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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, 2000) and the disappointing trends of subjective well-being (Easterlin, 1974) raise urgent questions for modern societies: is the erosion of social capital a general feature of western societies or is it rather a characteristic aspect of the American one? Is there a relationship between the trends of social capital and subjective well-being? The available evidence suggests that two of the richest countries in the world, US and Great Britain, are following negative and considerably different trends of social capital and subjective well-being than other western societies. Present work provides further evidence focusing on Luxembourg. This country is characterized by peculiar economic and social conditions: it is the country with the highest GDP per capita in the world, more than 40% of its population is composed by immigrants and about 50% of its labor force is composed by cross-borders. All these elements raise strives and tensions which are common to many European countries making Luxembourg an interesting case of study. Main results of the present research are the following: 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; relational goods; Easterlin paradox; time-series; economic development; EVS; WVS.

JEL classification codes: D03; D60; I31; O10

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1 Introduction

Ten years ago Putnam (2000) stired the American social and political debate publishing a detailed research on the evolution across the previous 30 years of several indicators of US social capital (SC). The evidence he provided suggests that, since 1970s, the American society experienced a drop in social relationships and in its system of shared values and beliefs.

These findings raised a considerable debate involving the public opinion as well as academics. Much of the subsequent research on SC concentrated on finding evidence to support or to contend this statement. Further research confirmed the decline of US SC, although not as dramatically as Putnam claimed. A comprehensive review of this literature is provided by Stolle and Hooghe (2004).

The decline of SC highlighted by Putnam 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 to this question is not straightforward. Although comparable long time series data on SC in non US societies are scarce (Arts and Halman, 2004, Van Oorschot et al., 2006), some recent contributions concerning European trends of SC suggest that countries are following various patterns (Morales, 2004, Adam, 2008, Sarracino, 2010).

Looking at trends between 1980 and 2002 from the WVS and the European Social Survey (ESS) Morales (2004) concludes that it is not possible to state whether a clear increase or decrease in general levels of SC, as proxied by membership in groups and associations.

Adam (2008) uses trends of generalized trust and membership in voluntary organizations as proxies of SC using 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: he finds 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. The author looks at the trends of four different set of proxies of SC in eleven western European countries finding out that between 1980 and 2000 western European citizens have persistently lost 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 coutries. Overall, 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 adds to the previous one provided by Putnam (2000) and together they 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. Is this erosion a legacy of the richest countries in the world?

This issue raises a second research question. Recent works by Bartolini et al. (2008, 2010) shows that the erosion of SC in US resulted in a significant shrinking of people's well-being. Their decomposition of the effects of several variables over SWB points out that SC - and particularly relational SC[1] - accounts for a large share of the overall SWB variation. The magnitude of such effect is well summarized by an example: 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 growth rate of US GDP had to be over 10%. This evidence provides a convincing and powerful explanation of the Easterlin paradox giving SC a new role: a higher income increases happiness as long as it does not undermine SC.

Furthermore, Bartolini et al. (2009) show that the correlation between SC and SWB trends appears to be 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 and Angelescu, 2009), is economic growth failing to provide a higher well-being? In other words, the second question to which I'd like to reply is: are people in richest countries destined to unsatisfactory, but rich lives?

Answering this question will concur also to the literature on the social outcomes of different economic settings (Bowles, 2008). Such debate may appear historically out-dated, since currently the only possible economic system appears to be one of the various well-known forms of capitalism. Nonetheless, recent research and the availability of new data and tools to account for SWB allowed a broad reconsideration of the well-being outcomes of different economic settings. Indeed, as recently pointed out by Fidrmuc and Gerxhani (2008), the sovietic

[1] Please, refer to section 2 for a more detailed discussion of SC, its definition and measurement.
[2] `www.norc.uchicago.edu/GSS+Website/`

system is regarded as the responsible of the lower levels of SC in post-communist countries. I stress that available evidence seems to suggest that even the most advanced market economies show poor performances in SC and, more importantly, in well-being terms.

In order to answer my questions, this article tries to find out what happened to SC and SWB trends in a third country, Luxemburg, which, in spite of its small dimensions, is the country with the highest income per capita[3].

