are collected by asking: "What is your agreement with the statement 'I am satisfied of my life'?" The possible answers range from 1 to 5 where 1 denotes "strongly disagree", 2 "disagree", 3 "neither agree nor disagree", 4 "agree" and 5 "strongly agree".

Figure 2 illustrates the distribution of well-being in the sample. Respondents look quite satisfied: 43.1% of them are satisfied with their life and 37.6% are strongly satisfied with their life, whereas 6.4% and 2.9% of the respondents declare to be dissatisfied and strongly dissatisfied with their lives.

Figure 3 shows the average life satisfaction and the share of social enterprises by

Figure 2: Distribution of life satisfaction among respondents

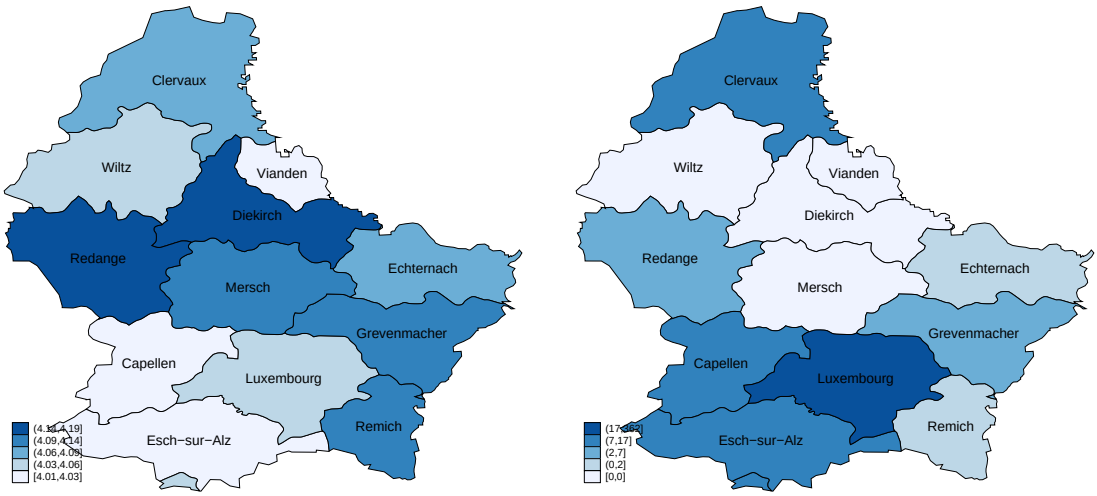


cantons. Less satisfied people are more concentrated in the south-east cantons of Luxembourg, namely, Esch-sur-Alzette, Capellen and Luxembourg. These are also the most populated cantons. The share of social enterprises in 2011 is higher in the cantons of Clervaux, Redange, and Esch-sur-Alzette.

To account for individual heterogeneity, we include a set of individual level control variables. Previous studies identified a set of control variables that are usually considered as standard predictors of well-being (Dolan et al., 2008; Powdthavee, 2010; Fleche et al., 2011). Such variables are drawn from the GEM survey and include age and age squared, gender, size of household, immigration background, education, occupation and income.

We include age squared to account for the U-shaped relationship between well-being and age that is usually identified in the literature. Household size is a quantitative variable reporting the number of people living in the house. The variable about immigration is a dummy taking value one if the respondent was born abroad, and zero if the respondent was born in Luxembourg. Education is recoded in six dummy variables: "lower secondary" (the reference category), "secondary", "short-cycle tertiary", "bachelor", "master", and "doctoral". Occupation is recoded in the following categories: "full-time worker" (the reference category), "part-time worker", "self-employed", "jobseeker", "retired", "student", "home-maker", and "other". Income is measured via a set of dummy variables for each of the following ranges: "0 to 20,000 €" (the reference category),

Figure 3: Distribution of well-being (on the left) and of the share of social enterprises (on the right) by cantons.



(a) Average well-being

(b) Number of social enterprises

"20,001 to 40,000 €", "40,001 to 60,000 €", "60,001 to 80,000 €", "80,001 to 100,000 €", and "More than 100,000 €". Finally, we included two city level control variables to account for possible differences among cities. Such variables are available for 2013 from STATEC and include total number of employed people by city and urbanization density, i.e. the number of inhabitants per square kilometre by city. Table 1 summarizes the distribution of life satisfaction by socio-economic, individual characteristics.

4 Methodology

We proceed in three steps. We first estimate the probability of being satisfied with life in Luxembourg, i.e. we check whether the findings from Luxembourg are consistent with the results from previous studies on well-being. In the second step we address our hypothesis including the share of social enterprises among the regressors of the life satisfaction equation estimated in the first step. We expect that the share of social enterprises positively and significantly contributes to people's well-being. Finally, we check the robustness of our findings using an alternative proxy of well-being, i.e. people's opinion about their life conditions.

We adopt two estimating approaches: we first use an ordered logit model with canton dummy variables to account for possible canton level unobserved heterogeneity. In the second approach we check the robustness of our estimates using an ordered multilevel logit model with random intercepts to model the well-being of individuals nested within cities and cantons. Such method accounts for unobserved differences among cities and

Table 1: Distribution of well-being by socio-economic characteristics.

Variables	Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree	Total
Age						
18-24 years	2.4%	3.3%	11.7%	36.3%	46.2%	100.0%
25-34 years	3.4%	6.9%	12.6%	40.4%	36.7%	100.0%
35-44 years	2.3%	6.8%	10.4%	49.5%	31.1%	100.0%
45-54 years	3.3%	7.4%	8.5%	43.3%	37.4%	100.0%
55-64 years	2.7%	6.4%	7.1%	42.3%	41.6%	100.0%
Gender						
Male	2.8%	6.1%	10.9%	43.9%	36.3%	100.0%
Female	3.0%	6.8%	9.2%	42.2%	38.9%	100.0%
Immigrant						
Born abroad	2.4%	6.1%	8.2%	42.7%	40.7%	100.0%
Born in Lux.	4.0%	7.2%	14.2%	43.9%	30.8%	100.0%
Education						
Lower Secondary	3.9%	6.5%	10.6%	37.5%	41.5%	100.0%
Secondary	2.3%	6.2%	10.6%	43.9%	37.0%	100.0%
Short-cycle tertiary	2.5%	9.5%	10.0%	44.8%	33.2%	100.0%
Bachelor	4.5%	4.6%	11.2%	43.3%	36.3%	100.0%
Master	1.3%	6.0%	8.5%	45.7%	38.5%	100.0%
Doctoral	0.0%	5.9%	6.4%	45.5%	42.2%	100.0%
Occupation						
Full time	2.4%	6.5%	9.7%	44.3%	37.1%	100.0%
Part-time	1.2%	6.5%	8.6%	45.2%	38.6%	100.0%
Self-employed	0.0%	1.5%	16.5%	48.7%	33.4%	100.0%
Jobseeker	9.9%	18.1%	16.6%	30.4%	25.0%	100.0%
Retired or disabled	1.3%	5.4%	7.3%	39.9%	46.1%	100.0%
Student	1.3%	2.2%	9.7%	39.3%	47.6%	100.0%
Home-maker	3.6%	6.7%	12.8%	35.6%	41.3%	100.0%
Other	4.6%	6.7%	4.6%	48.5%	35.5%	100.0%
Income						
0 to 20,000 €	8.0%	19.3%	19.0%	31.5%	22.1%	100.0%
20,001 to 40,000 €	6.0%	6.2%	15.0%	46.0%	26.8%	100.0%
40,001 to 60,000 €	2.7%	7.4%	9.2%	47.0%	33.8%	100.0%
60,001 to 80,000 €	2.7%	5.5%	11.4%	42.2%	38.3%	100.0%
80,001 to 100,000 €	3.9%	7.4%	8.4%	35.5%	44.8%	100.0%
More than 100,000 €	1.0%	2.4%	4.6%	45.2%	46.7%	100.0%
Total	2.9%	6.4%	10.1%	43.1%	37.6%	100.0%

cantons allowing the intercepts to vary. It is relevant to control for territorial effects because the number of social enterprises as well as well-being vary by city and across cantons (see fig. 3). Furthermore, even if the inclusion of explanatory variables at city level such as total employment or urbanisation density allows to account for territorial differences, other unobservable regional variables may also affect our estimates. The methods we adopt provide coefficients robust to the omission of such variables.

