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Richer in Money, Poorer in Relationships and Unhappy? Time Series Comparisons of Social Capital and Well-Being in Luxembourg

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Abstract The worrying decline of social capital (Putnam in Bowling alone: the collapse and revival of American community. Simon and Schuster, New York, 2000) and the disappointing trends of subjective well-being characterising the US (Easterlin in Nations and households in economic growth. Academic Press, New York, 1974; Easterlin and Angelescu in Happiness and growth the world over: time series evidence on the happiness-income paradox, 2009; Easterlin et al. in Proc Natl Acad Sci 107:22463–22468, 2010) raise urgent questions for modern societies: is the erosion of social capital a feature of the more developed and richer countries or is it rather a characteristic aspect of the American society? To test the hypothesis that the erosion of social capital and declining well-being are not a common feature of richer countries, present work focuses on Luxembourg. The main results are: (1) the erosion of social capital is not a legacy of the richest countries in the world; (2) between 1999 and 2008, people in Luxembourg experienced a substantial increase in almost every proxy of social capital; (3) both endowments and trends of social capital and subjective well-being differ significantly within the population. Migrants participate less in social relationships and report lower levels of well-being; (4) the positive relationship between trends of subjective well-being and social capital found in previous literature is confirmed.

Keywords Subjective well-being · Social capital · Easterlin paradox · Economic development · EVS–WVS

1 Introduction

Ten years ago Putnam (2000) stired the American social and political debate describing the changes of several indicators of US social capital (SC) across the previous 30 years. Putnam claims that, since the 70s, the American society has been experiencing a drop in social relationships and in its system of shared values and beliefs.

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These findings raised a considerable debate involving the media, politicians, the public opinion as well as the academic world. Indeed, much of the subsequent research aimed at testing Putnam's evidence. Although the debate is still open, the current state of the literature confirms the decline of US SC.[1]

This evidence raises an urgent question for modern societies: is this erosion a general feature of western societies or is it rather a characteristic aspect of the American one? The answer is controversial. Some recent contributions suggest that the trends of SC in European countries are following various patterns (Morales 2004; Adam 2008; Sarracino 2010, 2011).

Looking at trends between 1980 and 2002 from the World Values Survey (WVS) and the European Social Survey (ESS), Morales (2004) concludes that it is not possible to clearly state whether the general levels of SC have been increasing or decreasing.

Adam (2008) uses trends of generalized trust and membership in voluntary organizations as proxies of SC. He adopts data from WVS in the period 1980–2000. The author finds evidence of a non eroding SC in Europe even if he warns about signs of decline as well as improvement: Adam highlights a decline in trust in individuals and a more complex, but on average positive trend of associational involvement.

Finally, Sarracino (2010) studies the relationship between SC and subjective well-being trends across Europe using data from the WVS and the European Values Study (EVS). The trends from 1980 to 2000 of four different set of proxies of SC observed in eleven western European countries show a persistent loss of confidence in the judicial system, in religious institutions, in armed forces and in police. In the same period, participation in various kind of groups and associations and trust in others increased in many countries.

These results confirm previous findings suggesting that SC follows various patterns across time. In this framework the evidence about Great Britain is worth mentioning. Results suggest that this is the European country—among the considered ones—with the worst trends of SC: 14 out of the 15 adopted proxies have been declining between 1980 and 2000 (Sarracino 2010). This evidence has been further confirmed in subsequent analysis adopting longer time series and a larger sample of countries (Sarracino 2011).

Figures about the trends of SC suggest that two of the richest countries in the world, US and Great Britain, are following negative and significantly different trends of SC than other western societies. Hence, my first research issue is whether this erosion is a legacy of the richest countries in the world.

But this point raises also a second related research question. Some recent works by Bartolini et al. (2011, 2012) and Bartolini and Sarracino (2011) show that the erosion of SC in US resulted in a significant shrinking of people's well-being. The decomposition of the effects of several variables over subjective well-being (SWB) points out that SC—and particularly relational SC—accounts for a large share of the overall SWB variation. Data from the US General Social Survey[2] reveal that, to compensate for the negative effect of the erosion of SC on SWB (keeping SC stable at its 1975 level), the yearly growth rate of US GDP had to be over 10 %. This evidence explains the Easterlin paradox giving SC a new role: a higher income increases happiness as long as it does not undermine SC.

Moreover, Bartolini and Sarracino (2011) show that the correlation between SC and SWB trends is stronger than the one between SWB trends and GDP growth. This evidence makes present research question more intriguing: if the richest countries in the world are characterized by eroding SC and stagnating SWB (Easterlin 1974; Easterlin and Angelescu

[1] Please, refer to Stolle and Hooghe (2004) for a comprehensive review of this literature.

[2] http://www.norc.uchicago.edu/GSS+Website/.

2009; Easterlin et al. 2010), is economic growth failing to provide a higher well-being? In other words, my second question is: are people in richest countries destined to unsatisfactory, but rich lives?

To answer my questions, this article explores the relationship between SC and SWB trends in Luxembourg. Despite its small dimensions and its many peculiarities (the small population size, the high share of migrant workers as well as its special status of city-state), Luxembourg is one of the countries with the highest income per capita.[3] It is, therefore, an interesting subject to test whether the erosion of social capital is a common feature of the wealthiest countries in the world.

But there are also other aspects making Luxembourg an interesting case for study. First, because of the scarcity of data and probably the small dimensions of this country, the literature neglected it and we do not know much about its SC. Present study tries to fill this gap. Second, Luxembourg represents a peculiar experimental case because it is a country in which 40 % of the population is immigrant, with a highly heterogeneous economic, social and cultural background. About 50 % of the total labor force comes from neighboring countries crossing Luxembourg's borders every day. The mix of these elements raises strives and tensions that are currently common to many other European countries and that are liable to hinder both people's well-being and the accumulation of social capital. Therefore, although Luxembourg is in many regards an exception, it is an interesting experimental case to test whether people in rich countries are destined to wealthy but unsatisfactory lives. Its various social fabric—and particularly the high percentage of migrants with their different backgrounds (blue and white collars, low and high skilled, European and non European)—allows us to test the relationship between SC and SWB in more detail.

Finally, the recently released EVS 2008 data, containing observations on SWB in Luxembourg, allows the first assessment of how well-being changed in this country between 1999 and 2008.

To answer my questions I will contrast the trends of SC and SWB in Luxembourg with the ones from a set of other Western European countries. The comparison has a twofold goal: first, to interpret the figures about Luxembourg in relation to the broader picture offered by other European countries;[4] second, checking whether the trends for Luxembourg are an exception in the European landscape. In case the erosions of SC and of SWB are a specific feature of the richest countries in the world, I expect to find stark contrasts between the trends for Luxembourg and its neighbouring countries. Alternatively, if the decline in SC and SWB is just a feature of some societies, I do not expect to find significant differences among European countries and Luxembourg. However, the features characterizing Luxembourg require prudence in drawing conclusions from these comparisons.

The main results of my research are the following:

- between 1999 and 2008, Luxembourg experienced a substantial increase in almost every proxy of SC. These trends are largely in line with those characterizing other western European countries;
- the erosion of SC is not a legacy of the richest countries in the world: the way economic systems are organized affect their social and well-being outcomes.

[3] This figure doesn't change even if, to account exclusively for the output of the national population, we focus on the gross national income, rather than considering gross domestic product. Source: the World Bank, World Development Indicators database, July 2012, http://data.worldbank.org/data-catalog/world-development-indicators.

[4] Please, refer to Sect. 2 for a detailed list of countries included in the study.

Therefore, economic performance can be compatible with a rich social environment and well-being;
- considering the relationship between SC and SWB within Luxembourg, both endowments and trends of the various proxies differ significantly between nationals and immigrants[5]:
  - immigrants report rising trends of trust in other people, while natives report stagnating trends. However, differences in levels between the two groups are not significantly different when compared with the average EU levels;
  - Luxembourg is characterized by high levels of confidence in institutions such as: social security system, education, judicial system and police. However, nationals report lower levels of trust in religious institutions, armed forces and labour unions than other EU citizens. Levels of confidence in press, the parliament and major companies are in line with the European average;
  - Luxemburgian people share a substantially higher participation in groups and associations than immigrants;
  - the vast majority of the positive trends of confidence in institutions in Luxembourg is driven by immigrants;
  - nationals report on average higher levels of satisfaction with their life than immigrants. Accordingly, trends of subjective well-being are growing for the first group, while decreasing for the second one.

The paper is organized as follows. The next section describes the data adopted for the research, whereas some methodological aspects are presented in Sect. 3. Section 4 describes the changes over time of SC and SWB for Luxembourg and contrasts these results with the average trends of other Western European countries. Subsequently, the relationship between SC and SWB is further explored within Luxembourg distinguishing between natives and immigrants. This issue is the topic of Sect. 5, while the last one will draw some concluding remarks.

2 Data

The main limit of present work is the availability of comparable data on SC and well-being over time for Luxembourg. Only a few data-sets provide repeated and cross-country comparable observations for a wide range of proxies of SC over time and only one contains information about Luxembourg over a reasonable time span. Therefore, for the purposes of present study I adopt data from the European Values Study[6] (EVS), a rich source of data on SC and SWB allowing an assessment of the evolution of these two variables for Luxembourg over a period of 9 years—from 1999, when this country was first surveyed, to 2008. The sample size in this case amounts to 1,211 people in 1999 and to 1,610 people in 2008. To avoid sample size bias, data are weighted by the population weight thus making the two waves comparable.

[5] I am aware that migrants should not be considered as a homogeneous group. A long-standing literature starting with Rice and Feldman (1997) up to Helliwell and Wang (2011) informs that the country of origin as well as the time profile of migration have a footprint on migrants' social capital. However, after controlling for these aspects, present results are confirmed.

[6] http://www.europeanvaluesstudy.eu.

An important feature of the EVS is that it provides comparable information also for other western European countries thus allowing to compare Luxemburgian trends with the European ones. Given the focus of the present study, the sample available for the analysis is limited to the two waves when both SC and SWB proxies have been surveyed in Luxembourg—i.e. the fourth (1999–2001) and the fifth (2005–2009) waves. Countries satisfying this requirement are: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Malta, The Netherlands, Portugal, Spain and Sweden. The last wave of the EVS does not contain any information about Great Britain, Italy and Sweden. To include these three countries, data have been retrieved from the fifth wave of the World Values Survey[7] (WVS). EVS and WVS are two wide compilations of surveys collected in more than 80 countries representing more than 80 % of the world's population. They collect information about socio-cultural and political changes on randomly selected samples of 300 to 4,000 individuals per country. In particular the two data-sets provide information on "individual beliefs about politics, the economy, religious, social and ethical topics, personal finances, familiar and social relationships, happiness and life satisfaction".[8] EVS data have been collected in four waves from 1981 to 2008 every 9 years, while WVS has been administered in five waves (1981–1984; 1989–1993; 1994–1999; 1999–2004 and 2005–2007).

Descriptive statistics concerning the observed countries and the missing observations about SC and SWB proxies are available in Table 2, Table 3, Table 5 and Table 6 in the "Appendix".[9]

In present work I refer to SC as "the stock of both *non-market relations* and *beliefs concerning institutions* that affect either utility or production functions."[10] which is an operating definition in line with the one adopted by Putnam (2000) and the OECD (2001). Indeed, the authors adopt Putnam's framework (i.e. networks, norms and trust) comprising all those aspects—material and immaterial—that can contribute to develop mutual trust and co-operation. They emphasize two main features of SC. The first one is non-market relationships among individuals that allow people to communicate with each other and to develop mutual trust. This aspect is referred to as *relational* SC and can be further articulated in intrinsically and extrinsically motivated *relational SC*. They define *intrinsic SC* (alternatively defined as *relational goods*) those elements "that enter into people's utility function"; and *extrinsic SC* those components that do not "directly enter into people's utility functions but are instrumental to something else that may be considered valuable".[11]

The second one is the system of values or beliefs that makes people act consistently and that is usually labelled *non relational* SC. Table 1 provides a summarizing scheme of the various components of SC.

Accordingly, and in line with the majority of the empirical literature on SC (Paxton 1999; Costa and Kahn 2003; Van Schaik 2002), I proxy the *beliefs* component through several reports of confidence in institutions, namely armed forces, police, parliament, civil

[7] http://www.worldvaluessurvey.org. Although EVS and WVS are two separate sources of data, they are directly comparable. On the WVS web-site it is possible to download a four waves integrated data-set from WVS and EVS and a set of instructions on how to integrate WVS with the last wave of EVS data.

[8] Bruni and Stanca (2008, p. 6)

[9] Aggregated descriptive statistics for the observed sample of European countries are omitted for reasons of space, but are available on request to the author.