The focus on Luxemburg is interesting for many reasons. First of all, because of scarcity of data and probably its reduced dimensions, the literature neglected this country. Thus, present work tries to fill in this lack of information. Secondly, Luxemburg represent 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 reality. About 50% of the total labor force comes from neighboring countries and is crossing its borders everyday. All these elements raise strives and tensions which are currently common to many other European countries and are significantly threatening the European unification process. It is sufficient to recall what happened in the *banlieues* of Paris a few years ago, the separatist strains in Belgium or the political claims of Lega Nord in Italy to have an idea of the relevance of the topic. Understanding the evolution of social norms and values in Luxemburg can provide useful policy hints to understand and face current social and economic strives in many European countries.

The case of SC in Luxemburg is contributes also to the research on *social cohesion*. As clearly pointed out by Dickes et al. (2009), social cohesion is a multi-dimensional concept in which many aspects of social life interact in different ways, from equality of chances and conditions to political participation, from trust in others to sharing common values and beliefs. From the conceptualization of the authors, it is clear that several indicators pertaining to different domains of people's life should be considered when accounting for social cohesion. SC appears as one of the constituents of social cohesion and many of the proxies adopted by Dickes et al. (2009) are usually adopted also in the empirical literature on SC. Hence, an assessment of the evolution of SC in Luxembourg can add significant information to the research on measuring social cohesion.

Finally, the recently released EVS 2008 data, containing observations on SWB in Luxem-

[3]International Monetary Fund, World Economic Outlook Database, October 2009, http://www.imf.org/external/pubs/ft/weo/2009/02/weodata/index.aspx.

burg, allows the first evaluation of the evolution of well-being in this country between 1999 and 2008.

Main results of my research are the following:

- the erosion of SC is not a legacy of the richest countries in the world: the social and well-being outcomes of economic systems depend on their characteristic development path. Luxemburgish system suggests that high economic performances are compatible with a rich social environment and well-being;
- between 1999 and 2008, Luxemburg experienced a substantial increase in almost every proxy of SC. These trends are largely in line with those characterizing other western European countries;
- considering the distinction between nationals and immigrants, both endowments and trends of the various proxies of SC differ significantly:
  - immigrants report rising trends of trust in other people, while natives report stagnating trends. Nonetheless, differences in levels between the two groups are not significantly different when compared with average EU levels;
  - Luxembourg is characterized by high levels of confidence in institutions such as: social security system, education, judicial system and police. At the same time 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;
  - luxemburgish people enjoy a substantially higher participation in groups and associations than immigrants;
  - the vast majority of the positive trends of confidence in institutions in Luxemburg is driven by immigrants;
  - nationals report on average higher levels of satisfaction with their life than immigrants. Similarly, trends of subjective well-being are growing for the first group, while decreasing for the second one.
- the positive relationship between trends of SWB and SC found in previous literature is confirmed.

The paper is organized as follows. Next section summarizes the state of the literature on SC and SWB. Section 3 points out data adopted for the research, while some methodological aspects are presented in section 4; Section 5 reports results from different regressions considering satisfaction with life and various proxies of SC as dependent variables; differences among natives and immigrants are further explored in the 6^{th} section, while the last one presents some concluding remarks.

2 Theoretical background

2.1 Social capital

Although SC has been longly a much debated topic, actually it still lacks a commonly agreed definition (Van Deth, 2008). This notion has been developed and applied in many different social disciplines hence different definitions have been advanced so far. Some of the fathers of this concept propose different definitions for it.

Pierre Bourdieu, probably the first scientist introducing this term, defines social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition ... which provides each of its members with the backing of collectively-owned capital."[4] Such a definition focuses on three important aspects of social capital: 1) the existence of a network of individuals; 2) participation in this network and 3) social capital as a public good. Nonetheless, Bourdieu misses to precisely identify SC pointing on its sources: "the network of relationships".

James Coleman proposes the following definition: "social capital is the set of resources that inhere in family relations and in community social organization and that are useful for the cognitive or social development of a child or a young person."[5] In Coleman's view the network aspect is less emphasized, while he stresses the importance of the group in which social relations constitute useful capital resources. Such a concept can be related to the category of "*bonding*" social capital in contrast with that one of "*bridging*" social capital (Schuller et al., 2000). Bonding refers typically to "relations among members of families and ethnic groups.