4.1 Happiness equation

4.1.1 Ordered logit model

To explore the relationship between life satisfaction and the share of social enterprises we adopt an ordered logit model with robust standard errors including all the controls listed in section 3. Hence, if life satisfaction is ordered in 5 categories, then the resulting model is:

$$SWB_i = \begin{cases} 1 & \text{if } \; y_i \leq 0, \\ 2 & \text{if } \; 0 \; < y_i \leq c_1, \\ 3 & \text{if } \; c_1 < y_i \leq c_2, \\ \vdots & \\ 5 & \text{if } \; c_4 < y_i. \end{cases} \tag{1}$$

where y_i is the declared level of life satisfaction, c_i are unknown parameters to be estimated; $1 < c_1 < c_2 < \ldots < c_4$; the index i stands for individuals; and SWB_i has the following form:

$$SWB_i = \alpha + \boldsymbol{\theta} \cdot \mathbf{X_i} + \boldsymbol{\gamma} \cdot \mathbf{X_c} + \varepsilon_i, \varepsilon_i \sim Logistic(0, 1) \tag{2}$$

where the index c stands for cities. The list of control variables (X_i) includes individual's age (both in linear and squared form), gender, marital status, household size, education, migratory background, work status, and income. The list of controls (X_c) includes the total number of employed people by city and the number of inhabitants per squared kilometer by city and canton dummy variables (Hayo, 2007). Errors ε_i are assumed to follow a logistic distribution with mean equal to zero and standard deviation equal to one.

4.1.2 Multilevel model

In alternative to the ordered logit model, we adopt a multilevel model to account for the fact that people's well-being depends on a set of individual, city-level and canton-level characteristics. The advantage of multilevel over ordered logit is to correctly model hierarchical data that do not satisfy the basic assumption of independence of

observations, such as the case for respondents nested within cities and cantons. Failing to account for this issue can result in downward biased standard errors and this may lead to wrong conclusions (Raudenbush and Bryk, 2002; Luke, 2004).

We estimate a model where individuals i are nested within cities c and cantons r. The limited number of cantons (R = 12) is not an obstacle for estimating the effect at canton level because what matters is to have a sufficient total sample size at city-canton level (Snijders, 2005). In present case the total sample size is N = 1272 (12 cantons x 106 cities). The three-level design allows distinguishing between the city-specific levels of macro-variables and the city-canton-specific values which refer to the changes taking place over cantons.

The model is as follows:

$$\text{SWB}_{icr} = \alpha_{0cr} + \mathbf{\Theta}\mathbf{X}_{icr} + \varepsilon_{icr} \tag{3}$$

$$\alpha_{0cr} = \gamma_{00c} + \tau_{cr} \tag{4}$$

$$\gamma_{00c} = \gamma_{000} + \nu_c \tag{5}$$

where we include a canton level (r) random intercept (α_{0cr}) which allows to control for random city (ν_c) and canton (τ_{cr}) effect; $\mathbf{X}_{icr}$ is the vector of individual and city level control variables, $\mathbf{\Theta}$ is the vector of respective coefficients and ε_{icr} is a vector of error terms.

4.2 Assessing the non economic outcome of social enterprises

The inclusion of the share of social enterprises by city in the happiness equation illustrated above allows us to test whether social enterprises provide any non-economic outcome. In our baseline model we regress life satisfaction in 2013 over the share of social enterprises in 2011 along with the same control variables listed after eq. 2. Moreover, to test the sensitiveness of our results to the choice of the year, we replicate our estimates using all the available data on the share of social enterprises in Luxembourg, i.e. from 2003 to 2011. This results in 9 equations in which we extend eq. 2 to include the share of social enterprises (SE_c) for each year:

$$SWB_i = \alpha + \pi \cdot SE_{c_{2003}} + \boldsymbol{\theta} \cdot \mathbf{X_i} + \boldsymbol{\gamma} \cdot \mathbf{X_c} + \varepsilon_i$$

$$SWB_i = \alpha + \pi \cdot SE_{c_{2004}} + \boldsymbol{\theta} \cdot \mathbf{X_i} + \boldsymbol{\gamma} \cdot \mathbf{X_c} + \varepsilon_i$$

$$\vdots$$

$$SWB_i = \alpha + \pi \cdot SE_{c_{2011}} + \boldsymbol{\theta} \cdot \mathbf{X_i} + \boldsymbol{\gamma} \cdot \mathbf{X_c} + \varepsilon_i$$

The coefficient of the share of social enterprises π informs about the sign of the correlation with well-being and its statistical significance. Moreover, the coefficients relative to earlier years allow to test whether the correlation of social enterprises with well-being is durable over time.

4.3 Robustness check using a different proxy of well-being

We repeat our analysis using an alternative proxy of well-being. Life satisfaction is probably the most widely adopted proxy of subjective well-being. However, there are also alternative ways to collect subjective measures of well-being. For instance, GEM provides also the answers to another question mirroring people's perceptions about their own life. People are asked to declare their agreement with the statement "The conditions of my life are excellent". The answers are ordered from 1 to 5 where 1 stands for "strongly disagree" and 5 "strongly agree". Such measure has been developed in earlier psychological studies and it is part of the Satisfaction With Life Scale (SWLS) developed by Diener et al. (1985). The use of such proxy of well-being does not alter the methodology we illustrated above.

5 Results

We first illustrate the results about the happiness equation in Luxembourg (see eq. 2); then we introduce the share of social enterprises and test its correlation with life satisfaction with an emphasis on the effects for specific categories of individuals (see section 4.2); finally, we show that our results are robust to the use of a different measure of subjective well-being.

5.1 Well-being in Luxembourg

The first column of tab. 2 shows the results of regressing life satisfaction over the set of individual socio-economic and demographic characteristics. The coefficients of age and age squared are significant and their signs document a U-shaped relationship between age and well-being. The coefficients of immigration and income are highly significant. People that are not born in Luxembourg are less satisfied than natives, while the positive coefficients of income suggest that richer people are happier. None of the dummies on educational attainment is significantly different from the baseline level, i.e. people with primary education. For what concerns the occupational status, having a part-time job positively but weakly correlates with life satisfaction, while unemployment has a negative, but not significant coefficient compared to the reference category, i.e. people with full time jobs.

In the second column we add the city level controls: total employment and urbanization density. Employment has a significant positive impact on well-being, while

urbanization density has a very small, but negative coefficient. The inclusion of such controls does not alter the other coefficients except that it makes retirement turn weakly significant. The third column presents the results after introducing canton dummy variables. All the coefficients remain stable; only gender turns weakly significant.

Column four of tab. 2 report the estimates of the multilevel models with random intercepts in which individuals are nested within cities and cantons, respectively. Also in such cases coefficients do not remarkably change, except that part-time turns non significant (compare columns 2, 3, and 4). Furthermore, the variances of the random effects are equal to zero suggesting that there are no random unobserved factors varying across city level (or canton level) that could impact people's well-being. The Akaike Information Criterion (AIC) criterion confirm the absence of random territorial effects, and favour the model including canton dummy variables (column 3). Marginal effects, i.e. the change in the predicted probability of an event for a unit change in the independent variables, of the latter model are reported in tab. 5 in Appendix A.

5.2 The non economic outcome of social entrepreneurship

The ordered logit model with canton dummy variables and the multilevel model present very similar results when including the share of social enterprises in equations 2 and 3. However, despite the small differences, the AIC criterion suggests that the model with canton dummies is preferable.

Table 3 presents the results when including the share of social enterprises in the ordered logit model with canton dummy variables. Estimates have been repeated using the share of social enterprises for each year from 2003 to 2011. The coefficients of the share of social enterprises have a strong positive correlation with well-being in the years from 2007 to 2010. For all other years, the share of social enterprises is not significantly different from zero. These results support the hypothesis that social enterprises have positive spill-overs on the society they serve and they contribute to increasing people's well-being. Results also show that the activities of social enterprises have a lasting impact on well-being: the share of social enterprises in 2007 correlates significantly with well-being in 2013. Multilevel models provide a consistent picture, although only relative to year 2007 and 2010. The share of social enterprises in 2008, 2009 and 2011 is still positively, but not significantly correlated with well-being in 2013, while for the year 2003 - 2006 the multilevel models did not converge (for more details, see Appendix A.

Figure 4 shows how the predicted probabilities of being very satisfied (on the left) and very dissatisfied (on the right) with life change as the logarithm of the share of social enterprises in 2010 increases. The probabilities are computed for people with various occupational statuses. The two charts document that the higher is the share of social enterprises, the higher are the predicted probabilities to be very satisfied with life, while lower are the predicted probabilities to be very dissatisfied with own life.

Table 2: Correlates of life satisfaction in Luxembourg.