[10] Bartolini et al. (2011, p. 5)

[11] Bartolini et al. (2011, pp. 5–6)

Table 1 Summarizing scheme of the different constituents of social capital

Relational social capital	Membership
	Unpaid voluntary work
	Trust in others
Non relational social capital	*Confidence in*
	Religious institutions
	Armed forces
	Police
	Press
	Educational system
	Parliament
	Social security system
	Civil service
	Judicial system
	Labor unions
	Political parties
	Major companies

services, press, religious, judicial system, education system, labour unions and major companies. Answers to these questions range on a 1–4 points scale going from *none at all* to *a great deal*. To measure *non-market relations*, I use trust in individuals, membership and unpaid voluntary work in various groups and organizations.[12] Detailed descriptive statistics on membership and unpaid voluntary work by year and by country are provided in the "Appendix" (see Tables 7, 8, 9 and 10). Two new dummy variables have been created: one for group membership and the other one for unpaid voluntary work. Both variables are set equal to 1 if the respondent performs at least one of the mentioned activities and 0 otherwise.

SWB is proxied by reported *life satisfaction*, a variable ranging from 1 = "dissatisfied" to 10 = "satisfied" depending on the answers to the following question: "all things considered, how satisfied are you with your life as a whole these days?". In principle, these data-sets provide also another proxy of subjective well-being, namely reported feelings of happiness. However, for the purposes of this article I will focus only on life satisfaction. The reasons are mainly two: first, life satisfaction is reported on a ten points scale, whereas happiness is on a four point scale. The former is supposed to provide a better and more differentiated information than the second one. Second, although the evidence from the two variables is usually consistent, it is commonly held that happiness provides a more emotional measure of well-being. On the contrary, life satisfaction reflects a more cognitive evaluation of well-being and is therefore regarded as more reliable (Diener 2006).

A major issue in this context is the availability of some of the proxies of SC and missing data. Information about confidence in political parties are completely missing for the fourth wave. The same survey misses data on confidence in political parties, educational system, social security system, judicial system and major companies for Sweden. This aspect

[12] Namely, I consider participation in social welfare service for elderly; religious organization; education, arts, music or cultural activities; human rights; conservation, the environment, ecology, animal rights; sports or recreation; peace movement; organization concerned with health; labour unions; professional associations; youth work; political parties; local political actions; other groups. Each variable is expressed as a dummy variable.

Table 2 Descriptive statistics for Luxembourg—1999

Variable	Mean	SD	Min	Max	Obs	% missing
Trust in others	0.248	0.432	0	1	1,151	0.0495
Membership in at least 1 group	0.582	0.493	0	1	1,211	0
Unpaid voluntary work in at least 1 group	0.302	0.459	0	1	1,211	0
Confidence: religious institutions	2.400	0.990	1	4	1,160	0.0421
Confidence: armed forces	2.496	0.882	1	4	1,128	0.0685
Confidence: police	2.790	0.783	1	4	1,164	0.0388
Confidence: press	2.377	0.787	1	4	1,128	0.0685
Confidence: educational system	2.769	0.785	1	4	1,144	0.0553
Confidence: labor unions	2.487	0.807	1	4	1,074	0.113
Confidence: political parties	2.076	0.807	1	4	1,058	0.126
Confidence: parliament	2.611	0.776	1	4	1,077	0.111
Confidence: civic service	2.582	0.750	1	4	1,086	0.103
Confidence: social security system	2.918	0.707	1	4	1,139	0.0595
Confidence: judicial system	2.622	0.803	1	4	1,113	0.0809
Confidence: major companies	2.273	0.797	1	4	1,075	0.112
confidence: satisfaction with life	7.809	1.872	1	10	1,201	0.00826
Year	1999	0	1999	1999	1,211	0
Age	40.35	16.84	15	86	1,211	0
Age^2	1,912	1,522	225	7,396	1,211	0
Female	0.520	0.500	0	1	1,211	0
Non-Luxembourg	0.373	0.484	0	1	1,211	0
Religiosity	0.692	0.462	0	1	1,211	0
Number of people in the household	2.805	1.090	1	4	1,211	0
Do you have any children?	0.583	0.493	0	1	1,211	0
Marital status	2.621	1.860	1	5	1,211	0
Highest educational level attained	2.396	1.042	1	4	1,211	0
Professional status	7.627	3.652	0	14	1,211	0

reduces the possibilities to compare SC in Luxembourg with the one in other European countries, but does not hinder present econometric analysis since these data are missing completely at random.[13] As such, they are not liable to bias estimates.

Tables 2 and 3 inform that in 1999 some data for Luxembourg are missing. The problem concerns mainly proxies of non-relational SC: the last column on the right reports percentages of missing data. It informs that 10–12 % of the respondents didn't provide data on confidence in political parties, labor unions, civil service, parliament and major companies. Unfortunately, given the subjective character of such variables, imputing the missing data requires strong assumptions that may easily result arbitrary. For that reason and considering the limited number of variables involved, I consider a safe choice using data as such, being prudent in drawing conclusions.

[13] For a more detailed discussion about the pattern of missing observations and their implication for econometric analysis, please refer to Schafer (1997, 1999) and Allison (2001).

Table 3 Descriptive statistics for Luxembourg—2008

Variable	Mean	SD	Min	Max	Obs	% missing
Trust in others	0.311	0.463	0	1	1,529	0.0503
Membership in at least 1 group	0.636	0.481	0	1	1,593	0.0106
Unpaid voluntary work in at least 1 group	0.412	0.492	0	1	1,595	0.00932
Confidence: religious institutions	2.252	0.969	1	4	1,549	0.0379
Confidence: armed forces	2.534	0.865	1	4	1,524	0.0534
Confidence: police	2.895	0.808	1	4	1,587	0.0143
Confidence: press	2.440	0.764	1	4	1,579	0.0193
Confidence: educational system	2.792	0.824	1	4	1,556	0.0335
Confidence: labor unions	2.553	0.794	1	4	1,493	0.0727
Confidence: political parties	2.263	0.769	1	4	1,504	0.0658
Confidence: parliament	2.747	0.764	1	4	1,512	0.0609
Confidence: civic service	2.775	0.735	1	4	1,545	0.0404
Confidence: social security system	3.185	0.671	1	4	1,584	0.0161
Confidence: judicial system	2.805	0.819	1	4	1,540	0.0435
Confidence: major companies	2.365	0.780	1	4	1,500	0.0683
Satisfaction with life	7.881	2.015	1	10	1,608	0.00124
Year	2008	0	2008	2008	1,610	0
Age	39.54	17.50	18	88	1,610	0
Age^2	1,870	1,608	324	7,744	1,610	0
Female	0.506	0.500	0	1	1,610	0
Non-Luxembourg	0.501	0.500	0	1	1,610	0
Religiosity	0.701	0.458	0	1	1,610	0
Number of people in the household	2.865	1.033	1	4	1,610	0
Do you have any children?	0.534	0.499	0	1	1,610	0
Marital status	2.956	1.892	1	5	1,610	0
Highest educational level attained	2.693	1.058	1	4	1,610	0
Professional status	7.534	3.949	0	14	1,610	0

For what concerns remaining variables, the percentages of missing observations are much smaller and, according to the majority of the literature on missing data,[14] they are negligible.

3 Methodological Aspects

To study SC and SWB trends between 1999 and 2008 in Luxembourg, I adopt a very simple methodology regressing the proxies of SC on a "time" variable containing the years 1999 and 2008 (Aguiar and Hurst 2006).

Regression techniques to estimate the coefficient of *time* change depending on the nature of the dependent variable. Provided that the aim of present work is to evaluate the evolution of SC and SWB in Luxembourg and to compare it with other western European countries, I adopt a probit model with robust standard errors reporting marginal effects.

[14] Allison (2001)

Hence, in case of a dummy variable (i.e. trust in others and membership or unpaid voluntary work in groups and organizations) the resulting equation is:

$$SC_i = \begin{cases} 1 & \text{if } z_i > 0, \\ 0 & \text{if } z_i < 0, \end{cases} \tag{1}$$

where the index i stands for individuals; SC_i are the individual dichotomous proxies of SC; and $z_i = TIME_i \cdot \beta + \epsilon_i, \epsilon_i \sim N(0,1)$.

This model is repeated for each country separately.

In case of an ordered dependent variable taking discrete values [i.e. confidence in institutions (from 1 to 4) and satisfaction with life (from 1 to 10)] the most suited regression techniques are ordered probit or logit (see Ferrer-i Carbonell 2005). In this case I opt for an ordered probit model with robust standard errors reporting marginal effects. Assuming that the dependent variable is ordered in K different categories, the resulting model is:

$$Y_i = \begin{cases} 1 & \text{if } z_i \leq 0, \\ 2 & \text{if } 0 < z_i \leq c_1, \\ 3 & \text{if } c_1 < z_i \leq c_2, \\ \vdots & \\ K & \text{if } c_{K-1} < z_i. \end{cases} \tag{2}$$

where $0 < c_1 < c_2 < \cdots < c_{K-1}$; the index i stands for individuals; Y_i stands for the various ordered dependent variables; $z_i = TIME_i \cdot \beta + \epsilon_i, \epsilon_i N(0,1)$ and c_{K-1} are unknown parameters to be estimated.

Also in this case, I run a separate regression for each country.

In both models 1 and 2 I have included population weights to allow the comparability of samples in the two waves. Marginal effect of the coefficient of the *TIME* variable reflects the slope of the line that best fits the distribution over time of its observations. Hence, they can be interpreted as the average yearly change of the dependent variable.

To check whether the trends from Eqs. 1 and 2 are not the outcome of peculiar unobserved individual or social features, I run a further set of regressions including different groups of socio-demographic control variables. These are: age and age squared/100; gender; number of children; religiosity; marital and professional status and educational level. This is a standard set of control variables in this kind of studies. Their effects on SWB have been largely studied in previous works (Blanchflower and Oswald 2008, 2004; Oswald 1997; Clark and Oswald 1994) and they are usually included to account for individual unobserved heterogeneity. In particular, age squared/100 is included to control for eventual non-linearities in the relationship between age and well-being. Dividing the squared term by 100 makes the interpretation more intuitive: whenever the coefficients of the two age variables are equal and of opposite sign, than the low point of the U-curve happens to be at age 50. A control for the religiosity of the respondent is included because, as clearly put forward by Lim and Putnam (2009), attending the church enhances people's well-being by promoting participation in religion related groups. To account for these differences I included a dummy variable set to 1 if the respondent declares to attend religious services at least once per month, 0 otherwise.

Overall, results from the univariate regressions are robust to the inclusion of all the listed variables.[15] This evidence suggests that the trends of SC and SWB are independent from the specific socio-demographic composition of the sample.

[15] See Tables 11–26 in the "Appendix".

Table 4 Trends of SC and SWB proxies for Luxembourg and for a sample of western European countries

	Average annual growth between 4th and 5th wave					
	Luxembourg			Sample of European countries		
	Coeff.	Robust SE	Obs	Coeff.	Robust SE	Obs
Trust in others	0.005	(0.002)**	2,631	0.004	(0.001)***	38,863
Membership	0.005	(0.002)**	2,754	−0.009	(0.001)***	40,367
Unpaid vol. work	0.013	(0.002)***	2,756	−0.002	(0.001)***	40,367
Confidence in institutions						
Religious	−0.013	(0.005)**	2,660	−0.008	(0.001)***	39,253
Armed forces	0.006	(0.005)	2,604	0.022	(0.001)***	38,882
Police	0.014	(0.005)**	2,703	0.016	(0.001)***	39,855
Press	0.011	(0.005)**	2,664	−0.006	(0.001)***	39,454
Educational system	0.002	(0.005)	2,653	−0.003	(0.001)*	35,501
Political parties	0.023	(0.006)***	2,522	NA	NA	20,084
Labor unions	0.003	(0.006)	2,530	0.009	(0.001)***	37,834
Parliament	0.009	(0.006)*	2,547	0.008	(0.001)***	38,723
Social security system	0.046	(0.006)***	2,679	0.014	(0.001)***	35,326
Civil service	0.026	(0.006)***	2,589	0.014	(0.001)***	38,671
Judicial system	0.027	(0.005)***	2,609	0.018	(0.001)***	38,196
Major companies	0.010	(0.005)*	2,536	−0.006	(0.002)***	30,883
Subjective well-being	0.005	(0.005)	2,760	−0.006	(0.001)***	40,175

Marginal effects of weighted probit/ordered probit estimates with robust standard errors in parentheses. * Significant at 10 %; ** significant at 5 %; *** significant at 1 %

4 Results

I report and discuss results from several regressions relative to Eqs. 1 and 2. Marginal effects of the *TIME* variable over SC and SWB proxies are summarized in Table 4, while detailed estimates are reported in Tables 11–26 in the "Appendix".

4.1 Trends of Relational Social Capital

The first three lines of Table 4 report marginal effects of coefficients for three proxies of *relational SC* in Luxembourg and for a sample of western European countries. Figures suggest that between 1999 and 2008 Luxembourgians increased their participation in groups and associations and trust in others raised. However, a more careful analysis unveals some peculiar patterns.