[4] quoted in Schuller et al. (2000, page 5)

[5] quoted in S. Baron, J. Field and T. Schuller, Social capital: critical perspectives, Oxford University Press, Oxford, 2000, p. 6

Bridging social capital refers to relations with distant friends, associates and colleagues."[6] These are two different forms of social capital that should be considered mutual. In fact, while the first form gives particular groups of people "a sense of identity and common purpose, without bridgind ties that transcend various social divides (e.g. religion, ethinicity, socio-economic status), bonding ties can become a basis for the pursuit of narrow interests, and can actively exclude outsiders."[7] Such groups can be characterized by strong and co-operative norms, but low trust and co-operation with the rest of society becoming a barrier to social cohesion and personal development. Taking this aspect to its extreme, strong group ties can lead to neglect wider "public" interests promoting socially destructive "rent-seeking" activities (Olson, 1982).

Robert Putnam defines social capital as the "features of social life - networks, norms, and trust - that enable participants to act together more effectively to pursue shared objectives"[8]. In this way the author identifies crucial aspects of social capital specifying their role in social relationships: they enable different people to co-operate (even unconsciously) to reach common goals.

More recently, OECD (2001b) adopted a very similar definition to the one proposed by Putnam et al. (1993) considering SC as a "network together with shared norms, values and understandings that facilitate co-operation within or among groups".

Similarly, Bartolini et al. (2008) proposed a more operating definition of SC intended as "the stock of both *non-market relations* and *beliefs concerning institutions* that affect either utility or production functions."[9]. Basically, the authors adopted 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. In particular, they point to two main aspects of SC. First, every non-market relationship among individuals which allow people to communicate each other and to develop mutual trust. They refer to this aspect as *relational* SC. This dimension is further articulated in intrinsically and extrinsically motivated *relational SC* depending on whether the incentives to act come from within or outside the individual. They define as *intrinsic SC* (alternatively defined as *relational goods*) those elements "that enter

[6] OECD (2001a, p. 42)
[7] OECD (2001a, p. 42)
[8] Putnam et al. (1993, p. 56)
[9] Bartolini et al. (2008, p. 5)

into people's utility function"[10]; 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].

This distinction allows to go deeper in the analysis of the category of relational SC. Indeed, quoting Deci's work (1971), they focus on the non-instrumental nature of intrinsic motivated activities. This peculiarity allows to focus on a broader point: non-market relations are not always intrinsic; there can be extrinsic relational SC (or purely extrinsic) as well as intrinsic one.[12]

Second, they consider the system of values or beliefs that makes people act coherently usually labelled as *non relational* SC.

Measurement of SC is a further critical aspect of this kind of literature, but recently some concensus has been reached. Trust in others and levels of engagement or interaction in social or group activities are broadely adopted as proxies of SC (Putnam, 2000). Nonetheless, when observing SC we should keep in mind the following aspects (OECD, 2001a):

- we should pay attention to causal connections since sources, functions and outcomes may be confused;
- SC is mainly characterized by tacit and relational aspects which are naturally difficult to observe, to measure and to codify;
- usual variables of SC (trust, membership, voting, etc.) provide proxy measures and should not be confused with the underlying concept.

2.2 Subjective well-being

Subjective well-being literature is a relatively new concept developed in sociological and psychological studies. Recently also the economic research devoted increasing attention to this topic reconsidering the meaning of the term well-being and proposing new tools to help accounting for it.

[10] Bartolini et al. (2008, p. 5-6)
[11] Bartolini et al. (2008, p. 5-6)
[12] please refer to tab. 1 in the appendix for a summarizing scheme.

In this context, the words “happiness”, “life satisfaction” and “subjective well-being” are considered synonyms and are generally referred to as an evaluation of one’s own life regarded as a whole.

These kind of data revealed to be precious and reliable sources of information concerning people’s well-being. Their reliability has been tested in many ways: data about SWB have been found consistent with more objective measures of well-being (heart rate, blood pressure, duration of Duchenne smile, neurological tests of brain activity) (Blanchflower and Oswald, 2008a, van Reekum et al., 2007), they show a high correlation with other proxies of SWB (Schwarz and Strack, 1999, Wanous and Hudy, 2001, Schimmack et al., 2009) and are consistent with evaluations about the respondent’s happiness provided by friends, relatives or clinical experts (Schneider and Schimmack, 2009, **?**, Layard, 2005).