	Ordered logit		Ordered logit		Ordered logit fixed canton effect		Multilevel random three levels	
Age	-0.071**	(0.013)	-0.069**	(0.014)	-0.072**	(0.013)	-0.070**	(0.011)
Age squared / 100	0.076**	(0.023)	0.073**	(0.027)	0.077**	(0.026)	0.074**	(0.022)
Women	0.113	(0.268)	0.130	(0.170)	0.136	(0.136)	0.125	(0.149)
Household size	0.013	(0.672)	0.015	(0.587)	0.014	(0.618)	0.014	(0.603)
Immigrant	-0.436***	(0.000)	-0.429***	(0.000)	-0.425***	(0.000)	-0.405***	(0.000)
20,001 to 40,000€	0.568***	(0.001)	0.604***	(0.002)	0.575***	(0.007)	0.680***	(0.000)
40,001 to 60,000€	0.967***	(0.000)	1.005***	(0.000)	0.989***	(0.000)	1.045***	(0.000)
60,001 to 80,000€	1.122***	(0.000)	1.153***	(0.000)	1.124***	(0.000)	1.196***	(0.000)
80,001 to 100,000€	1.377***	(0.000)	1.407***	(0.000)	1.378***	(0.000)	1.399***	(0.000)
More than 100,000€	1.611***	(0.000)	1.640***	(0.000)	1.633***	(0.000)	1.692***	(0.000)
Secondary	-0.303	(0.290)	-0.338	(0.233)	-0.345	(0.237)	-0.371	(0.158)
Short-cycle tertiary	-0.421	(0.398)	-0.431	(0.383)	-0.404	(0.420)	-0.429	(0.346)
Bachelor	-0.480	(0.233)	-0.518	(0.179)	-0.536	(0.177)	-0.539	(0.134)
Master	-0.283	(0.380)	-0.308	(0.329)	-0.317	(0.343)	-0.371	(0.199)
Doctoral	-0.204	(0.735)	-0.271	(0.653)	-0.348	(0.581)	-0.251	(0.659)
Part-time	0.254*	(0.066)	0.232*	(0.088)	0.234*	(0.086)	0.169	(0.144)
Self-employed	-0.316	(0.160)	-0.291	(0.202)	-0.342*	(0.087)	-0.273	(0.265)
Jobseeker	-0.644	(0.212)	-0.642	(0.213)	-0.642	(0.216)	-0.768	(0.109)
Retired	0.294	(0.111)	0.317*	(0.085)	0.306	(0.122)	0.295*	(0.071)
Student	-0.063	(0.785)	-0.070	(0.762)	-0.058	(0.801)	-0.039	(0.849)
Home-maker	0.168	(0.561)	0.191	(0.521)	0.190	(0.535)	0.187	(0.507)
Other	0.154	(0.584)	0.175	(0.567)	0.208	(0.506)	0.215	(0.442)
Employment			0.196*	(0.094)	0.250**	(0.037)	0.225*	(0.065)
Urbanization			-0.001**	(0.047)	-0.001**	(0.013)	-0.001**	(0.029)
cut1	-5.013***	(0.000)	-3.589***	(0.003)	-2.991**	(0.018)	-3.332***	(0.008)
cut2	-3.620***	(0.000)	-2.194*	(0.067)	-1.596	(0.198)	-1.943	(0.116)
cut3	-2.702***	(0.000)	-1.275	(0.290)	-0.675	(0.589)	-1.059	(0.390)
cut4	-0.630	(0.271)	0.802	(0.494)	1.412	(0.247)	1.032	(0.388)
var(_cons[cantons])							0.006	(.)
var(_cons[cantons>lucity])							0.000	(.)
Obs.	1176		1176		1176		1176	
AIC	2785.399		2781.404		2773.926		2807.587	

p-values in parentheses

Coefficients of cantons are omitted for brevity and are available upon request.

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

Table 3: Association between the share of social enterprises (from 2003 to 2011) and life satisfaction in 2013 (model with canton dummies).

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Age	-0.068**	-0.068**	-0.068**	-0.067**	-0.067**	-0.067**	-0.068**	-0.068**	-0.068**
	(0.019)	(0.020)	(0.018)	(0.014)	(0.014)	(0.016)	(0.015)	(0.015)	(0.015)
Age squared / 100	0.072**	0.072**	0.072**	0.072**	0.071**	0.072**	0.073**	0.073**	0.073**
	(0.034)	(0.036)	(0.034)	(0.027)	(0.027)	(0.030)	(0.027)	(0.027)	(0.028)
Women	0.131	0.129	0.130	0.130	0.132	0.132	0.132	0.133	0.136
	(0.128)	(0.132)	(0.134)	(0.134)	(0.130)	(0.134)	(0.134)	(0.132)	(0.126)
Household size	0.014	0.014	0.014	0.015	0.014	0.015	0.015	0.015	0.015
	(0.599)	(0.602)	(0.595)	(0.585)	(0.595)	(0.581)	(0.577)	(0.587)	(0.583)
Immigrant	-0.403***	-0.403***	-0.402***	-0.400***	-0.401***	-0.401***	-0.403***	-0.404***	-0.406***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Secondary	-0.378	-0.380	-0.379	-0.383	-0.389	-0.384	-0.385	-0.388	-0.388
	(0.177)	(0.175)	(0.175)	(0.170)	(0.165)	(0.170)	(0.169)	(0.163)	(0.161)
Short-cycle tertiary	-0.416	-0.420	-0.420	-0.424	-0.434	-0.427	-0.428	-0.432	-0.429
	(0.386)	(0.382)	(0.380)	(0.372)	(0.361)	(0.372)	(0.371)	(0.363)	(0.364)
Bachelor	-0.558	-0.560	-0.562	-0.570	-0.579	-0.570	-0.572	-0.581	-0.582
	(0.144)	(0.142)	(0.140)	(0.134)	(0.126)	(0.132)	(0.132)	(0.123)	(0.120)
Master	-0.393	-0.395	-0.397	-0.407	-0.416	-0.406	-0.409	-0.414	-0.413
	(0.210)	(0.207)	(0.203)	(0.190)	(0.179)	(0.193)	(0.189)	(0.179)	(0.176)
Doctoral	-0.324	-0.329	-0.331	-0.338	-0.344	-0.333	-0.336	-0.346	-0.349
	(0.597)	(0.590)	(0.588)	(0.578)	(0.571)	(0.586)	(0.582)	(0.569)	(0.564)
Part-time	0.169	0.168	0.166	0.161	0.167	0.169	0.172	0.179	0.176
	(0.166)	(0.169)	(0.175)	(0.194)	(0.181)	(0.174)	(0.165)	(0.149)	(0.156)
Self-employed	-0.314	-0.311	-0.309	-0.308	-0.311	-0.320	-0.317	-0.318	-0.313
	(0.172)	(0.173)	(0.172)	(0.173)	(0.169)	(0.156)	(0.163)	(0.160)	(0.169)
Job-seeker	-0.777	-0.780	-0.783	-0.793	-0.798	-0.788	-0.791	-0.792	-0.794
	(0.124)	(0.122)	(0.122)	(0.123)	(0.118)	(0.122)	(0.123)	(0.123)	(0.122)
Retired	0.289	0.290	0.291*	0.288	0.287	0.287	0.282	0.282	0.280
	(0.103)	(0.101)	(0.100)	(0.106)	(0.106)	(0.108)	(0.115)	(0.118)	(0.118)
Student	-0.024	-0.024	-0.025	-0.031	-0.030	-0.030	-0.031	-0.032	-0.032
	(0.909)	(0.911)	(0.905)	(0.884)	(0.885)	(0.885)	(0.883)	(0.878)	(0.881)
Home-maker	0.185	0.187	0.188	0.184	0.186	0.180	0.180	0.175	0.174
	(0.532)	(0.530)	(0.525)	(0.534)	(0.530)	(0.547)	(0.545)	(0.552)	(0.551)
Other	0.249	0.250	0.249	0.246	0.248	0.248	0.248	0.245	0.250
	(0.400)	(0.399)	(0.401)	(0.409)	(0.401)	(0.404)	(0.403)	(0.405)	(0.392)
20,001 to 40,000€	0.663***	0.660***	0.663***	0.662***	0.653***	0.656***	0.650***	0.648***	0.649***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)
40,001 to 60,000€	1.033***	1.030***	1.033***	1.033***	1.028***	1.029***	1.024***	1.026***	1.029***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
60,001 to 80,000€	1.170***	1.167***	1.172***	1.171***	1.164***	1.163***	1.159***	1.163***	1.163***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
80,001 to 100,000€	1.374***	1.372***	1.374***	1.371***	1.360***	1.362***	1.360***	1.358***	1.360***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
More than 100,000€	1.685***	1.682***	1.687***	1.687***	1.678***	1.678***	1.672***	1.674***	1.676***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Employment	0.273**	0.271**	0.265*	0.256*	0.258*	0.260*	0.257*	0.242*	0.226*
	(0.043)	(0.047)	(0.062)	(0.083)	(0.074)	(0.067)	(0.067)	(0.080)	(0.092)
Urbanization	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**
	(0.016)	(0.019)	(0.027)	(0.036)	(0.037)	(0.027)	(0.019)	(0.024)	(0.032)
Share SE	**0.037**	**0.057**	**0.078**	**0.143**	**0.167****	**0.124****	**0.131****	**0.164***	**0.173**
	(0.649)	(0.477)	(0.369)	(0.146)	(0.022)	(0.032)	(0.036)	(0.100)	(0.126)
cut1	-2.642*	-2.631*	-2.655*	-2.655*	-2.614*	-2.671*	-2.708*	-2.803**	-2.906**
	(0.052)	(0.059)	(0.059)	(0.060)	(0.068)	(0.059)	(0.053)	(0.043)	(0.032)
cut2	-1.253	-1.242	-1.266	-1.265	-1.224	-1.282	-1.319	-1.414	-1.517
	(0.349)	(0.366)	(0.359)	(0.362)	(0.384)	(0.357)	(0.339)	(0.299)	(0.255)
cut3	-0.368	-0.357	-0.380	-0.379	-0.338	-0.396	-0.432	-0.527	-0.631
	(0.783)	(0.795)	(0.783)	(0.785)	(0.810)	(0.776)	(0.754)	(0.699)	(0.636)
cut4	1.731	1.742	1.719	1.721	1.763	1.704	1.668	1.573	1.470
	(0.184)	(0.191)	(0.200)	(0.201)	(0.197)	(0.207)	(0.213)	(0.234)	(0.255)
AIC	2797.947	2797.810	2797.637	2796.672	2796.012	2796.978	2796.859	2796.321	2796.272
Obs.	1176	1176	1176	1176	1176	1176	1176	1176	1176