Between 1999 and 2008 the number of people in Luxembourg declaring to trust other people increased on average by 0.005 points on a 0–1 scale. That is to say a 0.5 % increase each year. This result is in line with what has been happening on average in western Europe: in the same period, the percentage of European citizens declaring to trust others increased by 0.4 % on an yearly basis.

Figure 1 reports average levels of the three proxies of relational SC in 1999 and 2008 showing that levels of *trust in others* in Luxembourg are steadily lower than the average

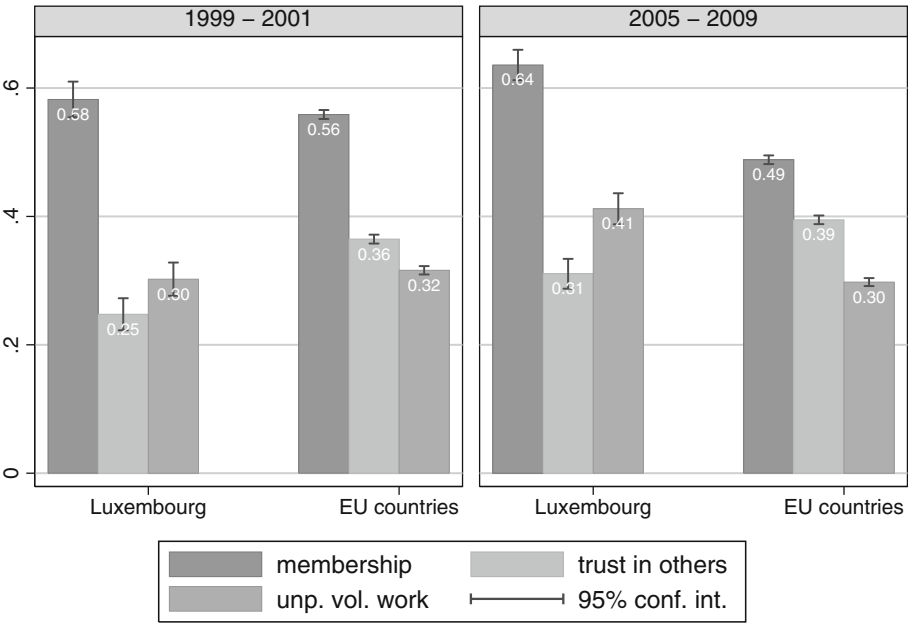

Fig. 1 Average levels of relational social capital proxies for Luxembourg and western European countries. Proxies are listed on the x-axis. From left to right, the chart reports membership in groups and associations, unpaid voluntary work in groups and associations and trust in others. The y-axis ranges on a 0–1 scale reflecting the original scaling of each variable

European one: in 1999 25 % of people in Luxembourg declared to trust other people and in 2008 this amount increased to 31 %. These levels are significantly lower than the European average: 36 % in 1999 and 39 % in 2008.

Overall, *trust in others* has been increasing in all western Europe. In this context, Luxembourg shows lower endowments, but stronger growth rates.

At the same time, people in Luxembourg increased their participation in groups and associations: both variables of *membership* and *unpaid voluntary work* in groups and associations increased in the considered period (+0.5 and +1.3 % respectively). This figure is at odds with what other European countries have been experiencing. Coefficients in the second and third line of Table 4 suggest that in the same period European countries experienced a decrease in *membership* (−0.8 %) and in involvement in *unpaid voluntary work* (−0.4 %). In 1999 the levels of both variables for Luxembourg and, on average, for Europe were very close: 58 % of people in Luxembourg declared to be member of at least one group or organization versus an European average of 56 %. Similarly, 30 % of Luxemburgian people were performing unpaid voluntary work versus an average of 32 %. From this point onward, the trends diverged: they have been shrinking for most western European countries and increasing for Luxembourg (see Fig. 1).

Between 1999 and 2008 Luxemburgian active participation in groups and associations grew up about three times faster than the European one. In a period of widespread decline of involvement in groups and associations, Luxembourg is characterized by positive trends.

4.2 Trends of Non-relational Social Capital

The remaining lines of Table 4 consider the evolution in time of non-relational SC as proxied by confidence in institutions.

Data suggest that confidence in *religious institutions* significantly declined all over western Europe. The rate of this decrease appears to be higher in Luxembourg than in other European countries. It is worth recalling that variables about *confidence in institutions* vary on a 1 to 4 point scale. In this case an yearly decrease by −0.013 points means a drop by −0.32 % per year.

In the same period, *confidence in armed forces, educational system and labor unions* stagnated. In all these cases variations across time are not significantly different from zero, suggesting a flat trend. However, this doesn't lead to the conclusion that Luxemburgian people have low levels of trust in these institutions. Figures 2 and 3 show that levels of confidence in armed forces and in labour unions are generally low, while people reveal to have quite high levels of confidence in the educational system. This figure is in line with the western European average.

On the other side, between 1999 and 2008 confidence of Luxemburgian people in *political parties* raised by 0.023 points per year, an increase of about 0.57 %.[16]

Finally, all the remaining institutions report positive and significant trends. In particular, the most impressive trend is the one of confidence in *social security system*. This institution is by far the most successful in Luxembourg ranking well above the European average: in 1999 17.4 % of respondents declared to be highly confident in *social security system*. This percentage jumped to 32 % in 2008. At the same time the percentage of those declaring to have only a few or not at all confidence in this institution dropped by 25 % in 1999 to 13 % in 2008. Overall, the average annual growth of confidence in *social security system* is about 1.15 %, almost three time higher than the European average (0.35 %).

At the same time also confidence in *civil service*, *judicial system* and *political parties* have been increasing significantly and well beyond the average European growth rate. The percentage of people declaring to be very confident in Luxemburgian *civil service* rose from 58 % in 1999 to 70 % in 2008, while those declaring to have low levels of confidence went from 40 to 29 %. Overall, confidence in this institution has been growing by 0.65 % on a yearly basis (Fig. 4).

The years between 1999 and 2008 in Luxembourg are also characterized by a strong growth of confidence in the *judicial system* (on average 0.67 % per year). In this case, the growth rate is almost two times higher than the European average. Furthermore, in 1999 the percentage of respondents declaring to trust a lot or quite a lot the *judicial system* was 60 % versus an European average of about 49 %. In the same period those declaring to have low levels of trust in justice were 40 % in Luxembourg and 41 % in Europe. Almost ten years later, the group of people trusting this institution increased to 70 % in Luxembourg and 57 % in Europe, while those not trusting it reduced to 30 and 49 %, respectively.

In line with the trends of other European countries, Luxembourg experiences also an increase of confidence in *police* with an annual growth of about 0.35 %. This growth is only slightly lower than the European average (0.42 %).

Finally, in a period characterized by declining European trends of confidence in *major companies* and in *press*, Luxemburgian trends increase on average by 0.26 % per year.

[16] Unfortunately, this variable is not available for other European countries (see Table 5 in the "Appendix").

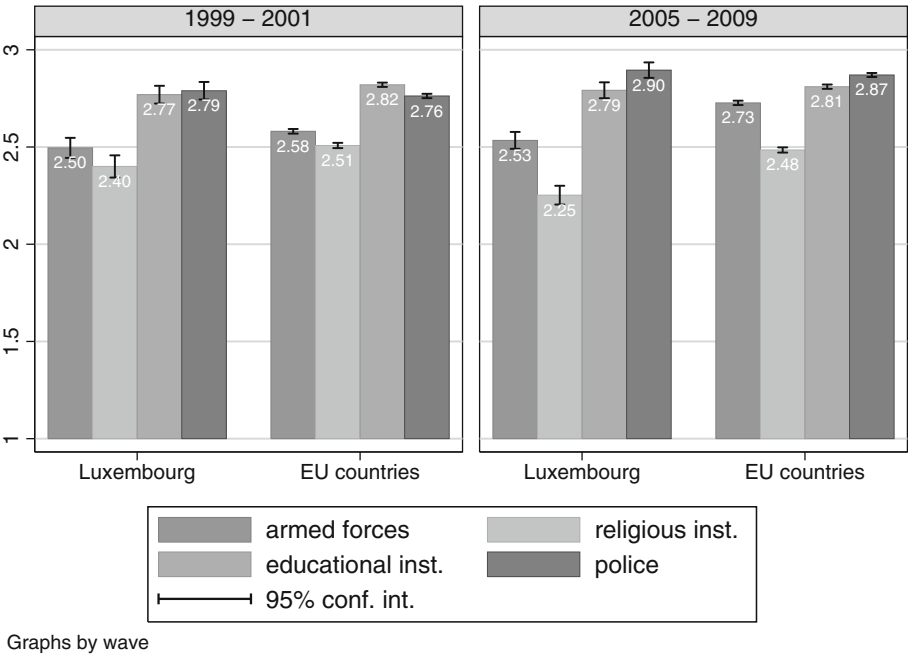

Fig. 2 Average levels of non-relational social capital proxies for Luxembourg and western European countries. Proxies are listed on the x-axis. From *left* to *right*, the chart reports confidence in: religious institutions, armed forces, police and educational institutions. The y-axis ranges from 1 (not at all) to 4 (a great deal) following the original scaling of each variable

Following some recent results from SWB literature pointing to a positive correlation between SC, particularly relational SC, and SWB trends, we should expect that also Luxemburgian SWB should have increased over time (Helliwell 2008; Helliwell et al. 2009; Becchetti et al. 2008, 2009; Bartolini et al. 2012).

Surprisingly, the evidence contradicts this hypothesis: the last line of Table 4 shows that the trend of SWB in Luxembourg is not significantly different from zero. This seems to confirm that rich countries are destined to stagnating trends of well-being and that SWB trend is independent from SC trends. However, this is not all the story: while the literature suggests that economic growth is accompanied by the decline of SWB and the erosion of SC, Luxemburgian SC flourishes. There is something more here to be explained.

5 Differences Between Immigrants and Luxemburgian People

Figures from Tables 11–26 provide some information to look deeper into this puzzle. Besides the coefficient of the time variable, some control variables are showing peculiar patterns common to all the proxies of SC and SWB.

In many cases we find a U-shaped relationship between some proxies of SC and age. This is the case of trust in others, membership and unpaid voluntary work in groups and associations, confidence in religious institutions, in armed forces, in educational system, in major companies and judicial system. These figures suggest that SC reduces during the early stages of life reverting in late adulthood.

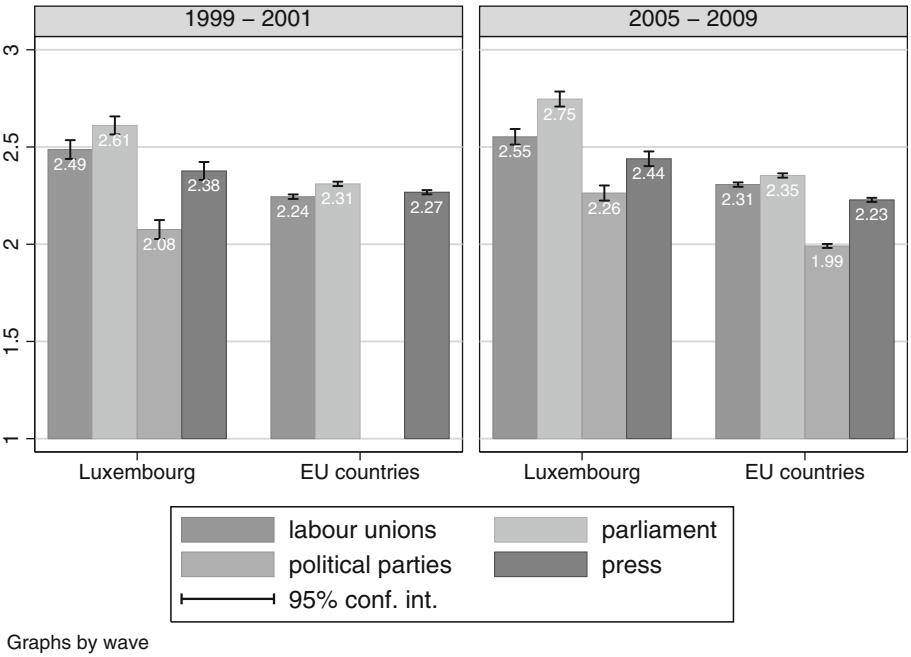

Fig. 3 Average levels of non-relational social capital proxies for Luxembourg and western European countries. Proxies are listed on the x-axis. From *left* to *right*, the chart reports confidence in: press, labor unions, political parties and parliament. The y-axis ranges from 1 (not at all) to 4 (a great deal) following the original scaling of each variable

Consistently with the literature, the same relationship arises between SWB and age. Indeed, even if the age variable in Table 26 is not significant, its squared term/100 is significant confirming the U-shaped relationship. This result is summarized in Fig. 5 reporting the scatterplot of predicted values of SWB and age and their curvilinear relationship.

Moreover, being a woman is significantly and negatively correlated with participation in groups and associations and confidence in civic service, major companies and political parties.