Furthermore, these data revealed to be widely available and easy to collect even in Less Developed Countries (Graham, 2005, Blanchflower, 2008). Not only, but many of the so-called “happiness studies” showed that SWB data reveal interesting stories about our societies (Diener and Suh, 1997, Diener et al., 2009).

Probably, the aspect that most captured the attention of academics as well as policy-makers and media concern the so-called “Easterlin paradox” (Easterlin, 1974). In his influential contribution using SWB data in US, Easterlin showed that on average richer people are happier than poorer ones, but over time this relationship disappears: from the Second World War onward income in US (and in many other industrialized countries) grew up, while perceived well-being stayed constant. Although this finding has been challenged (Stevenson and Wolfers, 2008, Sacks et al., 2010), many other recent studies have provided further supporting evidence corroborating the existence of this paradox (Easterlin and Angelescu, 2009, Bruni and Stanca, 2008, Becchetti et al., 2006, Blanchflower and Oswald, 2004, Helliwell, 2002, Di Tella et al., 2001).

Currently, a considerable part of the explanations focus on the role played by relational goods and, in general, by SC in determining happiness. This part of the literature argues that efforts to increase income may turn out in reducing quantities and quality of human relationships negatively affecting individual SWB (Bruni and Stanca, 2008, Bartolini et al., 2008, 2010, 2009, Becchetti et al., 2006, Helliwell, 2002).

Happiness data have been widely used also to assess the impacts of other non-economic

aspects on individual happiness. One of the first contributions from this point of view is proposed by Oswald (1997), who explored the relationship between socio-demographic aspects (such as age, gender, marital and employment status, income and education level, traits and cognitive dispositions) and happiness.

Another field in which happiness economics is providing interesting insights is macro-economics. Observing directly individual response to different macro-economic variables has proved to be a good way to evaluate economic policies. For example Di Tella et al. (2001, 2003) and Di Tella and MacCulloch (2006) first confirm Easterlin result and then assess the impact of inflation and unemployment on individual happiness. From a different perspective, Kenny (1999) tries to assess the effects of economic growth on happiness and subsequently focuses its analysis on less developed countries searching for a connection between economic growth and SWB (Kenny, 2005). Alesina et al. (2004) pose their attention on the relationship between inequality and happiness in Europe and US. Their general finding is that "individuals tend to declare lower happiness levels when inequality happens to be high"[13].

Further research has been developed to evaluate the effects of particular policies on people. This is the case, for example, of some studies about airport noise or other environmental aspects (Van Praag and Baarsma, 2004).

Finally, a more substantial part of the literature focused on how political institutions affect subjective well-being (Frey and Stutzer, 2000, 2002b, 2007).

3 Data

The analysis of SC and SWB trends for Luxemburg is constrained by the availability of data. From this point of view, the European Values Study[14] (EVS), probably the most comprehensive source of information on the topic, allows to study the evolution of SC and SWB in Luxemburg and to compare these trends with what has been happening, on average, in other western European countries. EVS contains data on SC and SWB for Luxemburg only in the last two waves that were run in 1999 and 2008, respectively. Furthermore, the last wave of 2008 EVS survey doesn't contain information on Italy, Sweden and Great Britain. In order to include

[13] Alesina et al. (2004, p.2035)

[14] `http://www.europeanvaluesstudy.eu`

these three countries in present analysis, data have been imported from the fifth wave of the World Values Survey[15] (WVS).

Although EVS and WVS are two separate sources of data, they are directly comparable.[16] Indeed, 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 on sociocultural and political change on randomly selected samples of 300 to 4,000 individuals per country. In particular the two data-bases provide information on "individual beliefs about politics, the economy, religious, social and ethical topics, personal finances, familiar and social relationships, happiness and life satisfaction"[17]. EVS data have been collected in four waves from 1981 to 2008 every 9 years, while WVS has been administered in five waves (1981 - 84; 1989 - 93; 1994 - 99; 1999 - 2004 and 2005 - 2007).

Since the focus of the present study is on trends of SC and SWB proxies for Luxemburg, the sample available includes only the waves in which these data have been collected. Furthermore, in order to provide a comparison of Luxemburgish trends with the broader European ones, I consider also a sample of western European countries for which information on SC and SWB are available in both the fourth (1999-2001) and fifth (2005-2009) waves. Countries satisfying this requirement are: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Malta, Netherlands, Portugal, Spain and Sweden[18]. Descriptive statistics concerning the observed countries and the missingness of SC and SWB proxies are available in tab. 2 on page 12, tab. 3 on page 13, tab. 5 on page 30 and tab. 6 on page 30 in the Appendix[19].