p-values in parentheses

Coefficients of cantons are omitted for brevity and are available upon request

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

The strong decline of the upper curve in the right panel suggests that the share of social enterprises strongly decreases the probabilities that unemployed people are very dissatisfied with their life. In particular, when the share of social enterprises is high, the differences in the probabilities of being very dissatisfied by occupational status are smaller than when the share is low.

Figure 4: Association between the share of social enterprises in 2010 and well-being in 2013 by occupational status.

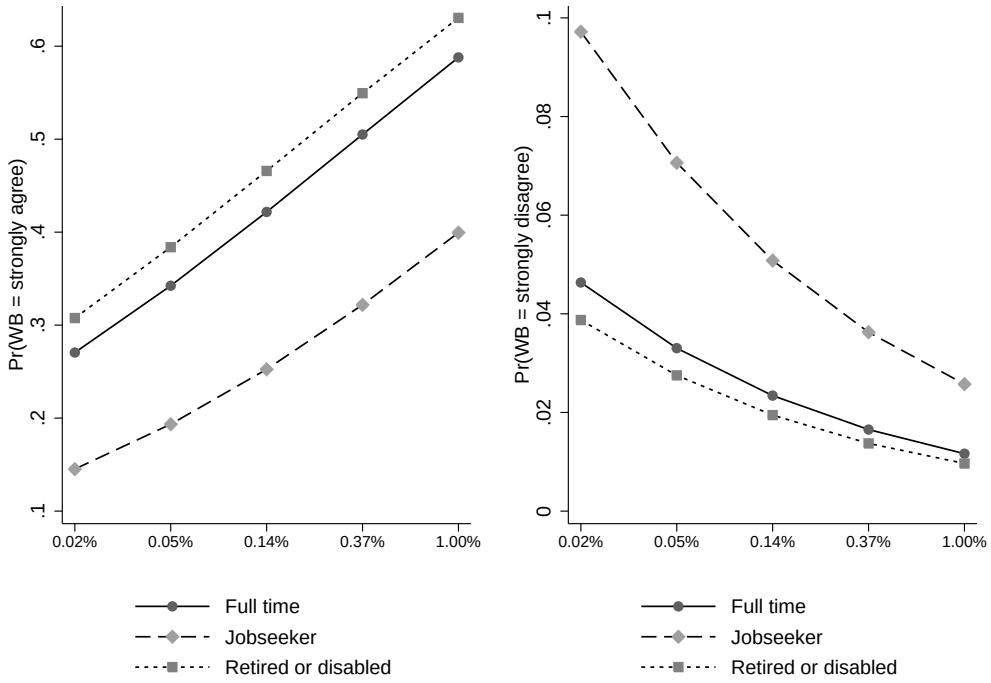


Figure 5 illustrates the relationship between the share of social enterprises and the predicted probabilities to be very satisfied/dissatisfied with life for people in different income brackets. The decrease in the predicted probabilities of being very dissatisfied with life is stronger for people with lower income, whereas it is almost insignificant for those with higher income. Also in this case the discrepancies in the predicted probabilities of being very dissatisfied with life among the different ranges of income are lower when the share of social enterprises is high. In other words, a higher density of social enterprises is associated to lower differences in people's dissatisfaction with their lives across income levels. This result suggests that social enterprises have a social support function within the society. Concerning the predicted probabilities of being very satisfied, a higher share of social enterprises leads to somewhat wider differences in well-being. This might be explained by the fact that even if the activities of social enterprises increase the probability of being very satisfied with life for everyone, other factors may limit such increase for the most economically vulnerable people.

Figure 5: Association between the share of social enterprises in 2010 and well-being in 2013 across income categories.

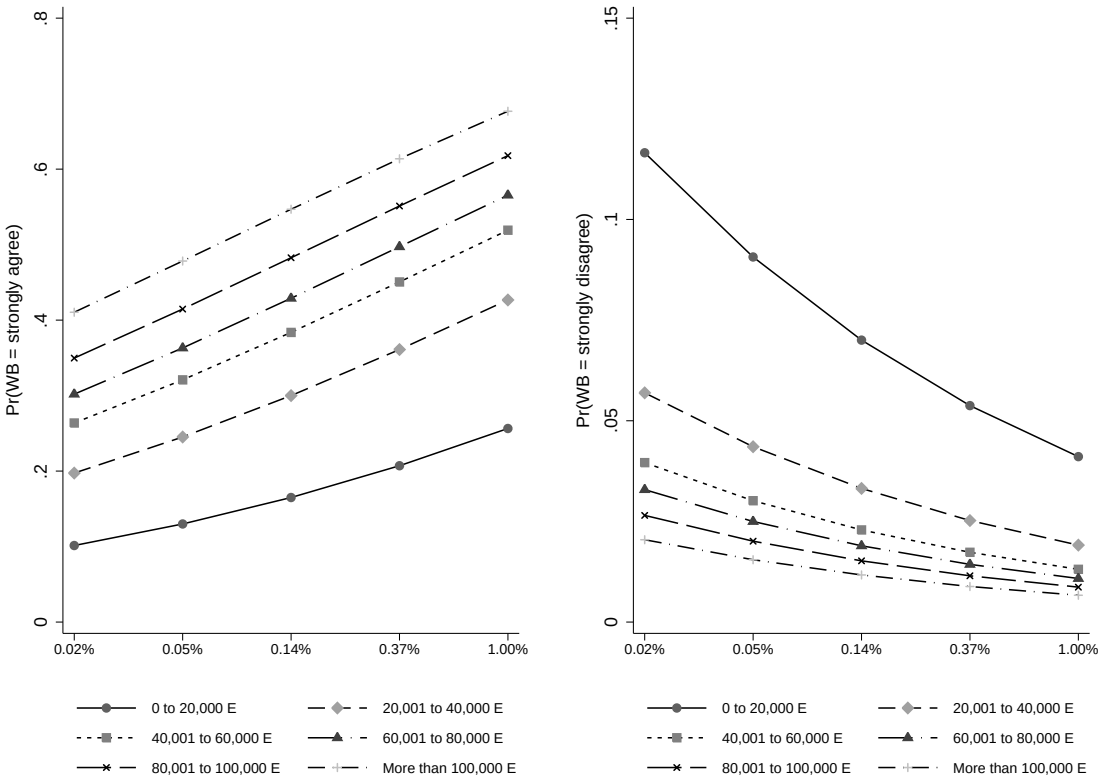
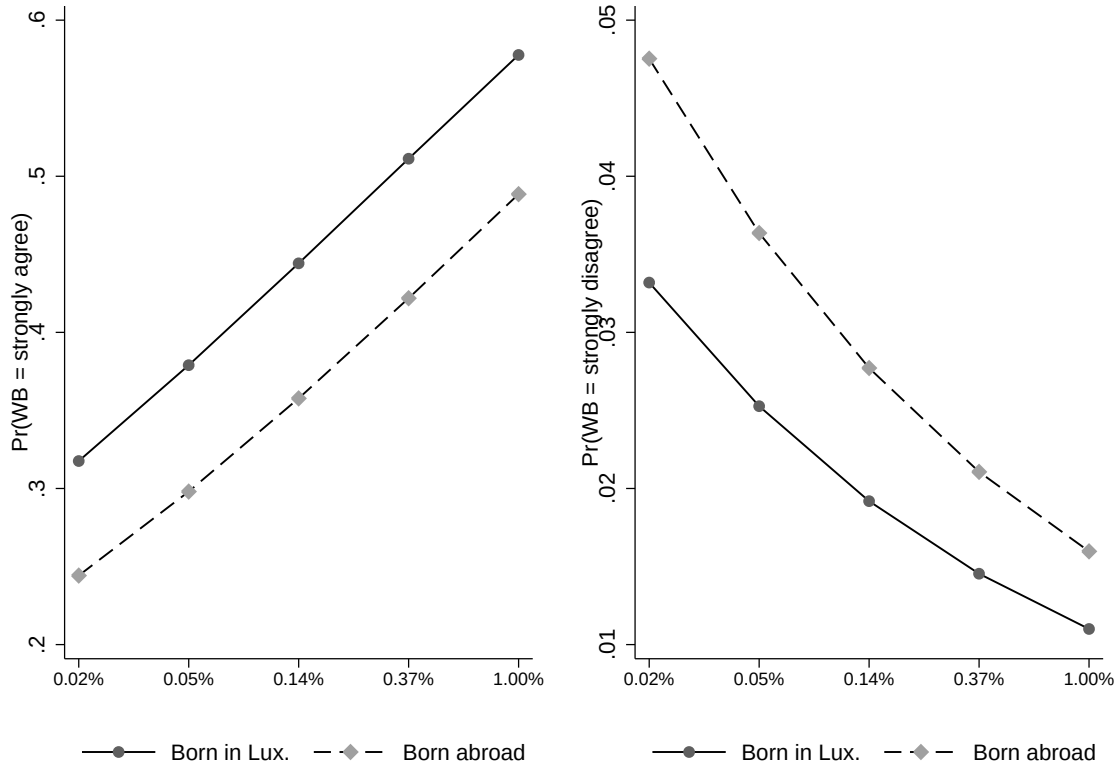