The educational level of the respondent is in many cases significantly correlated with SC proxies. For example, people with secondary or higher level of education report on average higher trust in others and participation in associational life (see Tables 11, 12 and 13). By the same token, education is often negatively correlated with confidence in institutions. More educated people are less confident in armed forces and in religious institutions, while reporting higher trust in the parliament. Education is negatively correlated with confidence in labour unions, police and major companies. People with lower levels of education are less confident in the judicial and the social security systems. Interestingly, confidence in educational system is negatively correlated with the educational level of the respondent. The higher the educational attainment, the less negative is the confidence.

Among the proxies of professional status, belonging to military professions or being a student is highly and negatively correlated with confidence in educational system (see Table 16). Similarly, being a student, a white collar or a trader is positively correlated

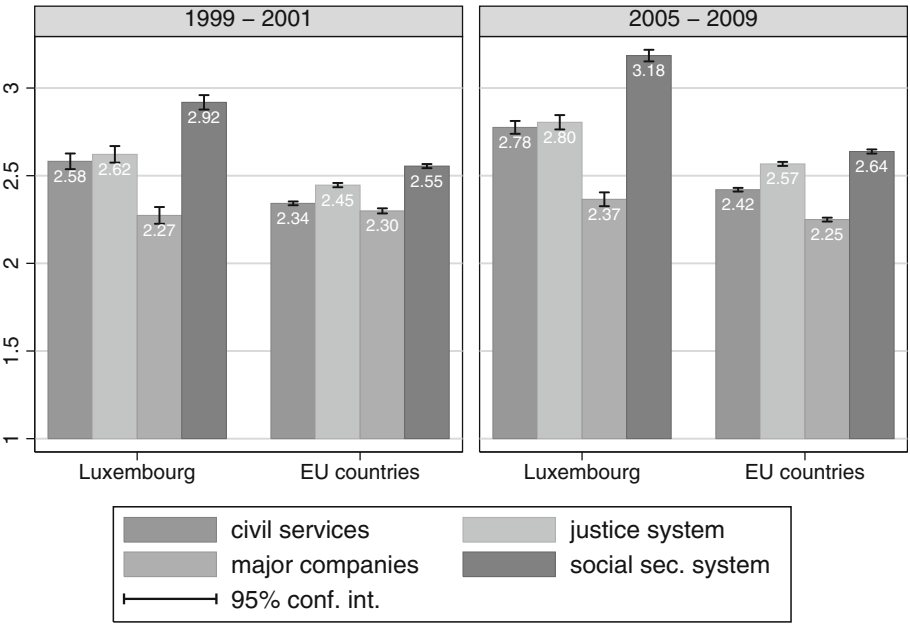

Fig. 4 Average levels of non-relational social capital proxies for Luxembourg and western European countries. Proxies are listed on the x-axis. From *left* to *right*, the chart reports confidence in: civil services, social security system, justice system and major companies. The y-axis ranges from 1 (not at all) to 4 (a great deal) following the original scaling of each variable

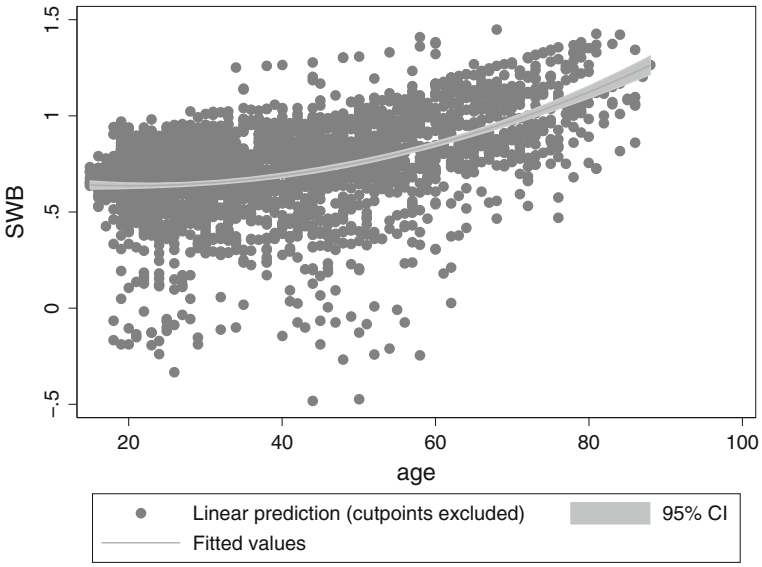

Fig. 5 U-shaped relationship between predicted values of life satisfaction and age

with trust in others and membership in groups and associations, while only being a student is correlated with voluntary activities. People with handicap report less confidence in religious institutions, while being an unskilled worker is positively correlated with higher confidence in armed forces. Civil servants, students and unskilled workers report higher confidence in civic service. Finally, almost all categories excluding military professions are positively correlated with confidence in major companies and subjective well-being.

A more interesting pattern arises if we consider correlations between being immigrant, SC and SWB. In this case, data suggest that there aren't significant differences between nationals and immigrants in the endowments of *trust in others* and *confidence in labour unions*. On the contrary, being immigrant is significantly and negatively correlated with *participation in groups and associations* (−0.24), *unpaid voluntary work* (−0.22), *confidence in political parties* (−0.14) and *SWB* (−0.26). These relationships hold even after including control variables.

Correlation with lower levels of relational SC can be explained in many ways. A plausible one is that people coming from abroad have more difficulties in building networks of relationships and actively participating in the social life of a new country. Also the result about political parties may reflect the fact that immigrants are less involved in local social and political life.

Some other patterns are also worth mentioning: being immigrant is positively correlated with 11 out of 12 variables of confidence in institutions. Immigrants are significantly more confident than natives in *religious institutions, armed forces, educational system, press, police, parliament, civic service, social security system, major companies and judicial systems*.

Summarizing, being immigrant is positively correlated with confidence in institutions and negatively correlated with relational proxies of SC and with SWB.

These differences cast the doubt that the evolution of SC and SWB over time might be different between natives and immigrants. Differences in levels may imply differences in trends.

To provide some insights in this regard I run a further set of regressions in which I include among the regressors the interaction between the time variable and the immigrant dummy variable.[17] My aim is to test the hypothesis that the trends of SC and SWB proxies for immigrants are significantly different from the Luxemburgian ones. Formally, I estimate a probit model:

$$SC_i = \begin{cases} 1 & \text{if } z_i > 0, \\ 0 & \text{if } z_i < 0, \end{cases} \tag{3}$$

where $z_i = TIME_i \cdot \beta + non - Lux_i \cdot \beta_2 + TIME_i \cdot \beta_3 \cdot non - Lux_i + X_i \cdot \gamma + \epsilon_i, \epsilon_i \sim N(0,1)$. and an ordered probit model:

[17] In this work I am referring to migrants as a homogeneous group. However, it is well established that the country of origin and the profile of migration affect people's attitudes, particularly for what concerns people's well-being and social capital. This is true also for Luxembourg (Valentova and Berzosa 2012). However, further tests controlling for differences in trends and levels of SC and SWB of migrants from various countries and with different migratory profiles (first or second generation migrants and offsprings of mixed couples) reveal that these different specifications do not alter present results. Figures are omitted for brevity, but they are available on request to the author.

$$Y_i = \begin{cases} 1 & \text{if } z_i \leq 0, \\ 2 & \text{if } 0 < z_i \leq c_1, \\ 3 & \text{if } c_1 < z_i \leq c_2, \\ \vdots & \\ K & \text{if } c_{K-1} < z_i. \end{cases} \tag{4}$$

where $0 < c_1 < c_2 < \cdots < c_{K-1}$.
$z_i = TIME_i \cdot \beta + non - Lux_i \cdot \beta_2 + TIME_i \cdot \beta_3 \cdot non - Lux_i + X_i \cdot \gamma + \epsilon_i, \epsilon_i N(0,1)$
c_{K-1} are unknown parameters to be estimated.

The choice of the model depends on the quality of the dependent variables, X_i is a vector of control variables as listed in Sect. 3 and index i stands for individuals. Each model from Eqs. 3 and 4 is run for each country separately. Results are reported from Tables 27–32 in the "Appendix".

The picture arising is significantly richer than the one resulting from Sect. 4. The interaction term shows that trends of 8 variables out of 16 change their sign. The positive trend of *trust in others* is entirely driven by immigrants. Similarly, immigrants report increasing confidence in *religious institutions*, *police*, *press*, *parliament*, *civil service* and *major companies*. Between 1999 and 2008, confidence of natives in the same institutions either didn't significantly change or declined. This is the case, for example, of confidence in *educational system* whose trend didn't grow up over time: results in the third and fourth column of Table 29 show that natives' confidence in this institution has been decreasing from 1999 to 2008, while both the interaction term and the dummy on nationality suggest that immigrants report both positive trends and higher levels of confidence.

This new set of regressions brings about further evidence informing that much of the positive Luxemburgian trends of confidence in institutions is driven by immigrants. This conclusion is contraddicted in mainly two cases: (1) people in Luxembourg, and particularly nationals, experienced an increase in confidence in *political parties*, *social security system* and *judicial system*; (2) *membership* and *unpaid voluntary work* show that immigrants have significantly lower levels of participation in social life than Luxemburgian people and, as reported by the interaction term, their trends are not significantly different from zero.

Hence, after controlling for immigrants, the evolution of SC between 1999 and 2008 appears significantly different than before: the various proxies of SC followed different trajectories in different groups of the population. Non relational proxies of SC are performing particularly well among immigrants, while relational SC proxies are considerably growing among natives.

What has been happening to SWB?

Table 32 shows that SWB of natives turns out to be increasing over time. Both the equation with and without controls (columns 1 and 2, respectively) reveal that well-being has been growing up by 1.1 % yearly. Indeed, in 1999 natives declaring to be very satisfied with their life (the top 2 categories) where about 40 % of the total sample. In 2008 this percentage rose to 49 %. At the same time the percentage of those reporting less satisfaction with their life (the bottom 2 categories) basically remained constant (about 1.8 % of the sample).

On the other hand, immigrants have not significantly different levels of satisfaction with their own life, but their trend of SWB is about 1.8 % lower than the Luxembourgian one with a net decreasing trend of about 0.6 % per year.

This evidence suggests a different conclusion. According to the hypothesis formulated at the beginning from the literature on SC and SWB, nationals report growing participation in groups, associations and unpaid voluntary work and, consistently, rising SWB. Immigrants, who are characterized by both lower levels and trends of relational SC, but growing trends of confidence in institutions, report slightly negative trends of satisfaction with their lives. This evidence is compatible with previous results from the literature on SWB pointing out a positive relationship between social connections and SWB. Immigrants may have been enjoying their lives less than their fellow citizens in Luxembourg because they are less involved in the social life of the country.

6 Conclusions

This paper describes the evolution of several proxies of SC and SWB in Luxembourg between 1999 and 2008 using the available information from EVS-WVS data-base. Adopting a very simple regression technique, it contributes to the literature in several ways: (1) it explores the relationship between SC and SWB trends in rich countries testing: (a) whether the erosion of SC is an unavoidable feature of the richest and most modern countries in the world and (b) whether people in rich countries shouldn't expect any well-being improvements in their lives; (2) providing figures about what happened to the Luxemburgian SC and SWB. Beside these two main aspects, present research provides fruitful information about the Luxembourgian society in several ways: it informs policies aimed at improving people's well-being; it highlights what are people's feelings about many fields of social life: schooling, justice, social security, politics and religion. Furthermore, it informs about the differences among all these dimensions within the Luxembourgian society. Finally, even if Luxembourg is in many regards an exception in the international landscape, these results are consistent with the interpretation that the quality of the chosen development path matters for people's quality of life. In other words, positive economic performances do not necessarily come at expenses of SC and well-being.

The overall result from the analysis of available data betwen 1999 and 2008 depicts Luxemburgian society as rich in various forms of SC, from involvement in social life and activities to trust in others and confidence in institutions. Across the investigated nine years almost every proxy of SC has been increasing, confidence in *religious institutions* being the only proxy with a negative evolution.

Luxemburgian SC performs very well also when considered in an international perspective. The same analysis run over a sample of 15 western European countries reveals that in the same period various proxies of SC have been following mixed patterns: on average, proxies of participation and social involvement have been decreasing and European citizens have been loosing confidence in *religious institutions*, *press*, *political parties* and *major companies*.

In the same period, people's perceived well-being has been decreasing across western Europe, while, for what concerns Luxembourg, the trend doesn't appear to be significantly different from zero. At a first glance, this evidence stands at odds with previous results from the literature. While European average trends of SC are compatible with worsening people's well-being, the flourishing Luxemburgian SC should be accompanied by increasing subjective well-being. Unfortunately, this doesn't seem to be the case.