According to the majority of the literature on SC which is mainly referring to Putnam's definition and operationalization of SC (Paxton, 1999, Costa and Kahn, 2003, Van Schaik, 2002), I observe the *beliefs* component through several reports of confidence in institutions, namely armed forces, police, parliament, civil services, press, religious, judicial system, education system, labour unions and major companies. Answers to these questions range on a

[15] http://www.worldvaluessurvey.org/

[16] 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.

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

[18] Data about Great Britain, Italy and Sweden are retrieved from the fifth wave of the WVS

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

1 to 4 point 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[20]. 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 on pages 31 and 32). 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.

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

Table 1: Summarizing scheme of the different constituents of social capital.

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?".

A major issue in this context is the availability of some of the proxies of SC and missing data. Information on confidence in political parties are completely missing for the fourth wave. The same survey is missing data on confidence in political parties, educational system, social security system, judicial system and major companies for Sweden. This aspect reduces the possibilities of comparative assessment of the Luxemburgish SC with other European countries, but doesn't hinder present econometric analysis since these data are missing completely

[20]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.

at random[21]. As such, they are not liable to bias estimates.

Similarly, tables 2 and 3 inform that in 1999 some data for Luxemburg are missing. The problem concerns mainly proxies of non-relational SC: the last column on the right reporting percentages of missing data informs that between 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, imputation techniques are not easy to implement requiring strong assumptions that may easily result arbitrary. For that reason and considering the limited number of variables affected by this problem, I consider a safe choice using data without imputing them, being prudent in drawing conclusions on them.

variable	mean	sd	min	max	obs	% missing
trust in others	0.248	0.432	0	1	1151	0.0495
membership in at least 1 group	0.582	0.493	0	1	1211	0
unpaid voluntary work in at least 1 group	0.302	0.459	0	1	1211	0
confidence: religious institutions	2.400	0.990	1	4	1160	0.0421
confidence: armed forces	2.496	0.882	1	4	1128	0.0685
confidence: police	2.790	0.783	1	4	1164	0.0388
confidence: press	2.377	0.787	1	4	1128	0.0685
confidence: educational system	2.769	0.785	1	4	1144	0.0553
confidence: labor unions	2.487	0.807	1	4	1074	0.113
confidence: political parties	2.076	0.807	1	4	1058	0.126
confidence: parliament	2.611	0.776	1	4	1077	0.111
confidence: civic service	2.582	0.750	1	4	1086	0.103
confidence: social security system	2.918	0.707	1	4	1139	0.0595
confidence: judicial system	2.622	0.803	1	4	1113	0.0809
confidence: major companies	2.273	0.797	1	4	1075	0.112
confidence: satisfaction with life	7.809	1.872	1	10	1201	0.00826
year	1999	0	1999	1999	1211	0
age	40.35	16.84	15	86	1211	0
age2	1912	1522	225	7396	1211	0
female	0.520	0.500	0	1	1211	0
non-Luxembourg	0.373	0.484	0	1	1211	0
religiosity	0.692	0.462	0	1	1211	0
number of people in the household	2.805	1.090	1	4	1211	0
do you have any children?	0.583	0.493	0	1	1211	0
marital status	2.621	1.860	1	5	1211	0
highest educational level attained	2.396	1.042	1	4	1211	0
professional status	7.627	3.652	0	14	1211	0

Table 2: Descriptive statistics for Luxembourg - 1999

For what concern remaining variables, missingness percentages are much smaller and, according to the majority of the literature on missing data[22], they are negligible.

[21] For a more detailed discussion on pattern of missingness and their implication for econometric analysis, please refer to Schafer (1997, 1999), Allison (2001).