Figure 6 shows the predicted probabilities of being very satisfied/dissatisfied with life for immigrants and non-immigrants. The gap in the probabilities of being very dissatisfied is lower in presence of high levels of the share of social enterprises. Figure 7 shows the same information by education level. In this case the gap in the predicted probabilities of being very dissatisfied between people with less than a secondary education and people with a bachelor decreases marginally.

Previous figures have two main implications. First, they confirm the role of social enterprises as their activities increase the average well-being in the society. Second, social enterprises are determinant to decrease the bad-being of the most disadvantaged people, in particular of the most economically vulnerable ones. Table 7 in Appendix A reports the marginal effects for all the variables included in the equation.

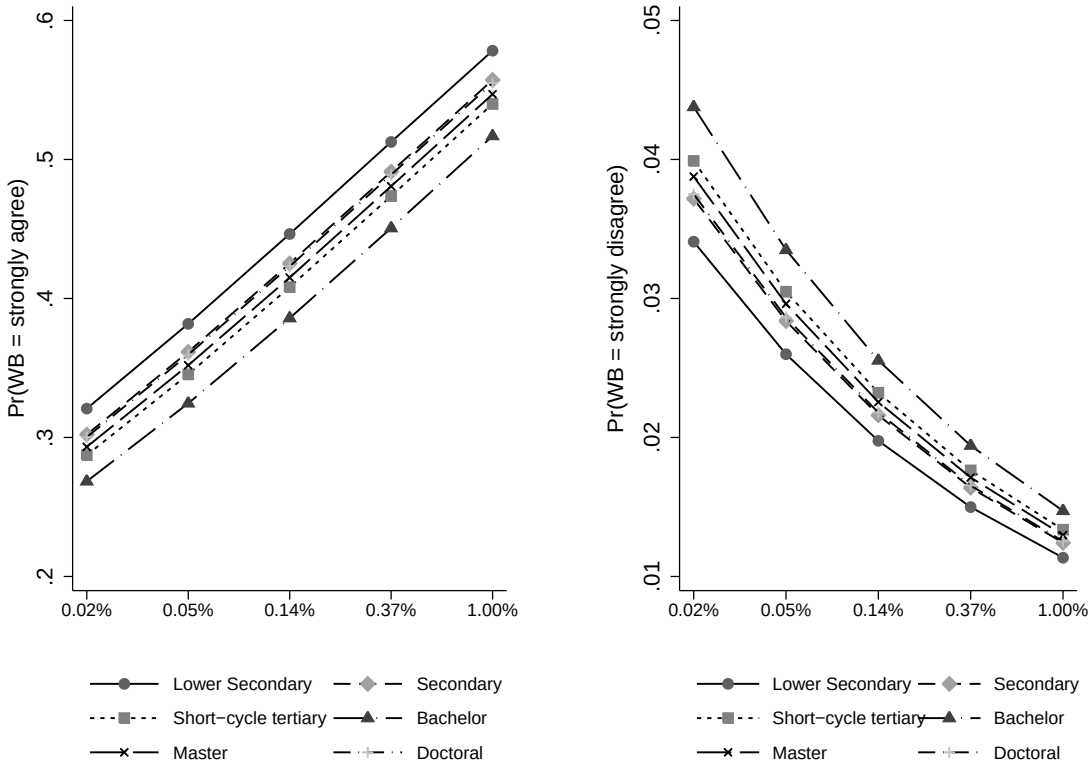
Figure 6: Association between the share of social enterprises in 2010 and well-being in 2013 by migratory background.



5.3 Robustness check

Table 4 summarizes our findings using the alternative measure of subjective well-being, namely the perception that life conditions are excellent. In table 4 we report the

Figure 7: Association between the share of social enterprises in 2010 and well-being in 2013 for people with different degrees of education.



results for each year from 2003 to 2011 using ordered logit model with canton dummy variables. For the proxy "the conditions of my life are excellent", the correlation of the share of social enterprises is positive and significant for all the years. The coefficients of the control variables are consistent with those from section 5.2 on life satisfaction.

Summarizing, the positive association between the share of social enterprises and well-being in Luxembourg is robust to a different specification of the dependent variable, and it is persistent over time.

6 Conclusion

Social enterprises tackle social issues that are neglected by the market and hardly addressed by the public sector. However, empirical studies evaluating the non economic outcome of social enterprises are scarce. The availability of data on people's life satisfaction and register data from the Statistical Office of Luxembourg, allow to fill this gap. Present work provides a first assessment of the non economic outcome of social enterprises using data on people's subjective well-being from Luxembourg.

We found that the activity of social enterprises has an effective and lasting positive correlation with people's well-being. In particular, the higher is the share of social enterprises on the total enterprises registered by city, the higher is the reported well-being. We obtained this result after using the share of social enterprises measured in 2007, 2008, 2009, and 2010. In particular, figures suggest that social enterprises play an important social support function that benefits the whole society without exceptions. However, we emphasize that the activity of social enterprises contributes significantly to alleviating the bad-being of most vulnerable people, such as unemployed, poor people and immigrants. This study provides some evidence in favour of policies to promote and support social enterprises. According to our analysis, such policies would be particularly beneficial when supporting social integration initiatives for socially excluded people, such as unemployed or poor people.

The empirical approach used in this study has three main limitations. First, the Business register of Luxembourg used to compute the number of social enterprises considers only entities with a yearly turnover larger than 10,000 Euro. This restriction presumably underestimates the total number of social enterprises especially because a large part of them are not for profit with a very low turnover. The second limitation is the impossibility to assess whether the entities that we consider effectively meet the fundamental values of social entrepreneurship, such as serving its members or the community, democratic decision-making, and economic autonomy. The third limitation is the absence of a test of causality. As it is often the case instruments are scarce and the quality of data at hands limits the possibility of a causal analysis. However, we believe that our estimates are fairly robust to the issue of reverse causality for two reasons: first, our independent variable is not individual, but aggregated at city level. It is therefore

Table 4: Association between the share of social enterprises and the proxy 'the conditions of my life are excellent'.