A deeper analysis accounting for the large percentage of immigrants within the Luxembourgian society reveals that this picture is partial and that SC and SWB trends have to be evaluated in the light of the specific composition of the society. Indeed, both trends

and levels of various forms of SC and SWB are substantially different between natives and immigrants. Present results suggest that:

1. the positive evolution of *trust in others* in Luxembourg is entirely driven by immigrants. Natives do not show any significant increase in this respect;
2. on the contrary, natives have been significantly increasing their participation in social activities and voluntary groups and associations, while immigrants report both lower endowments and non-varying trends of this form of relational SC;
3. the positive trends of confidence in *police*, *press*, *parliament*, *civic service* and *major companies* are led by immigrants. Political parties, social security system and judicial system have been gaining increasing trust from both natives and immigrants, with the last group reporting higher coefficients. Two further cases are worth highlighting:
   (a) confidence in *educational system* grows up only for immigrants, while the trend turns out to be negative for natives;
   (b) negative trend of confidence in *religious institutions* is mainly driven by natives, while immigrants report slightly positive trends.
4. natives enjoy higher levels and growing trends of satisfaction with their lives, whereas immigrants are experiencing decreasing trends.

These results hold also after controlling for differences in the countries of origin and in the patterns of the time profile of migration.

A first conclusion of this work is that various forms of SC grew up in a non uniform way across people in Luxembourg. With the only exception of *trust in others*, natives enjoy higher participation in relational SC, while immigrants report high levels of trust in institutions, that is to say non-relational SC.

Secondly, this research found further evidence about the positive relationship between trends of SC and SWB. Consistently with previous results from the literature, positive trends of relational SC are associated with growing trends of well-being, while non-relational SC trends are less correlated with SWB trends.

At any rate, the availability of limited time-series data prevents a comparison over a longer time-period and does not allow an analysis of the causes of the variations. Indeed, there can be many possible factors affecting SC: the small dimensions of the country, the low number of inhabitants, its opulence, the institutional framework or even the presence of European institutions. Unfortunately, available data are not sufficient to explore these causal links.

Independently from these constraints, present research pointed out some peculiar features of the Luxemburgian society that are not immediately apparent and provided some evidence compatible with the hypothesis that richer societies are not destined to SC erosion and to unhappy lives. It is possible to envisage social and economic organizations compatible with high economic performances, enjoyable lives and a good social environment.

Still, Luxembourgian system turns out to be imperfect since this society seems to be not inclusive showing a sort of polarization between immigrants and residents. Whether this is a real social issue or just a matter of time is a question requiring a separate analysis. The future availability of longer and possibly richer time-series data will allow researchers to deal with this issue.

Present work just set the scene for broader research questions and provided evidence that Luxembourg represents a peculiar case that is worth studying for the insights it can provide for policy-making.

Appendix

See Tables 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 and 32.

Table 5 Aggregate descriptive statistics for the sample of European countries—4th wave

Variable	Mean	SD	Min	Max	Obs	% missing
Membership in groups and associations	0.559	0.497	0	1	19,520	0
Unpaid voluntary work in groups and associations	0.316	0.465	0	1	19,520	0
Trust in others	0.365	0.481	0	1	18,686	0.0427
Confidence: churches	2.508	0.951	1	4	19,007	0.0263
Confidence: armed forces	2.581	0.829	1	4	18,851	0.0343
Confidence: the police	2.762	0.787	1	4	19,284	0.0121
Confidence: educ. system	2.820	0.755	1	4	18,176	0.0689
Confidence: the press	2.268	0.770	1	4	19,170	0.0179
Confidence: labour unions	2.244	0.803	1	4	18,399	0.0574
confidence: political parties	–	–	–	–	0	1
Confidence: parliament	2.310	0.785	1	4	18,771	0.0384
Confidence: civil services	2.342	0.750	1	4	18,752	0.0393
Confidence: social sec. system	2.555	0.799	1	4	18,043	0.0757
Confidence: justice system	2.446	0.833	1	4	18,011	0.0773
Confidence: major companies	2.299	0.796	1	4	11,547	0.408
Satisfaction with your life	7.505	1.985	1	10	19,385	0.00692

Table 6 Aggregate descriptive statistics for the sample of European countries—5th wave

Variable	Mean	SD	Min	Max	Obs	% missing
Membership in groups and associations	0.488	0.500	0	1	20,910	0
Unpaid voluntary work in groups and associations	0.298	0.457	0	1	20,910	0
Trust in others	0.395	0.489	0	1	20,235	0.0323
Confidence: churches	2.485	0.969	1	4	20,303	0.0290
Confidence: armed forces	2.727	0.811	1	4	20,086	0.0394
Confidence: the police	2.870	0.760	1	4	20,628	0.0135
Confidence: educ. system	2.810	0.751	1	4	17,383	0.169
Confidence: the press	2.228	0.764	1	4	20,341	0.0272
Confidence: labour unions	2.307	0.808	1	4	19,488	0.0680
Confidence: political parties	1.991	0.742	1	4	20,138	0.0369
Confidence: parliament	2.354	0.798	1	4	20,005	0.0433
Confidence: civil services	2.420	0.757	1	4	19,971	0.0449
Confidence: social sec. system	2.638	0.795	1	4	17,335	0.171
Confidence: justice system	2.567	0.838	1	4	20,239	0.0321
Confidence: major companies	2.250	0.784	1	4	19,385	0.0729
Satisfaction with your life	7.401	1.970	1	10	20,852	0.00277

Table 7 Distribution of people participating in associations in Luxembourg by wave

Wave	1999	2008
Luxembourg		
Member: belong to social welfare service for elderly	0.14	0.13
Member: belong to religious organization	0.1	0.07
Member: belong to education, arts, music or cultural activities	0.17	0.16
Member: belong to labour unions	0.12	0.17
Member: belong to political parties	0.06	0.06
Member: belong to local political actions	0.06	0.06
Member: belong to human rights	0.11	0.09
Member: belong to conservation, the environment, ecology, animal rights	0.11	0.12
Member: belong to professional associations	0.06	0.1
Member: belong to youth work	0.08	0.07
Member: belong to sports or recreation	0.25	0.32
Member: belong to women's group	0.06	0.04
Member: belong to peace movement	0.02	0.03
Member: belong to organization concerned with health	0.08	0.08
Member: belong to other groups	0.04	0.06

The first column refers to the different associations, while the following ones refer to each wave separately

Table 8 Distribution of people participating in associations in the selected European countries by wave

Wave	4th wave	5th waves
Sampled European countries		
Member: belong to social welfare service for elderly	0.079	0.087
Member: belong to religious organization	0.175	0.175
Member: belong to education, arts, music or cultural activities	0.138	0.111
Member: belong to labour unions	0.160	0.152
Member: belong to political parties	0.055	0.054
Member: belong to local political actions	0.036	0.036
Member: belong to human rights	0.051	0.050
Member: belong to conservation, the environment, ecology, animal rights	0.076	0.082
Member: belong to professional associations	0.071	0.069
Member: belong to youth work	0.045	0.037
Member: belong to sports or recreation	0.202	0.181
Member: belong to women's group	0.032	0.032
Member: belong to peace movement	0.013	0.010
Member: belong to organization concerned with health	0.046	0.046
Member: belong to other groups	0.076	0.062

The first column refers to the different associations, while the following ones refer to each wave separately

Table 9 Distribution of people performing unpaid voluntary work in associations in Luxembourg by wave

Wave	1999	2008
Luxemburg		
Voluntary work: unpaid work social welfare service for elderly, handicapped or d	0.07	0.09
Voluntary work: unpaid work religious or church organization	0.06	0.06
Voluntary work: unpaid work education, arts, music or cultural activities	0.08	0.11
Voluntary work: unpaid work labour unions	0.03	0.06
Voluntary work: unpaid work political parties or groups	0.03	0.04
Voluntary work: unpaid work local political action groups	0.03	0.05
Voluntary work: unpaid work human rights	0.05	0.04
Voluntary work: unpaid work environment, conservation, animal rights	0.04	0.06
Voluntary work: unpaid work professional associations	0.01	0.05
Voluntary work: unpaid work youth work	0.06	0.05
Voluntary work: unpaid work sports or recreation	0.08	0.19
Voluntary work: unpaid work women's group	0.02	0.02
Voluntary work: unpaid work peace movement	0.01	0.01
Voluntary work: unpaid work organization concerned with health	0.03	0.04
Voluntary work: unpaid work other groups	0.02	0.04

The first column refers to the different associations, while the following ones refer to each wave separately

Table 10 Distribution of people performing unpaid voluntary work in associations in the selected European countries by wave

Wave	4th wave	5th wave
Sampled European countries		
Voluntary work: unpaid work social welfare service for elderly, handicapped or d	0.053	0.064
Voluntary work: unpaid work religious or church organization	0.071	0.067
Voluntary work: unpaid work education, arts, music or cultural activities	0.065	0.069
Voluntary work: unpaid work human rights	0.024	0.029
Voluntary work: unpaid work environment, conservation, animal rights	0.024	0.024
Voluntary work: unpaid work sports or recreation	0.025	0.022
Voluntary work: unpaid work peace movement	0.024	0.016
Voluntary work: unpaid work organization concerned with health	0.026	0.023
Voluntary work: unpaid work labour unions	0.027	0.031
Voluntary work: unpaid work professional associations	0.037	0.032
Voluntary work: unpaid work youth work	0.086	0.108
Voluntary work: unpaid work women's group	0.016	0.018
Voluntary work: unpaid work political parties or groups	0.011	0.005
Voluntary work: unpaid work local political action groups	0.031	0.028
Voluntary work: unpaid work other groups	0.042	0.051

The first column refers to the different associations, while the following ones refer to each wave separately

Table 11 Trust in others

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.004*	0.005**	0.002
Age		0.009***									0.014***
$Age^2/100$		−0.008**									−0.010**
Female (d)			−0.017								0.017
Non-Luxembourg (d)				0.010							0.035
Religiosity					−0.001						−0.001
hhsize==2 (d)						0.021					−0.023
hhsize==3 (d)						0.037					0.007
hhsize==4 (d)						0.016					−0.010
Do you have any children? (d)							0.008				0.004
Separated (d)								−0.065			−0.071
Divorced (d)								−0.067*			−0.101**
Widowed (d)								−0.078*			−0.102**
Married (d)								0.028			0.011
Professional educ. (d)									0.025		0.029
Secondary educ. (d)									0.083***		0.072**
Higher educ. (d)									0.207***		0.151***
Military professions (d)										−0.005	0.156
Policy-makers (d)										0.298***	0.193*
Intellectual professions (d)										0.292***	0.206**
Physic and technic professions (d)										0.193**	0.162*
Civil servants (d)										0.167*	0.147
Traders, merchants and vendors (d)										0.219**	0.227**
Skilled workers (d)										0.111	0.146
Artisanal workers (d)										−0.005	0.007

Table 11 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Factory workers (d)										0.080	0.122
Unskilled workers (d)										0.045	0.061
Retired (d)										0.145*	0.061
Houseworker (d)										0.035	−0.020
Student (d)										0.157*	0.285***
Handicapped (d)										−0.043	−0.073
Observations	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631	2,631
Pseudo R^2	0.002	0.005	0.002	0.002	0.003	0.003	0.002	0.007	0.023	0.029	0.055

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 12 Membership in groups and associations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	0.005**	0.005**	0.005**	0.006***	0.005**	0.005**	0.005**	0.005**	0.004*	0.005*	0.005**
Age		−0.002									0.010*
$Age^2/100$		0.002									−0.011**
Female (d)			−0.077***								−0.061**
Non-Luxembourg (d)				−0.244***							−0.239***
Religiosity					−0.000						−0.001
hhsize==2 (d)						0.012					0.030
hhsize==3 (d)						0.006					0.043
hhsize==4 (d)						0.022					0.079*
Do you have any children? (d)							−0.063***				−0.013
Separated (d)								−0.175*			−0.159
Divorced (d)								−0.067			−0.042
Widowed (d)								−0.041			0.058
Married (d)								−0.059**			−0.014
Professional educ. (d)									0.101***		0.061*
Secondary educ. (d)									0.177***		0.129***
Higher educ. (d)									0.208***		0.158***
Policy-makers (d)										0.140*	0.066
Intellectual professions (d)										0.242***	0.154**
Physic and technic professions (d)										0.259***	0.195***
Civil servants (d)										0.145**	0.090
Traders, merchants and vendors (d)										0.087	0.076
Skilled workers (d)										0.267***	0.217***
Artisanal workers (d)										0.102	0.118*
Factory workers (d)										0.018	0.002

Table 12 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Unskilled workers (d)										0.006	0.066
Retired (d)										0.179***	0.167**
Houseworker (d)										0.035	0.028
Student (d)										0.231***	0.178***
Handicapped (d)										0.163	0.185*
Observations	2,754	2,754	2,754	2,754	2,754	2,754	2,754	2,754	2,754	2,747	2,747
Pseudo R^2	0.002	0.002	0.006	0.044	0.002	0.002	0.004	0.004	0.024	0.034	0.085