[22] Allison (2001)

variable	mean	sd	min	max	obs	% missing
trust in others	0.311	0.463	0	1	1529	0.0503
membership in at least 1 group	0.636	0.481	0	1	1593	0.0106
unpaid voluntary work in at least 1 group	0.412	0.492	0	1	1595	0.00932
confidence: religious institutions	2.252	0.969	1	4	1549	0.0379
confidence: armed forces	2.534	0.865	1	4	1524	0.0534
confidence: police	2.895	0.808	1	4	1587	0.0143
confidence: press	2.440	0.764	1	4	1579	0.0193
confidence: educational system	2.792	0.824	1	4	1556	0.0335
confidence: labor unions	2.553	0.794	1	4	1493	0.0727
confidence: political parties	2.263	0.769	1	4	1504	0.0658
confidence: parliament	2.747	0.764	1	4	1512	0.0609
confidence: civic service	2.775	0.735	1	4	1545	0.0404
confidence: social security system	3.185	0.671	1	4	1584	0.0161
confidence: judicial system	2.805	0.819	1	4	1540	0.0435
confidence: major companies	2.365	0.780	1	4	1500	0.0683
satisfaction with life	7.881	2.015	1	10	1608	0.00124
year	2008	0	2008	2008	1610	0
age	39.54	17.50	18	88	1610	0
age2	1870	1608	324	7744	1610	0
female	0.506	0.500	0	1	1610	0
non-Luxembourg	0.501	0.500	0	1	1610	0
religiosity	0.701	0.458	0	1	1610	0
number of people in the household	2.865	1.033	1	4	1610	0
do you have any children?	0.534	0.499	0	1	1610	0
marital status	2.956	1.892	1	5	1610	0
highest educational level attained	2.693	1.058	1	4	1610	0
professional status	7.534	3.949	0	14	1610	0

Table 3: Descriptive statistics for Luxembourg - 2008

4 Methodological aspects

In order to study SC and SWB trends between 1999 and 2008 in Luxemburg, 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 Luxemburg adopting the performance of other western European countries as a benchmark, I adopt a probit model with robust standard errors reporting marginal effects. 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 $z_i = TIME_i \cdot \beta + \epsilon_i$, $\epsilon_i \sim N(0,1)$.

This model is repeated for each country separately.

In case of an ordered dependent variable taking discrete values, from 1 to 4, (i.e. confidence in institutions and satisfaction with life) the most suited regression techniques are ordered probit or logit (see Ferrer-i Carbonell (2005)). For the aforementioned reasons, 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 has the following form:

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

where $0 < c_1 < c_2 < \ldots < c_{K-1}$

$z_i = TIME_i \cdot \beta + \epsilon_i$, $\epsilon_i \sim N(0,1)$

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 index *i* stands for individuals. The variable Y_i stands for the various ordered dependent variables, namely confidence in institutions and life satisfaction.

Marginal effect of the coefficient of the $TIME$ variable reflect the slope of the line that best fits the distribution over time of its observations. As such they can be interpreted as the average yearly change of the dependent variable.[23].

In order to check whether the trends from equations 1 and 2 are not the outcome of peculiar unobserved individual or social features, I run a further set of regressions including

[23]I am aware that marginal effects (MFX) estimated at the mean value of the independent variable are not the best tool to allow comparisons across time, countries and models. Average marginal effects (AME) would best accomplish this task by providing the effect over the dependent variable when the independent moves from its minimum to the maximum value. Still, a comparison between MFX and AME shows that MFX are a good approximation of AME for what concern both the significance and the magnitude of the coefficients (Mood, 2010). The advantage in using MFX is that Stata provides a better framework to store and deal with these results.

different groups of socio-demographic control variables. These are: age and age squared; 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 is included to control for eventual non-linearities in the relationship between age and well-being, while a control over 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. In order to account for these differences I included a dummy variable set equal 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[24]. This evidence suggests that the trends of SC and SWB are independent from the specific socio-demographic composition of the sample.

5 Results

I report and discuss results from several regressions relative to equations 1 and 2. Marginal effects of the $TIME$ variable over SC and SWB proxies are summarized in tab. 4, while detailed estimates are reported in tables from 11 on page 33 to tab. 26 on page 48 in the Appendix.