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Age	-0.053**	-0.052**	-0.054**	-0.055***	-0.054***	-0.055**	-0.056***	-0.055***	-0.055***
	(0.016)	(0.016)	(0.011)	(0.006)	(0.009)	(0.011)	(0.006)	(0.007)	(0.005)
Age squared / 100	0.062**	0.062**	0.063**	0.064**	0.064**	0.065**	0.067**	0.065**	0.066***
	(0.025)	(0.024)	(0.018)	(0.012)	(0.015)	(0.018)	(0.011)	(0.011)	(0.009)
Gender	-0.134	-0.132	-0.129	-0.127	-0.119	-0.118	-0.117	-0.116	-0.113
	(0.302)	(0.309)	(0.320)	(0.325)	(0.350)	(0.354)	(0.355)	(0.364)	(0.379)
Household size	-0.080**	-0.080**	-0.080**	-0.080***	-0.080**	-0.079**	-0.078**	-0.079**	-0.079**
	(0.010)	(0.012)	(0.012)	(0.010)	(0.011)	(0.012)	(0.013)	(0.013)	(0.012)
Immigrant	-0.060	-0.063	-0.061	-0.057	-0.062	-0.062	-0.063	-0.066	-0.069
	(0.463)	(0.429)	(0.449)	(0.487)	(0.436)	(0.439)	(0.438)	(0.417)	(0.386)
20,001 to 40,000 €	1.222***	1.198***	1.212***	1.209***	1.180***	1.176***	1.169***	1.170***	1.171***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
40,001 to 60,000 €	1.725***	1.710***	1.724***	1.728***	1.702***	1.697***	1.690***	1.695***	1.700***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
60,001 to 80,000 €	2.056***	2.036***	2.059***	2.051***	2.023***	2.015***	2.011***	2.021***	2.023***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
80,001 to 100,000 €	2.084***	2.072***	2.083***	2.077***	2.049***	2.046***	2.041***	2.041***	2.045***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
More than 100,000 €	2.887***	2.872***	2.896***	2.895***	2.861***	2.852***	2.847***	2.853***	2.857***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Secondary	-0.044	-0.056	-0.055	-0.066	-0.074	-0.067	-0.074	-0.071	-0.070
	(0.718)	(0.646)	(0.651)	(0.586)	(0.546)	(0.597)	(0.538)	(0.554)	(0.559)
Short-cycle tertiary	-0.156	-0.180	-0.182	-0.195	-0.214	-0.201	-0.212	-0.211	-0.205
	(0.472)	(0.420)	(0.399)	(0.360)	(0.353)	(0.395)	(0.361)	(0.346)	(0.357)
Bachelor	0.109	0.096	0.091	0.072	0.066	0.080	0.066	0.060	0.060
	(0.615)	(0.659)	(0.672)	(0.737)	(0.768)	(0.723)	(0.764)	(0.782)	(0.784)
Master	0.370**	0.366**	0.360**	0.340*	0.336*	0.350*	0.333*	0.337*	0.338*
	(0.041)	(0.044)	(0.047)	(0.065)	(0.071)	(0.057)	(0.067)	(0.070)	(0.066)
Doctoral	0.994***	0.971***	0.969***	0.961***	0.958***	0.972***	0.959***	0.953***	0.949***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Part-time	0.192	0.186	0.178	0.168	0.182	0.184	0.191	0.202	0.198
	(0.191)	(0.215)	(0.240)	(0.277)	(0.239)	(0.227)	(0.209)	(0.190)	(0.202)
Self-employed	-0.800***	-0.796***	-0.792***	-0.801***	-0.807***	-0.818***	-0.816***	-0.821***	-0.812***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Job-seeker	-0.364	-0.371	-0.376	-0.385	-0.384	-0.372	-0.376	-0.373	-0.377
	(0.368)	(0.352)	(0.347)	(0.342)	(0.332)	(0.347)	(0.350)	(0.353)	(0.352)
Retired	0.050	0.050	0.054	0.046	0.046	0.046	0.038	0.044	0.039
	(0.866)	(0.865)	(0.855)	(0.876)	(0.878)	(0.878)	(0.897)	(0.882)	(0.895)
Student	0.503***	0.498***	0.492***	0.481***	0.486***	0.484***	0.485***	0.484***	0.486***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)
Home-maker	-0.071	-0.079	-0.070	-0.088	-0.089	-0.092	-0.092	-0.097	-0.104
	(0.806)	(0.785)	(0.806)	(0.758)	(0.762)	(0.759)	(0.755)	(0.739)	(0.717)
Other	0.092	0.089	0.084	0.076	0.079	0.081	0.076	0.068	0.076
	(0.668)	(0.670)	(0.687)	(0.720)	(0.707)	(0.699)	(0.715)	(0.743)	(0.713)
Employment	0.088	0.082	0.063	0.053	0.071	0.071	0.058	0.038	0.003
	(0.316)	(0.355)	(0.493)	(0.553)	(0.433)	(0.446)	(0.525)	(0.672)	(0.974)
Urbanization	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.105)	(0.123)	(0.201)	(0.198)	(0.155)	(0.147)	(0.109)	(0.152)	(0.380)
Share SE	**0.270*** **	**0.253*** **	**0.288*** **	**0.356*** **	**0.261** **	**0.193***	**0.265** **	**0.297***	**0.331** **
	(0.000)	**(0.007)**	**(0.002)**	**(0.001)**	**(0.026)**	**(0.098)**	**(0.044)**	**(0.069)**	**(0.042)**
cut1	-2.634***	-2.681***	-2.809***	-2.850***	-2.806***	-2.919***	-2.995***	-3.128***	-3.348***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
cut2	-1.264*	-1.311*	-1.440*	-1.479**	-1.437*	-1.552**	-1.627**	-1.759***	-1.979***
	(0.094)	(0.088)	(0.055)	(0.034)	(0.055)	(0.048)	(0.024)	(0.010)	(0.002)
cut3	-0.051	-0.099	-0.227	-0.265	-0.225	-0.341	-0.415	-0.546	-0.765
	(0.947)	(0.900)	(0.770)	(0.717)	(0.770)	(0.669)	(0.573)	(0.434)	(0.246)
cut4	2.085***	2.036***	1.910**	1.876***	1.911**	1.793**	1.721**	1.591**	1.373**
	(0.006)	(0.009)	(0.013)	(0.010)	(0.013)	(0.024)	(0.019)	(0.021)	(0.034)
AIC	2989.517	2990.190	2989.212	2986.227	2989.868	2992.225	2990.063	2989.274	2988.529
Obs.	1176	1176	1176	1176	1176	1176	1176	1176	1176

p-values in parentheses

Coefficients of cantons are omitted for brevity and are available upon request

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

plausible to assume that it is not affected by individual level well-being. The second reason is that the share of social enterprises is measured before people's well-being. Even admitting that well-being affects the creation of new social enterprises, but we do not have evidence in favor of this hypothesis, it is implausible that the individual well-being in 2013 predicts the share of social enterprises in the preceding years.

We are aware that this is only a first contribution to the literature on social entrepreneurship and its non-economic outcomes. The quantitative literature in this field is largely unexplored and much work is still needed. Future research might try to refine the concept and the measurement of social enterprises, besides estimating the role of social enterprises using other non-economic factors such as the quality of the environment, social capital, tolerance, freedom or social integration. Moreover, further analysis should consider the effectiveness of social enterprises in the management of resources and in the provision of social support compared to public initiatives. If social enterprises effectively contribute to people's well-being, future studies should carefully analyse the channels and the conditions allowing such outcomes. In particular, future research should explore whether a cooperative and democratic organization allows a more efficient, innovative and therefore more successful organization.