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 13 Unpaid voluntary work in groups and associations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Year	0.013***	0.013***	0.013***	0.014***	0.013***	0.013***	0.013***	0.013***	0.012***	0.013***	0.014***
Age		0.003									0.019***
$Age^2/100$		−0.004									−0.020***
Female (d)			−0.017								−0.010
Non-Luxembourg (d)				−0.220***							−0.206***
Religiosity					0.000						−0.000
hhsize==2 (d)						−0.011					−0.012
hhsize==3 (d)						0.029					0.049
hhsize==4 (d)						0.021					0.061
Do you have any children? (d)							−0.054**				−0.037
Separated (d)								−0.185***			−0.179**
Divorced (d)								−0.036			−0.029
Widowed (d)								−0.066			−0.016
Married (d)								−0.051**			−0.030
Professional educ. (d)									0.119***		0.071**
Secondary educ. (d)									0.166***		0.084**
Higher educ. (d)									0.194***		0.105**
Military professions (d)										0.183	0.107
Policy-makers (d)										0.142	0.079
Intellectual professions (d)										0.155*	0.066
Physic and technic professions (d)										0.195**	0.114
Civil servants (d)										0.085	0.026

Table 13 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Traders, merchants and vendors (d)										0.015	−0.013
Skilled workers (d)										0.274**	0.193
Artisanal workers (d)										−0.053	−0.042
Factory workers (d)										−0.108	−0.122
Unskilled workers (d)										−0.085	−0.060
Retired (d)										0.093	0.108
Houseworker (d)										0.002	−0.026
Student (d)										0.202**	0.187**
Handicapped (d)										−0.065	−0.063
Observations	2,756	2,756	2,756	2,756	2,756	2,756	2,756	2,756	2,756	2,756	2,756
Pseudo R^2	0.011	0.011	0.011	0.049	0.011	0.012	0.013	0.014	0.027	0.039	0.083

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 14 Confidence in religious institutions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Religious institutions											
Year	−0.013**	−0.015***	−0.013**	−0.014***	−0.013**	−0.012**	−0.015***	−0.011**	−0.012**	−0.011**	−0.014***
Age		−0.001									−0.022*
Age^2/100		0.013									0.031**
Female			0.025								0.027
Non-Luxembourg				0.289***							0.303***
Religiosity					−0.003						−0.001
hhsize==2						−0.064					−0.158
hhsize==3						−0.096					−0.077
hhsize==4						−0.030					−0.021
Do you have any children?							0.382***				0.137
Separated								−0.002			−0.118
Divorced								0.072			−0.129
Widowed								0.691***			0.114
Married								0.357***			0.095
Professional educ.									−0.419***		−0.248***
Secondary educ.									−0.483***		−0.203***
Higher educ.									−0.519***		−0.141
Military professions										−0.279	0.035
Policy-makers										−0.253	−0.255
Intellectual professions										−0.339*	−0.274
Physic and technic professions										−0.193	−0.071
Civil servants										−0.169	−0.062
Traders, merchants and vendors										−0.080	−0.038

Table 14 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Skilled workers										0.236	0.362
Artisanal workers										0.286	0.251
Factory workers										−0.016	0.029
Unskilled workers										0.334*	0.230
Retired										0.301*	0.048
Houseworker										0.177	0.063
Student										−0.373**	−0.215
Handicapped										−0.553	−0.620*
Observations	2,660	2,660	2,660	2,660	2,660	2,660	2,660	2,660	2,660	2,660	2,660
Pseudo R^2	0.001	0.014	0.001	0.007	0.001	0.001	0.011	0.014	0.015	0.023	0.042

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 15 Confidence in armed forces

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Armed forces											
Year	0.006	0.006	0.006	0.005	0.007	0.006	0.005	0.006	0.007	0.008	0.008
Age		−0.023***									−0.031**
Age^2/100		0.027***									0.033**
Female			−0.078								−0.076
Non-Luxembourg				0.282***							0.278***
Religiosity					0.003						0.004
hhsize==2						−0.045					−0.082
hhsize==3						−0.092					−0.112
hhsize==4						0.004					−0.031
Do you have any children?							0.109**				0.105
Separated								0.096			0.146
Divorced								0.046			0.014
Widowed								0.134			−0.118
Married								0.045			−0.028
Professional educ.									−0.241***		−0.148*
Secondary educ.									−0.231***		−0.075
Higher educ.									−0.497***		−0.277***
Military professions										0.371	0.450
Policy-makers										−0.352*	−0.178
Intellectual professions										−0.282*	−0.042
Physic and technic professions										−0.230	−0.056
Civil servants										0.011	0.157
Traders, merchants and vendors										0.038	0.110
Skilled workers										0.266	0.371

Table 15 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.340*	0.322*
Factory workers										0.136	0.135
Unskilled workers										0.372**	0.373*
Retired										0.163	0.189
Houseworker										0.053	0.160
Student										0.010	0.025
Handicapped										−0.281	−0.244
Observations	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604	2,604
Pseudo R^2	0.000	0.003	0.001	0.006	0.001	0.001	0.001	0.001	0.010	0.014	0.026

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 16 Confidence in educational system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Educational system											
Year	0.002	0.002	0.002	0.001	0.002	0.002	0.001	0.003	0.002	0.003	0.002
Age		−0.009									−0.038***
Age^2/100		0.016*									0.042***
Female			−0.103**								−0.060
Non-Luxembourg				0.430***							0.424***
Religiosity					−0.001						0.000
hhsize==2						0.077					0.053
hhsize==3						−0.075					−0.028
hhsize==4						0.013					0.066
Do you have any children?							0.192***				0.099
Separated								0.011			−0.124
Divorced								0.005			−0.068
Widowed								0.273**			−0.036
Married								0.181***			0.005
Professional educ.									−0.364***		−0.211***
Secondary educ.									−0.484***		−0.276***
Higher educ.									−0.314***		−0.180**
Military professions										−0.491*	−0.367
Policy-makers										−0.187	−0.128
Intellectual professions										0.038	0.165
Physic and technic professions										−0.241	−0.081
Civil servants										−0.183	−0.037
Traders, merchants and vendors										−0.115	−0.048
Skilled workers										−0.411	−0.335

Table 16 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.125	0.039
Factory workers										0.189	0.203
Unskilled workers										0.277	0.198
Retired										0.197	0.123
Houseworker										−0.085	−0.044
Student										−0.389*	−0.381*
Handicapped										0.124	0.175
Observations	2,653	2,653	2,653	2,653	2,653	2,653	2,653	2,653	2,653	2,653	2,653
Pseudo R^2	0.000	0.005	0.001	0.015	0.000	0.001	0.003	0.003	0.012	0.014	0.037

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 17 Confidence in press

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Press											
Year	0.011**	0.010*	0.011**	0.011**	0.011**	0.012**	0.011**	0.012**	0.011*	0.012**	0.010*
Age		0.003									0.013
$Age^2/100$		0.001									−0.008
Female			−0.053								−0.087
Non-Luxembourg				0.126**							0.163***
Religiosity					−0.000						0.000
hhsize==2						−0.050					0.035
hhsize==3						−0.096					0.009
hhsize==4						−0.064					0.047
Do you have any children?							0.096*				0.093
Separated								0.288			0.178
Divorced								−0.034			−0.166
Widowed								0.302**			0.145
Married								0.033			−0.141
Professional educ.									−0.115		−0.046
Secondary educ.									−0.073		0.007
Higher educ.									−0.029		0.054
Military professions										−0.415	−0.225
Policy-makers										0.046	0.012
Intellectual professions										0.072	0.094
Physic and technic professions										0.045	0.107
Civil servants										0.146	0.227
Traders, merchants and vendors										0.123	0.210
Skilled workers										−0.261	−0.201

Table 17 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.039	0.049
Factory workers										0.174	0.204
Unskilled workers										0.052	0.086
Retired										0.214	0.131
Houseworker										0.121	0.165
Student										0.069	0.222
Handicapped										0.035	0.030
Observations	2,664	2,664	2,664	2,664	2,664	2,664	2,664	2,664	2,664	2,664	2,664
Pseudo R^2	0.001	0.003	0.001	0.002	0.001	0.001	0.002	0.003	0.002	0.003	0.009

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 18 Confidence in labor unions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Labor unions											
Year	0.003	0.004	0.003	0.003	0.004	0.003	0.004	0.005	0.003	0.003	0.005
Age		−0.015*									0.005
$Age^2/100$		0.015*									−0.007
Female			−0.070								−0.061
Non-Luxembourg				0.032							0.027
Religiosity					0.003						0.003
hhsize==2						0.053					0.153
hhsize==3						−0.091					0.008
hhsize==4						0.023					0.130
Do you have any children?							−0.071				−0.003
Separated								−0.517**			−0.536**
Divorced								−0.113			−0.121
Widowed								0.069			0.077
Married								−0.116**			−0.154
Professional educ.									−0.205***		−0.199**
Secondary educ.									−0.103		−0.105
Higher educ.									−0.200***		−0.179*
Military professions										−0.022	−0.097
Policy-makers										−0.384	−0.331
Intellectual professions										−0.260	−0.219
Physic and technic professions										−0.265	−0.248
Civil servants										−0.103	−0.071
Traders, merchants and vendors										−0.275	−0.255
Skilled workers										−0.010	−0.087

Table 18 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										−0.221	−0.257
Factory workers										0.026	−0.037
Unskilled workers										−0.133	−0.177
Retired										−0.088	−0.059
Houseworker										−0.249	−0.200
Student										−0.046	−0.142
Handicapped										−0.195	−0.169
Observations	2,530	2,530	2,530	2,530	2,530	2,530	2,530	2,530	2,530	2,530	2,530
Pseudo R^2	0.000	0.001	0.001	0.000	0.000	0.001	0.000	0.002	0.002	0.004	0.009

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 19 Confidence in police

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Police											
Year	0.014**	0.013**	0.014**	0.013**	0.014***	0.014***	0.013**	0.015***	0.014**	0.015***	0.015***
Age		−0.013									−0.010
Age^2/100		0.018**									0.015
Female			−0.005								0.016
Non-Luxembourg				0.129***							0.130**
Religiosity					0.003*						0.004**
hhsize==2						−0.107					−0.116
hhsize==3						−0.144*					−0.115
hhsize==4						−0.026					0.005
Do you have any children?							0.116**				0.074
Separated								0.201			0.170
Divorced								−0.070			−0.142
Widowed								0.315***			0.046
Married								0.075			−0.006
Professional educ.									−0.257***		−0.185**
Secondary educ.									−0.219***		−0.116
Higher educ.									−0.330***		−0.190**
Military professions										0.622	0.797*
Policy-makers										0.092	0.197
Intellectual professions										−0.086	0.041
Physic and technic professions										−0.039	0.081
Civil servants										0.128	0.244
Traders, merchants and vendors										0.129	0.204
Skilled workers										0.070	0.114

Table 19 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.232	0.253
Factory workers										0.107	0.144
Unskilled workers										0.272	0.252
Retired										0.259	0.184
Houseworker										0.099	0.091
Student										0.115	0.211
Handicapped										0.272	0.245
Observations	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703
Pseudo R^2	0.001	0.004	0.001	0.003	0.002	0.002	0.002	0.004	0.006	0.007	0.015

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 20 Confidence in parliament

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Parliament											
Year	0.009*	0.009*	0.009*	0.009	0.010*	0.010*	0.009*	0.011**	0.008	0.011*	0.009
Age		−0.025***									−0.019
$Age^2/100$		0.032***									0.030**
Female			−0.030								−0.022
Non-Luxembourg				0.115**							0.164***
Religiosity					0.002						0.003
hhsize==2						−0.120					−0.196**
hhsize==3						−0.149*					−0.126
hhsize==4						−0.030					−0.003
Do you have any children?							0.032				−0.037
Separated								−0.237			−0.166
Divorced								−0.215**			−0.137
Widowed								0.262**			0.054
Married								0.056			0.103
Professional educ.									−0.155**		−0.041
Secondary educ.									−0.053		0.057
Higher educ.									0.140*		0.300***
Military professions										0.454*	0.609**
Policy-makers										0.296	0.140
Intellectual professions										0.160	−0.001
Physic and technic professions										0.184	0.165
Civil servants										0.050	0.076
Traders, merchants and vendors										0.122	0.158
Skilled workers										0.149	0.169

Table 20 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.109	0.133
Factory workers										−0.004	0.049
Unskilled workers										0.129	0.172
Retired										0.335	0.074
Houseworker										0.181	0.107
Student										0.341	0.334
Handicapped										0.255	0.252
Observations	2,547	2,547	2,547	2,547	2,547	2,547	2,547	2,547	2,547	2,547	2,547
Pseudo R^2	0.001	0.007	0.001	0.002	0.001	0.002	0.001	0.004	0.004	0.005	0.019

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 21 Confidence in civic service