5.1 Trends of relational social capital

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

To start with, between 1999 and 2008 the number of people in Luxemburg declaring to trust other people increased on average by 0.005 points on a 0 to 1 scale. That is to say a

[24] see tables from 11 on page 33 to tab. 26 on page 48 in the Appendix.

	average annual growth between 4th and 5th wave					
	Luxembourg			sample of European countries		
	coeff.	Robust S.E.	Obs	coeff.	Robust S.E.	Obs
trust in others	0.005	(0.002)**	2631	0.004	(0.001)***	38863
membership	0.005	(0.002)**	2754	-0.009	(0.001)***	40367
unpaid vol. Work	0.013	(0.002)***	2756	-0.002	(0.001)***	40367
religious	-0.013	(0.005)**	2660	-0.008	(0.001)***	39253
armed forces	0.006	(0.005)	2604	0.022	(0.001)***	38882
police	0.014	(0.005)**	2703	0.016	(0.001)***	39855
press	0.011	(0.005)**	2664	-0.006	(0.001)***	39454
educational system	0.002	(0.005)	2653	-0.003	(0.001)*	35501
political parties	0.023	(0.006)***	2522	n.a.	n.a.	20084
labor unions	0.003	(0.006)	2530	0.009	(0.001)***	37834
parliament	0.009	(0.006)*	2547	0.008	(0.001)***	38723
social security system	0.046	(0.006)***	2679	0.014	(0.001)***	35326
civil service	0.026	(0.006)***	2589	0.014	(0.001)***	38671
judicial system	0.027	(0.005)***	2609	0.018	(0.001)***	38196
major companies	0.010	(0.005)*	2536	-0.006	(0.002)***	30883
subjective well-being	0.005	(0.005)	2760	-0.006	(0.001)***	40175

confidence in institutions

Table 4: Trends of SC and SWB proxies for Luxembourg and for a sample of western European countries. Marginal effects of weighted probit/ordered probit estimates with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

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 Luxemburg are steadily lower than the average European one: in 1999 25% of people in Luxemburg 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, data suggest that, during the first decade of year 2000, *trust in others* has been increasing in all western Europe. In this framework, Luxemburg shows lower endowments, but stronger growth rates.

At the same time, people in Luxemburg 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 growth is positive and at odds with the experience of other European countries. Coefficients in the second and third line of tab. 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 levels

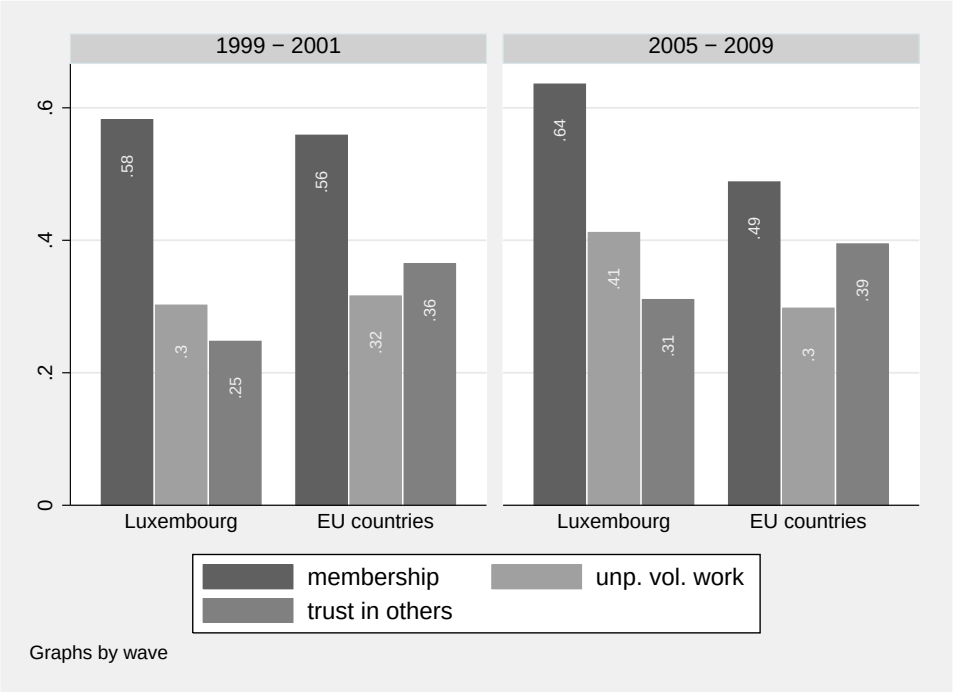

Figure 1: Average levels of relational social capital proxies for Luxemburg and western European countries. Proxies are listed on the x-axis. From left to right, the chart reports membership in groups and associations, unpaid voluntary work in groups and associations and trust in others. The y-axis ranges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

of both variables for Luxemburg and, on average, in Europe were very close: 58% of people in Luxemburg declared to be member of at least one group or organization versus an European average of 56% and 30% of Luxemburgish people were performing unpaid voluntary work versus an average of 32%. From this point onward, trends diverged: they have been shrinking for most western European countries and increasing for Luxemburg (see figure 1 on page 17).