A Tables

Table 5: Marginal effects for each category of the life satisfaction variable.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Age	-0.012**	0.004**	0.004*	0.003**	0.001**
Age squared	0.000*	-0.000*	-0.000	-0.000*	-0.000*
Female	0.031*	-0.011*	-0.009*	-0.007	-0.003
Household size	0.011*	-0.004*	-0.003*	-0.003*	-0.001*
Born abroad	-0.088***	0.028***	0.028***	0.022***	0.010***
Secondary	-0.037	0.014	0.011	0.008	0.004
Short-cycle tertiary	-0.051	0.019	0.015	0.012	0.005
Bachelor	-0.066*	0.024*	0.020*	0.016**	0.007**
Master	-0.028	0.011	0.008	0.006	0.003
Doctoral	-0.040	0.016	0.012	0.009	0.004
Part-time	0.054*	-0.021*	-0.016**	-0.012*	-0.005**
Self-employed	-0.018	0.005	0.006	0.005	0.002
Jobseeker	-0.139**	0.013	0.052*	0.049	0.025
Retired	0.092*	-0.039	-0.026*	-0.019**	-0.008*
Student	-0.011	0.003	0.003	0.003	0.001
Home-maker	0.037	-0.014	-0.011	-0.009	-0.004
Other	0.052	-0.020	-0.015	-0.012	-0.005
20,001 to 40,000 €	0.110***	0.041	-0.052***	-0.063***	-0.036**
40,001 to 60,000 €	0.198***	0.028	-0.085***	-0.092***	-0.049***
60,001 to 80,000 €	0.234***	0.015	-0.096***	-0.100***	-0.053***
80,001 to 100,000 €	0.299***	-0.015	-0.114***	-0.113***	-0.058***
More than 100,000 €	0.357***	-0.047*	-0.127***	-0.121***	-0.061***
Employment	0.060**	-0.021**	-0.018**	-0.014***	-0.007**
Urbanization	-0.000***	0.000***	0.000***	0.000***	0.000***

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Estimates of the non economic outcomes of social enterprises using random intercept model with three levels

	2007		2008		2009		2010		2011	
Age	-0.067**	(0.014)	-0.067**	(0.016)	-0.069**	(0.013)	-0.068**	(0.014)	-0.069**	(0.012)
Age squared / 100	0.071**	(0.025)	0.071**	(0.029)	0.074**	(0.024)	0.072**	(0.025)	0.074**	(0.023)
Women	0.135	(0.132)	0.129	(0.192)	0.132	(0.132)	0.129	(0.151)	0.134	(0.167)
Household size	0.012	(0.639)	0.015	(0.753)	0.014	(0.695)	0.014	(0.604)	0.014	(0.742)
Immigrant	-0.403***	(0.000)	-0.406***	(0.000)	-0.410***	(0.000)	-0.406***	(0.000)	-0.414***	(0.000)
20,001 to 40,000€	0.681***	(0.001)	0.675***	(0.002)	0.664***	(0.002)	0.667***	(0.002)	0.658***	(0.002)
40,001 to 60,000€	1.042***	(0.000)	1.040***	(0.000)	1.033***	(0.000)	1.035***	(0.000)	1.035***	(0.000)
60,001 to 80,000€	1.193***	(0.000)	1.182***	(0.000)	1.175***	(0.000)	1.183***	(0.000)	1.174***	(0.000)
80,001 to 100,000€	1.389***	(0.000)	1.382***	(0.000)	1.378***	(0.000)	1.378***	(0.000)	1.371***	(0.000)
More than 100,000€	1.689***	(0.000)	1.683***	(0.000)	1.682***	(0.000)	1.677***	(0.000)	1.681***	(0.000)
Secondary	-0.385	(0.159)	-0.384	(0.246)	-0.382	(0.189)	-0.386	(0.157)	-0.387	(0.200)
Short-cycle tertiary	-0.442	(0.342)	-0.436	(0.349)	-0.432	(0.353)	-0.443	(0.342)	-0.437	(0.338)
Bachelor	-0.565	(0.131)	-0.562	(0.189)	-0.564	(0.158)	-0.572	(0.125)	-0.580	(0.157)
Master	-0.408	(0.165)	-0.402	(0.181)	-0.400	(0.150)	-0.408	(0.172)	-0.410	(0.128)
Doctoral	-0.276	(0.635)	-0.294	(0.497)	-0.300	(0.548)	-0.298	(0.614)	-0.309	(0.473)
Part-time	0.173	(0.164)	0.172	(0.196)	0.174	(0.172)	0.183	(0.134)	0.182	(0.170)
Self-employed	-0.270	(0.283)	-0.288	(0.177)	-0.289	(0.207)	-0.282	(0.253)	-0.283	(0.171)
Job-seeker	-0.793	(0.113)	-0.781	(0.209)	-0.784	(0.132)	-0.784	(0.124)	-0.789	(0.180)
Retired	0.297*	(0.075)	0.291*	(0.076)	0.291*	(0.077)	0.289*	(0.095)	0.287*	(0.078)
Student	-0.032	(0.880)	-0.033	(0.903)	-0.031	(0.895)	-0.034	(0.870)	-0.038	(0.889)
Home-maker	0.192	(0.504)	0.187	(0.532)	0.187	(0.525)	0.180	(0.531)	0.175	(0.554)
Other	0.218	(0.453)	0.228	(0.434)	0.232	(0.428)	0.220	(0.447)	0.232	(0.418)
Employment	0.188	(0.120)	0.217*	(0.071)	0.220*	(0.074)	0.189	(0.132)	0.188	(0.168)
Urbanization	-0.001**	(0.046)	-0.001	(0.234)	-0.001*	(0.055)	-0.001**	(0.037)	-0.001	(0.246)
Share SE	**0.154****	**(0.025)**	**0.124**	**(0.399)**	**0.134**	**(0.107)**	**0.173***	**(0.087)**	**0.190**	**(0.120)**
cut1	-3.428***	(0.005)	-3.270**	(0.011)	-3.276**	(0.010)	-3.424***	(0.007)	-3.443**	(0.015)
cut2	-2.038*	(0.092)	-1.881	(0.134)	-1.886	(0.134)	-2.034	(0.104)	-2.052	(0.138)
cut3	-1.151	(0.340)	-0.995	(0.425)	-0.999	(0.426)	-1.148	(0.357)	-1.165	(0.395)
cut4	0.942	(0.419)	1.102	(0.358)	1.106	(0.367)	0.947	(0.433)	0.939	(0.463)
var(_cons[cantons])	0.000	(.)	0.047	(.)	0.048	(.)	0.028	(.)	0.046	(.)
var(_cons[cantons>lucity])	0.003	(.)	0.000	(1.000)	0.000	(1.000)	0.000	(1.000)	0.000	(1.000)
AIC	2804.584		2811.127		2811.217		2808.869		2810.363	
Obs.	1176		1176		1176		1176		1176	

p-values in parentheses

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

Table 7: Marginal effect of well-being including the share of social enterprises in 2010

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Age	-0.015**	0.006**	0.004**	0.004***	0.002***
Age squared / 100	0.016**	-0.006**	-0.005**	-0.004**	-0.002**
Women	0.030	-0.011	-0.009	-0.007	-0.003
Household size	0.003	-0.001	-0.001	-0.001	-0.000
Born abroad	-0.089***	0.029***	0.027***	0.023***	0.010***
Secondary	-0.089	0.042	0.023	0.018	0.007
Short-cycle tertiary	-0.099	0.045	0.026	0.020	0.008
Bachelor	-0.132	0.056	0.036*	0.028	0.012
Master	-0.095	0.044	0.025	0.019	0.008
Doctoral	-0.080	0.038	0.020	0.015	0.006
Part-time	0.041	-0.016	-0.012	-0.009	-0.004
Self-employed	-0.068	0.017**	0.022	0.020	0.009
Job-seeker	-0.155*	0.014	0.057	0.057	0.027
Retired or disabled	0.064	-0.027	-0.018*	-0.014*	-0.006
Student	-0.007	0.002	0.002	0.002	0.001
Home-maker	0.040	-0.016	-0.011	-0.009	-0.004
Other	0.056	-0.023	-0.016	-0.012	-0.005
20,001 to 40,000 €	0.107***	0.029*	-0.048***	-0.058**	-0.030**
40,001 to 60,000 €	0.186***	0.014	-0.076***	-0.083***	-0.041***
40,001 to 80,000 €	0.216***	0.004	-0.085***	-0.091***	-0.044***
80,001 to 100,000 €	0.262***	-0.016	-0.098***	-0.100***	-0.048***
More than 100,000 €	0.338***	-0.057***	-0.115***	-0.113***	-0.052***
Employment	0.052*	-0.019*	-0.015	-0.013*	-0.005*
Urbanization	-0.000**	0.000**	0.000**	0.000**	0.000**
Share SE	0.037*	-0.014*	-0.011*	-0.009	-0.004

Marginal effects include cantons fixed effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

References

Alesina, A., Di Tella, R., and MacCulloch, R. (2004). Inequality and happiness: are Europeans and Americans different? *Journal of Public Economics*, 88(9):2009–2042.

Allegrezza, S. and Molling, V. (2005). *À la recherche de l'économie sociale et solidaire, le cas du Grand-Duché de Luxembourg*. STATEC Working papers.