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Civic service											
Year	0.026***	0.026***	0.026***	0.026***	0.027***	0.027***	0.026***	0.028***	0.025***	0.028***	0.028***
Age		−0.009									0.001
$Age^2/100$		0.013									0.007
Female			−0.127**								−0.131**
Non-Luxembourg				0.272***							0.298***
Religiosity					0.003						0.004*
hhsize==2						−0.105					−0.119
hhsize==3						−0.149*					−0.099
hhsize==4						−0.010					0.046
Do you have any children?							0.041				−0.018
Separated								−0.062			−0.068
Divorced								−0.184*			−0.207
Widowed								0.203*			0.036
Married								0.028			−0.035
Professional educ.									−0.210***		−0.104
Secondary educ.									−0.194***		−0.067
Higher educ.									−0.066		0.064
Military professions										0.084	0.271
Policy-makers										0.249	0.184
Intellectual professions										0.290	0.282
Physic and technic professions										0.248	0.327
Civil servants										0.364	0.483**
Traders, merchants and vendors										0.262	0.360
Skilled workers										0.119	0.158

Table 21 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.453**	0.418*
Factory workers										0.305	0.312
Unskilled workers										0.457*	0.483**
Retired										0.460**	0.364
Houseworker										0.281	0.343
Student										0.389*	0.498**
Handicapped										0.394	0.417
Observations	2,589	2,589	2,589	2,589	2,589	2,589	2,589	2,589	2,589	2,589	2,589
Pseudo R^2	0.005	0.007	0.007	0.011	0.006	0.007	0.005	0.007	0.008	0.009	0.024

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 22 Confidence in social security system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Social security system											
Year	0.046***	0.045***	0.046***	0.045***	0.046***	0.046***	0.045***	0.048***	0.044***	0.048***	0.047***
Age		−0.007									0.001
Age^2/100		0.014									0.003
Female			−0.082*								−0.077
Non-Luxembourg				0.210***							0.236***
Religiosity					0.002						0.004**
hhsize==2						0.101					0.004
hhsize==3						0.002					0.001
hhsize==4						−0.006					−0.036
Do you have any children?							0.124**				0.021
Separated								0.249			0.188
Divorced								−0.357***			−0.423***
Widowed								0.292**			0.044
Married								0.163***			0.070
Professional educ.									−0.425***		−0.320***
Secondary educ.									−0.276***		−0.122
Higher educ.									−0.200**		−0.078
Military professions										0.578	0.867*
Policy-makers										−0.135	−0.204
Intellectual professions										0.063	0.072
Physic and technic professions										0.008	0.082
Civil servants										−0.058	0.056
Traders, merchants and vendors										−0.155	−0.051
Skilled workers										−0.028	0.084

Table 22 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.057	0.039
Factory workers										−0.072	−0.039
Unskilled workers										0.188	0.186
Retired										0.326*	0.244
Houseworker										0.062	0.084
Student										−0.025	0.090
Handicapped										0.464	0.454
Observations	2,679	2,679	2,679	2,679	2,679	2,679	2,679	2,679	2,679	2,679	2,679
Pseudo R^2	0.016	0.022	0.017	0.020	0.016	0.017	0.017	0.025	0.025	0.025	0.043

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 23 Confidence in major companies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Major companies											
Year	0.010*	0.011**	0.010*	0.009*	0.011**	0.010*	0.010*	0.010*	0.010*	0.011**	0.011*
Age		−0.018**									−0.019*
Age^2/100		0.018**									0.018
Female			−0.113**								−0.113**
Non-Luxembourg				0.324***							0.278***
Religiosity					0.003						0.004*
hhsize==2						0.056					0.018
hhsize==3						0.031					−0.030
hhsize==4						0.107					0.044
Do you have any children?							−0.001				0.000
Separated								−0.113			0.031
Divorced								0.011			0.099
Widowed								−0.074			−0.053
Married								0.002			0.046
Professional educ.									−0.311***		−0.244***
Secondary educ.									−0.223***		−0.139*
Higher educ.									−0.288***		−0.144
Military professions										0.509	0.623
Policy-makers										0.549**	0.624**
Intellectual professions										0.127	0.231
Physic and technic professions										0.174	0.294
Civil servants										0.354*	0.478**
Traders, merchants and vendors										0.496**	0.591***
Skilled workers										0.048	0.172

Table 23 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.522**	0.489**
Factory workers										0.555**	0.540**
Unskilled workers										0.728***	0.715***
Retired										0.418**	0.522**
Houseworker										0.305	0.456**
Student										0.558***	0.562***
Handicapped										0.299	0.361
Observations	2,536	2,536	2,536	2,536	2,536	2,536	2,536	2,536	2,536	2,536	2,536
Pseudo R^2	0.001	0.002	0.002	0.009	0.001	0.001	0.001	0.001	0.006	0.012	0.023

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 24 Confidence in judicial system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Judicial system											
Year	0.027***	0.027***	0.027***	0.026***	0.027***	0.027***	0.026***	0.028***	0.026***	0.027***	0.025***
Age		−0.017**									−0.028**
$Age^2/100$		0.019**									0.033***
Female			−0.094*								−0.081
Non-Luxembourg				0.233***							0.206***
Religiosity					0.001						0.001
hhsize==2						0.016					−0.061
hhsize==3						0.056					−0.018
hhsize==4						0.115					0.027
Do you have any children?							0.091*				0.096
Separated								−0.235			−0.222
Divorced								−0.130			−0.104
Widowed								0.075			−0.018
Married								0.083			0.085
Professional educ.									−0.245***		−0.139*
Secondary educ.									−0.220***		−0.106
Higher educ.									−0.061		0.080
Military professions										−0.017	0.116
Policy-makers										−0.071	−0.148
Intellectual professions										−0.028	−0.066
Physic and technic professions										−0.105	−0.053
Civil servants										−0.033	0.041
Traders, merchants and vendors										−0.060	−0.008
Skilled workers										0.060	0.111

Table 24 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.057	0.011
Factory workers										−0.096	−0.073
Unskilled workers										0.307	0.308
Retired										0.027	−0.128
Houseworker										−0.126	−0.138
Student										0.051	0.068
Handicapped										−0.129	−0.070
Observations	2,609	2,609	2,609	2,609	2,609	2,609	2,609	2,609	2,609	2,609	2,609
Pseudo R^2	0.005	0.006	0.006	0.009	0.005	0.006	0.006	0.007	0.009	0.009	0.020

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 25 Confidence in political parties

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Political parties											
Year	0.023***	0.023***	0.023***	0.023***	0.022***	0.023***	0.022***	0.024***	0.022***	0.024***	0.023***
Age		−0.006									0.003
$Age^2/100$		0.010									0.000
Female			−0.187***								−0.142**
Non-Luxembourg				−0.140***							−0.117**
Religiosity					−0.002						−0.002
hhsize==2						0.092					−0.009
hhsize==3						0.064					−0.004
hhsize==4						0.060					0.016
Do you have any children?							0.090*				0.150*
Separated								−0.258			−0.294
Divorced								−0.198*			−0.306**
Widowed								−0.009			−0.203
Married								0.069			−0.035
Professional educ.									0.006		−0.001
Secondary educ.									0.051		0.052
Higher educ.									0.097		0.122
Military professions										0.585	0.600
Policy-makers										0.369	0.268
Intellectual professions										0.235	0.159
Physic and technic professions										0.248	0.216
Civil servants										0.384	0.391
Traders, merchants and vendors										0.220	0.261
Skilled workers										0.364	0.321

Table 25 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.156	0.125
Factory workers										0.322	0.317
Unskilled workers										0.079	0.160
Retired										0.467**	0.354
Houseworker										0.097	0.091
Student										0.314	0.370
Handicapped										−0.482	−0.473
Observations	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522	2,522
Pseudo R^2	0.004	0.006	0.007	0.005	0.004	0.004	0.004	0.006	0.004	0.012	0.019

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 26 Subjective well-being

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Satisfaction with life											
Year	0.005	0.004	0.005	0.006	0.004	0.004	0.004	0.006	0.005	0.007	0.006
Age		−0.007									−0.010
Age^2/100		0.015*									0.015
Female			−0.086*								−0.084
Non-Luxembourg				−0.260***							−0.211***
Religiosity					−0.002						−0.001
hhsize==2						0.244***					0.155*
hhsize==3						0.102					0.106
hhsize==4						0.082					0.109
Do you have any children?							0.121***				0.055
Separated								−0.401*			−0.393
Divorced								−0.079			−0.120
Widowed								0.173			−0.041
Married								0.188***			0.065
Professional educ.									0.065		0.047
Secondary educ.									0.062		0.061
Higher educ.									0.053		0.055
Military professions										0.769**	0.712**
Policy-makers										1.046***	0.987***
Intellectual professions										0.742***	0.714***
Physic and technic professions										0.802***	0.756***
Civil servants										0.678***	0.645***
Traders, merchants and vendors										0.760***	0.765***
Skilled workers										0.781**	0.673**

Table 26 continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Artisanal workers										0.724***	0.697***
Factory workers										0.684***	0.690***
Unskilled workers										0.403*	0.463*
Retired										0.999***	0.740***
Houseworker										0.832***	0.749***
Student										0.716***	0.730***
Handicapped										0.519	0.470
Observations	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760
Pseudo R^2	0.000	0.004	0.001	0.004	0.000	0.002	0.001	0.003	0.000	0.008	0.015

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 27 Differences in trends of relational social capital between immigrants and Luxembourgian people

	Trust		Membership		Unp.Vol.Work	
	(1)	(2)	(3)	(4)	(5)	(6)
Main						
Year (d)	0.011	−0.009	0.078***	0.070**	0.142***	0.138***
Non-Luxembourg (d)	−0.039	−0.012	−0.215***	−0.212***	−0.194***	−0.183***
Year * non−Lux (d)	0.096**	0.093*	−0.058	−0.055	−0.054	−0.046
Age		0.014***		0.010*		0.019***
$Age^2/100$		−0.010*		−0.011**		−0.020***
Female (d)		0.016		−0.060**		−0.009
Religiosity		−0.001		−0.001		−0.000
hhsize==2 (d)		−0.021		0.030		−0.012
hhsize==3 (d)		0.008		0.043		0.049
hhsize==4 (d)		−0.010		0.080*		0.062
Do you have any children? (d)		0.005		−0.015		−0.038
Separated (d)		−0.076		−0.157		−0.178**
Divorced (d)		−0.101**		−0.041		−0.028
Widowed (d)		−0.103**		0.060		−0.015
Married (d)		0.011		−0.013		−0.029
Professional educ. (d)		0.031		0.060*		0.070**
Secondary educ. (d)		0.074**		0.128***		0.083**
Higher educ. (d)		0.151***		0.158***		0.105**
Military professions (d)		0.155				0.106
Policy-makers (d)		0.193*		0.067		0.080
Intellectual professions (d)		0.208**		0.154**		0.066
Physic and technic professions (d)		0.161*		0.196***		0.114
Civil servants (d)		0.149		0.090		0.025
Traders, merchants and vendors (d)		0.227**		0.077		−0.012
Skilled workers (d)		0.154		0.215***		0.190
Artisanal workers (d)		0.007		0.119*		−0.042
Factory workers (d)		0.118		0.004		−0.120
Unskilled workers (d)		0.059		0.067		−0.060
Retired (d)		0.061		0.168**		0.108
Houseworker (d)		−0.019		0.027		−0.027
Student (d)		0.287***		0.177***		0.186**
Handicapped (d)		−0.068		0.182*		−0.066
O.military professions						
Observations	2,631	2,631	2,754	2,747	2,756	2,756
Pseudo R^2	0.004	0.056	0.045	0.085	0.050	0.084

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 28 Differences in trends of non relational social capital between immigrants and Luxembourgian people

	Rel. inst.		Armed forces		Police	
	(1)	(2)	(3)	(4)	(5)	(6)
Main						
Year	−0.218***	−0.216***	−0.014	0.018	−0.025	−0.006
Non-Luxembourg	0.155*	0.182**	0.196**	0.191**	−0.082	−0.079
Year * non-Lux	0.262***	0.241**	0.166	0.170	0.412***	0.411***
Age		−0.023*		−0.031**		−0.011
$Age^2/100$		0.032**		0.033***		0.015
Female		0.022		−0.080		0.010
Religiosity		−0.001		0.004		0.005**
hhsize==2		−0.159*		−0.081		−0.113
hhsize==3		−0.078		−0.111		−0.112
hhsize==4		−0.027		−0.034		−0.000
Do you have any children?		0.143		0.108		0.083
Separated		−0.131		0.137		0.150
Divorced		−0.134		0.011		−0.148
Widowed		0.110		−0.119		0.041
Married		0.093		−0.028		−0.009
Professional educ.		−0.245***		−0.146*		−0.177**
Secondary educ.		−0.199**		−0.073		−0.109
Higher educ.		−0.141		−0.278***		−0.189**
Military professions		0.031		0.445		0.803*
Policy-makers		−0.258		−0.187		0.190
Intellectual professions		−0.276		−0.049		0.040
Physic and technic professions		−0.075		−0.063		0.077
Civil servants		−0.066		0.150		0.247
Traders, merchants and vendors		−0.041		0.103		0.202
Skilled workers		0.376		0.375		0.145
Artisanal workers		0.247		0.313*		0.252
Factory workers		0.016		0.122		0.124
Unskilled workers		0.223		0.364*		0.248
Retired		0.044		0.181		0.182
Houseworker		0.067		0.159		0.102
Student		−0.211		0.022		0.223
Handicapped		−0.601*		−0.234		0.289
Observations	2,660	2,660	2,604	2,604	2,703	2,703
Pseudo R^2	0.009	0.043	0.007	0.026	0.006	0.018

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 29 Differences in trends of non relational social capital between immigrants and Luxembourgian people

	Press		Educ. syst.		Lab. Unions	
	(1)	(2)	(3)	(4)	(5)	(6)
Main						
Year	−0.047	−0.049	−0.150**	−0.136**	−0.010	0.002
Non-Luxembourg	−0.089	−0.049	0.200***	0.206***	−0.027	−0.034
Year * non-Lux	0.413***	0.413***	0.451***	0.433***	0.114	0.118
Age		0.013		−0.038***		0.005
$Age^2/100$		−0.008		0.042***		−0.007
Female		−0.096*		-0.071		−0.062
Religiosity		0.000		0.000		0.003
hhsize==2		0.035		0.059		0.154
hhsize==3		0.008		−0.024		0.008
hhsize==4		0.037		0.061		0.129
Do you have any children?		0.101		0.110		−0.001
Separated		0.159		−0.140		−0.542**
Divorced		−0.173		−0.072		−0.123
Widowed		0.142		−0.040		0.076
Married		−0.144		−0.000		−0.155*
Professional educ.		−0.040		−0.205***		−0.197**
Secondary educ.		0.014		−0.270***		−0.102
Higher educ.		0.052		−0.183**		−0.180*
Military professions		−0.230		−0.363		−0.096
Policy-makers		0.002		−0.132		−0.334
Intellectual professions		0.089		0.168		−0.220
Physic and technic professions		0.096		−0.085		−0.248
Civil servants		0.222		−0.038		−0.071
Traders, merchants and vendors		0.200		−0.053		−0.257
Skilled workers		−0.185		−0.308		−0.081
Artisanal workers		0.037		0.032		−0.258
Factory workers		0.177		0.180		−0.044
Unskilled workers		0.075		0.190		−0.180
Retired		0.121		0.117		−0.061
Houseworker		0.169		−0.034		−0.198
Student		0.227		−0.371*		−0.140
Handicapped		0.065		0.210		−0.159
Observations	2,664	2,664	2,653	2,653	2,530	2,530
Pseudo R^2	0.006	0.013	0.019	0.041	0.000	0.010

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 30 Differences in trends of non relational social capital between immigrants and Luxembourgian people

	Pol. parties		Parliament		Civ. service	
	(1)	(2)	(3)	(4)	(5)	(6)
Main						
Year	0.138**	0.135**	0.011	0.007	0.071	0.094
Non-Luxembourg	−0.256***	−0.228***	0.010	0.059	0.034	0.066
Year * non-Lux	0.218**	0.210**	0.202*	0.204*	0.459***	0.453***
Age		0.002		−0.019		0.000
Age2/100		0.001		0.030**		0.008
Female		−0.145**		−0.025		−0.138**
Religiosity		−0.002		0.003		0.004*
hhsize==2		−0.008		−0.194**		−0.115
hhsize==3		−0.003		−0.123		−0.097
hhsize==4		0.012		−0.007		0.037
Do you have any children?		0.155*		−0.034		−0.008
Separated		−0.305		−0.175		−0.090
Divorced		−0.308**		−0.137		−0.210
Widowed		−0.205		0.055		0.031
Married		−0.036		0.103		−0.038
Professional educ.		0.005		−0.036		−0.095
Secondary educ.		0.055		0.061		−0.059
Higher educ.		0.122		0.301***		0.064
Military professions		0.600		0.607**		0.268
Policy-makers		0.267		0.137		0.184
Intellectual professions		0.159		−0.001		0.287
Physic and technic professions		0.213		0.163		0.327
Civil servants		0.391		0.074		0.486**
Traders, merchants and vendors		0.259		0.155		0.358
Skilled workers		0.333		0.182		0.193
Artisanal workers		0.122		0.130		0.420*
Factory workers		0.305		0.037		0.292
Unskilled workers		0.156		0.169		0.480**
Retired		0.352		0.069		0.362
Houseworker		0.096		0.111		0.355
Student		0.376		0.340		0.512**
Handicapped		−0.457		0.269		0.464
Observations	2,522	2,522	2,547	2,547	2,589	2,589
Pseudo R^2	0.006	0.020	0.003	0.020	0.016	0.028

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 31 Differences in trends of non relational social capital between immigrants and Luxembourgian people

	Soc. sec. system		Judicial syst.		Maj. companies	
	(1)	(2)	(3)	(4)	(5)	(6)
Main						
Year	0.293***	0.313***	0.105*	0.096	−0.053	−0.035
Non-Luxembourg	0.045	0.070	0.038	0.010	0.123	0.084
Year * non-Lux	0.325***	0.331***	0.379***	0.382***	0.388***	0.379***
Age		0.000		−0.029**		−0.019*
$Age^2/100$		0.004		0.034***		0.019
Female		−0.083		−0.091		−0.118**
Religiosity		0.004**		0.001		0.004*
hhsize==2		0.007		−0.057		0.019
hhsize==3		0.004		−0.015		−0.026
hhsize==4		−0.041		0.020		0.039
Do you have any children?		0.026		0.106		0.007
Separated		0.175		−0.241		0.012
Divorced		−0.427***		−0.106		0.094
Widowed		0.040		−0.019		−0.059
Married		0.068		0.082		0.041
Professional educ.		−0.314***		−0.136*		−0.240***
Secondary educ.		−0.116		−0.101		−0.132*
Higher educ.		−0.077		0.079		−0.148
Military professions		0.868*		0.121		0.624
Policy-makers		−0.210		−0.154		0.613**
Intellectual professions		0.069		−0.065		0.229
Physic and technic professions		0.075		-0.057		0.286
Civil servants		0.053		0.042		0.476**
Traders, merchants and vendors		−0.057		−0.014		0.583***
Skilled workers		0.102		0.139		0.191
Artisanal workers		0.033		0.005		0.482**
Factory workers		−0.058		−0.093		0.516**
Unskilled workers		0.175		0.304		0.702***
Retired		0.239		−0.133		0.512**
Houseworker		0.087		−0.128		0.460**
Student		0.095		0.079		0.566***
Handicapped		0.479		−0.038		0.386
Observations	2,679	2,679	2,609	2,609	2,536	2,536
Pseudo R^2	0.022	0.046	0.012	0.023	0.013	0.026

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 32 Differences in trends of subjective well-being between immigrants and Luxembourgian people

	(1)	(2)
Satisfaction with life		
Year	0.119**	0.124**
Non-Luxembourg	−0.165**	−0.118
Year * non-Lux	−0.187**	−0.186*
Age		−0.009
$Age^2/100$		0.015
Female		−0.080
Religiosity		−0.002
hhsize==2		0.154*
hhsize==3		0.105
hhsize==4		0.112
Do you have any children?		0.051
Separated		−0.385
Divorced		−0.118
Widowed		−0.038
Married		0.066
Professional educ.		0.043
Secondary educ.		0.058
Higher educ.		0.055
Military professions		0.714**
Policy-makers		0.992***
Intellectual professions		0.715***
Physic and technic professions		0.760***
Civil servants		0.646***
Traders, merchants and vendors		0.769***
Skilled workers		0.663**
Artisanal workers		0.702***
Factory workers		0.702***
Unskilled workers		0.468**
Retired		0.745***
Houseworker		0.747***
Student		0.727***
Handicapped		0.455
Observations	2,760	2,760
Pseudo R^2	0.004	0.015

Marginal effects

(d) for discrete change of dummy variable from 0 to 1

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

References

Adam, F., (2008). Mapping social capital across Europe: Findings, trends and methodological shortcomings of cross-national surveys. *Social Science Information, 47*(2), 159–186.

Aguiar, M., & Hurst, E. (2006). *Measuring trends in leisure: The allocation of time over five decades*. Federal Reserve Bank of Boston working papers (2).

Allison, P. (2001). *Missing data*. SAGE University paper 136.

Bartolini, S., & Sarracino, F. (2011). Happy for how long? How social capital and GDP relate to happiness over time. Working paper no. 2011-60, CEPS/INSTEAD, Luxembourg.

Bartolini, S., Bilancini, E., & Pugno, M. (2011). Did the decline in social connections depress Americans' happiness? *Social Indicators Research*, 1–27. doi:10.1007/s11205-011-9971-x.

Bartolini, S., Bilancini, E., & Sarracino, F. (2012). Predicting the trend of well-being in Germany: How much do comparisons, adaptation and sociability matter? *Social Indicators Research*, 1–23. doi: 10.1007/s11205-012-0142-5.

Becchetti, L., Giachin Ricca, E., & Pelloni, A. (2009). *The 60es turnaround as a test on the causal relationship between sociability and happiness*. Econometica working papers wp07, Econometica.

Becchetti, L., Pelloni, A., & Rossetti, F. (2008). Relational goods, sociability and happiness. *Kyklos, 61*(3), 343–363.

Blanchflower, D., & Oswald, A. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics, 88*, 1359–1386.

Blanchflower, D., & Oswald, A. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine, 66*, 1733–1749.

Bruni, L., & Stanca, L. (2008). Watching alone: Relational goods, television and happiness. *Journal of Economic Behavior and Organization, 65*(3–4), 506–528.

Clark, A., & Oswald, A. (1994). Unhappiness and unemployment. *Economic Journal, 104*, 648–659.

Costa, D., & Kahn, M. (2003). Understanding the decline in social capital, 1952–1998. *Kyklos, 56*, 17–46.

Diener, E. (2006). Guidelines for national indicators of subjective well-being and ill-being. *Journal of happiness studies, 7*, 397–404.

Easterlin, R., & Angelescu, L. (2009). *Happiness and growth the world over: Time series evidence on the happiness-income paradox*. IZA discussion paper (4060).

Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In: P. A. David & M. Reder (Eds.), *Nations and households in economic growth* (pp. 89–125). New York: Academic Press.

Easterlin, R. A., McVey, L. A., Switek, M., Sawangfa, O., & Zweig, J. S. (2010). The happiness-income paradox revisited. *Proceedings of the National Academy of Sciences, 107*(52), 22463–22468. doi: 10.1073/pnas.1015962107, URL http://www.pnas.org/content/early/2010/12/08/1015962107.abstract, http://www.pnas.org/content/early/2010/12/08/1015962107.full.pdf+html.

Ferrer-i Carbonell, A. (2005). Income and well-being: An empirical analysis of the comparison income effect. *Journal of Public Economics, 89*(5–6), 997–1019.

Helliwell, J. (2008). *Life satisfaction and quality of development*. National Bureau of Economic Research working paper series (14507).

Helliwell, J., Huang, H., & Harris, A. (2009). International differences in the determinants of life satisfaction. In: E. S. Tridip Ray & B. Dutta (Eds.), *New and enduring themes in development economics*. Singapore: World Scientific.

Helliwell, J., & Wang, S. (2011). Trust and well-being. *International Journal of Wellbeing, 1*(1), 42–78.

Lim, C., & Putnam, R. (2009). *Praying alone is no fun: Religion, social networks and subjective well-being*. Mimeo.

Morales, L. (2004). *Changing patterns of associational involvement in Europe*. ECPR Joint Sessions, Uppsala, Workshop 8—The changing structure of civil society, directed by Derrick Purdue & Mario Diani.

OECD. (2001). The evidence on social capital. In: *The well-being of nations: The role of human and social capital* (pp. 39–63). OECD, Paris.

Oswald, A. (1997). Happiness and economic performance. *The Economic Journal, 107*, 1815–1831.

Paxton, P. (1999). Is social capital declining in the United States? A multiple indicator assessment. *American Journal of Sociology, 105*(1), 88–127.

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Rice, T., & Feldman, J. (1997). Civic culture and democracy from Europe to America. *The Journal of Politics, 59*, 1143–1172.

Sarracino, F. (2010). Social capital and subjective well-being trends: Comparing 11 western European countries. *Journal of Socio-Economics, 39*(4), 482–517.
Sarracino, F. (2011). Money, sociability and happiness: Are developed countries doomed to social erosion and unhappiness? *Social Indicators Research, 109*, 1–54.
Schafer, J. (1997). *Analysis of incomplete multivariate data*. London/Boca Raton: Chapman and Hall/CRC.
Schafer, J. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research, 8*, 3–15.
Stolle, D., & Hooghe, M. (2004). Inaccurate, exceptional, one-sided or irrelevant? The debate about the alleged decline of social capital and civic engagement in Western societies. *British Journal of Political Science, 35*, 149–167.
Valentova, M., & Berzosa, G. (2012). Attitudes toward immigrants in Luxembourg. Do contacts matter? *International Review of Sociology/Revue Internationale de Sociologie 22*(2), 341–363. doi: 10.1080/03906701.2012.696976.
Van Schaik, T. (2002). Social capital in the European values study surveys. Country paper prepared for the OECD-ONS international conference on Social Capital Measurement London.