Amin, A. (2009). Extraordinarily ordinary - working in the social economy. *Social Enterprise Journal*, 5(1):30–49.

Becchetti, L. and Borzaga, C. (2012). *The economics of social responsibility*. Journal of Economic Literature.

Blakemore, K. (2003). *Social policy: an introduction*. Open University Press, New York, second ed. edition.

Blanchflower, D. and Oswald, A. (2004). Money, sex and happiness: An empirical study. *The Scandinavian Journal of Economics*, 106(3):393–415.

Borzaga, C., Depedri, S., and Tortia, E. (2010). *The Growth Of Organizational Variety In Market Economies: The Case Of Social Enterprises*. Euricse Working Papers, N.003— 10.

Bouchard, M. J., Ferraton, C., Michaud, V., and Leclerc, P. (2006). *Database on social economy organizations: The qualification criteria*. Chaire de recherche du Canada en économie sociale, Université du Québec à Montréal.

Bruni, L. and Porta, P. (2007). *Handbook on the Economics of Happiness*. Edward Elgar Publishing Ltd., Cheltenham, UK and Northampton, MA, USA.

Calkins, P. and Ngo, A.-T. (2010). The impacts of farmer cooperatives on the well-being of cocoa producing villages in cote d'ivoire and ghana. *Canadian Journal of Development Studies/Revue canadienne d'études du développement*, 30(3-4):535–563.

Cameron, J. (2010). Business as usual or economic innovation?: Work, markets and growth in community and social enterprises. *Third Sector Review*, 16(2):93–108.

Clark, A. E., D'Ambrosio, C., and Ghislandi, S. (2013). Poverty and well-being: Panel evidence from germany. PSE Working Papers hal-00814659, HAL.

Clark, A. E., Flèche, S., and Senik, C. (2012). The great happiness moderation. SOEP-papers on Multidisciplinary Panel Data Research 468, DIW Berlin, The German Socio-Economic Panel (SOEP).

Defourny, J. and Nyssens, M. (2008). Social enterprise in Europe: recent trends and developments. *Social enterprise journal*, 4(3):202–228.

Defourny, J. and Nyssens, M. (2010). Conceptions of social enterprise and social entrepreneurship in Europe and the United States: Convergences and divergences. *Journal of social entrepreneurship*, 1(1):32–53.

Di Tella, R. and MacCulloch, R. (2008). Gross national happiness as an answer to the Easterlin paradox? *Journal of Development Economics*, 86(1):pp. 22–42.

Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). *The Satisfaction With Life Scale*. Journal of Personality Assessment.

Diener, E., Inglehart, R., and Tay, L. (2012). *Theory and Validity of Life Satisfaction Scales*. Social Indicators Research.

Diener, E., Lucas, R., Schimmack, U., and Helliwell, J. (2009). *Well-being for public policy*. Oxford University Press, New York.

Dolan, P., Peasgood, T., and White, M. (2008). Do we really know what makes us happy? a review of the economic literature on the factors associated with subjective well-being. *Journal of economic psychology*, 29(1):94–122.

European Commission (2013). *Social economy and social entrepreneurship*, volume 4. Social Europe guide.

European Standing Conference of Co-operatives, Mutual Societies, Associations and Foundations (2002). *Social Economy Charter*. CEP-CMAF, Bruxelles.

Fazzi, L. (2010). The provision of welfare and general-interest services. In Becchetti, L. and Borzaga, C., editors, *The economics of social responsibility. The world of social enterprises.*, pages 55–71. Routledge, London.

Fitoussi, J.-P. and Stiglitz, J. (2011). *On the measurement of social progress and well being: some further thoughts*. Documents de Travail de l'OFCE, No.2011-19.

Fleche, S., Smith, C., and Sorsa, P. (2011). Exploring determinants of subjective wellbeing in OECD countries: evidence from the World Values Survey. (921).

Frey, B. and Stutzer, A. (2000). Happiness, economy, and institution. *Economic Journal*, 110(466):918 – 938.

Fulton, M. E. and Ketilson, L. H. (1992). The role of cooperatives in communities: Examples from Saskatchewan. *Journal of Agricultural Cooperation*, 7:15–42.

Hayo, B. (2007). Happiness in transition: An empirical study on Eastern Europe. *Economic Systems*, 31(2):204–221.

Kahneman, D. and Krueger, A. (2006). *Developments in the measurement of subjective well-being.* The Journal of Economic Perspectives, No.20, pp.3-24.

Laville, J. (2010). *L' économie solidaire: une perspective internationale.* Libraire Arthème Fayard, Paris.

Laville, J.-L. and Nyssens, M. (2001). The social enterprise: towards a theoretical socio-economic approach. In Routledge, editor, *The emergence of social enterprise*, pages 312–333. Routledge, London.

Layard, R. (2005). *Happiness: Lessons from a new science.* Penguin, New York.

Layard, R. (2009). *Why subjective well-being should be the measure of progress.* OECD Forum on Statistics, Knowledge and Policy Charting Progress, Building Visions, Improving Life.

Luke, D. A. (2004). Multilevel modeling: Quantitative applications in the social sciences. *London: A sage university paper series.*

OECD (2013). *OECD Guidelines on Measuring Subjective Well-being.* OECD Publishing.

Peiffer, J. and Hiltgen, M. (2010). *Vers de nouvelles perspectives pour l'Economie Solidaire au Luxembourg ?, A la recherche de l'économie solidaire et sociale au Luxembourg. Quelques chiffres préliminaires.* Conference CRP Henri Tudor.

Pèrotin, V. (2013). Worker cooperatives: Good, sustainable jobs in the community. *Journal of Entrepreneurial and Organizational Diversity*, 2(2):34–47.

Powdthavee, N. (2007). Economics of happiness: a review of literature and applications. *Chulalongkorn Journal of Economics (forthcoming).*

Powdthavee, N. (2010). *The happiness equation: The surprising economics of our most valuable asset.* Icon Books.

Raudenbush, S. W. and Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*, volume 1. Sage.

Rosenblatt, C. (2013). *Quelle place pour l'économie sociale en Europe?* Think Tank européen pour la solidarité.

Rückert, E. and Sarracino, F. (2014). *Assessing the social and solidarity economy in Luxembourg.* STATEC Working papers.

Savio, M. and Righetti, A. (1993). Cooperatives as a social enterprise in italy: a place for social integration and rehabilitation. *Acta Psychiatrica Scandinavica*, 88(4):238–242.

Schimmack, U., Krause, P., Wagner, G., and Schupp, J. (2010). Stability and change of well-being: An experimentally enhanced latent state-trait-error analysis. *Social Indicators Research*, 95(1):19 – 31.

Schneider, L. and Schimmack, U. (2009). Self-informant agreement in well-being ratings: A meta-analysis. *Social Indicators Research*, 94(3):363–376.

Schwarz, N. and Strack, F. (1999). Reports of subjective well-being: Judgmental processes and their methodological implications. In D. Kahneman, E. D. and Schwarz, N., editors, *Well-being: the foundations of hedonist psychology*. Russell Sage Foundation, New York.

Snijders, T. A. (2005). Power and sample size in multilevel linear models. In Everitt, B. and Howell, D., editors, *Encyclopedia of statistics in behavioral science*, volume 3, page 1570–1573. Wiley Online Library.

Stutzer, A. and Frey, B. S. (2012). Recent developments in the economics of happiness: A selective overview. Institute for the study of labor (IZA).

Sullivan Mort, G., Weerawardena, J., and Carnegie, K. (2003). Social entrepreneurship: Towards conceptualisation. *International journal of nonprofit and voluntary sector marketing*, 8(1):76–88.

Toia report (2013). *Committee on Industry, Research and Energy*. European Parliament.

Tortia, E. (2010). The impact of social enterprises on output, employment, and welfare. In Becchetti, L. and Borzaga, C., editors, *The economics of social responsibility. The world of social enterprises.*, pages 55–71. Routledge, London.

van Praag, B., Frijters, P., and Ferrer-i Carbonell, A. (2003). The anatomy of subjective well-being. *Journal of Economic Behaviour and Organization*, 51(1):pp. 29 – 49.

van Reekum, C., Urry, H., Johnstone, T., Thurow, M., Frye, C., Jackson, C., Schaefer, H., Alexander, A., and Davidson, R. (2007). Individual differences in amygdala and ventromedial prefrontal cortex activity are associated with evaluation speed and psychological well-being. *Journal of Cognitive Neuroscience*, 19(2):237–248.

Wanous, J. and Hudy, M. (2001). Single-item reliability: a replication and extension. *Organizational Research Methods*, 4:pp. 361 – 375.