Between 1999 and 2008 Luxemburgish 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, Luxemburg is characterized by positive trends.

5.2 Trends of non-relational social capital

The following twelve lines of tab. 4 consider the evolution in time of non-relational SC as proxied by confidence in institutions.

Overall, figures suggest a framework of generalized improvement of confidence in institutions even if some worrying aspects arise.

To start with, data suggest that confidence in *religious institutions* significantly declined all over western Europe. The rate of this decrease in Luxemburg appears to be higher than the European average. 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. Indeed, while the average 1999 levels of *confidence in religious institutions* in Luxemburg and Europe were very close, in 2008 the gap widened (see figure 2 on page 18).

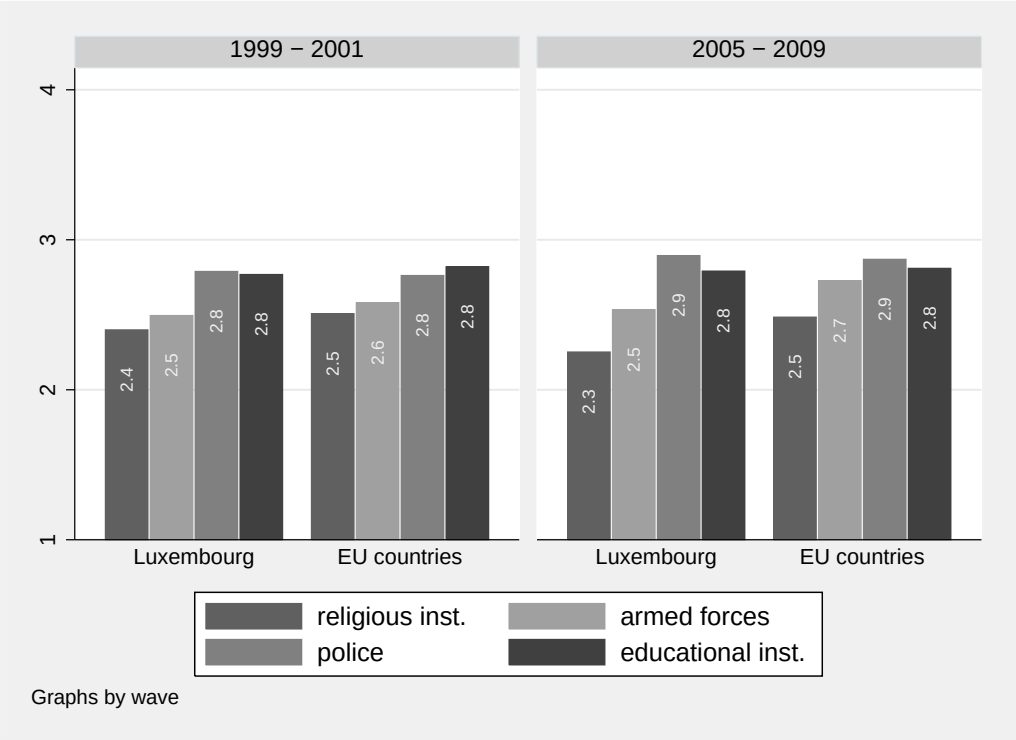

Figure 2: Average levels of non-relational social capital proxies for Luxemburg and western European countries. Proxies are listed on the x-axis. From left to right, the chart reports confidence in: religious institutions, armed forces, police and educational institutions. The y-axis ranges from 1 (not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

In the same period, *confidence in armed forces, educational system and labor unions* are stagnating. In all these cases variations across time are not significantly different from zero, suggesting a flat trend. This doesn't mean that Luxemburgish people have low levels of trust in these institutions. Indeed, 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 Luxemburgish people in *political parties* raised by 0.023 points per year, an increase of about 0.57%. Unfortunately, in this case a comparison with the other European countries is unavailable because this variable was not

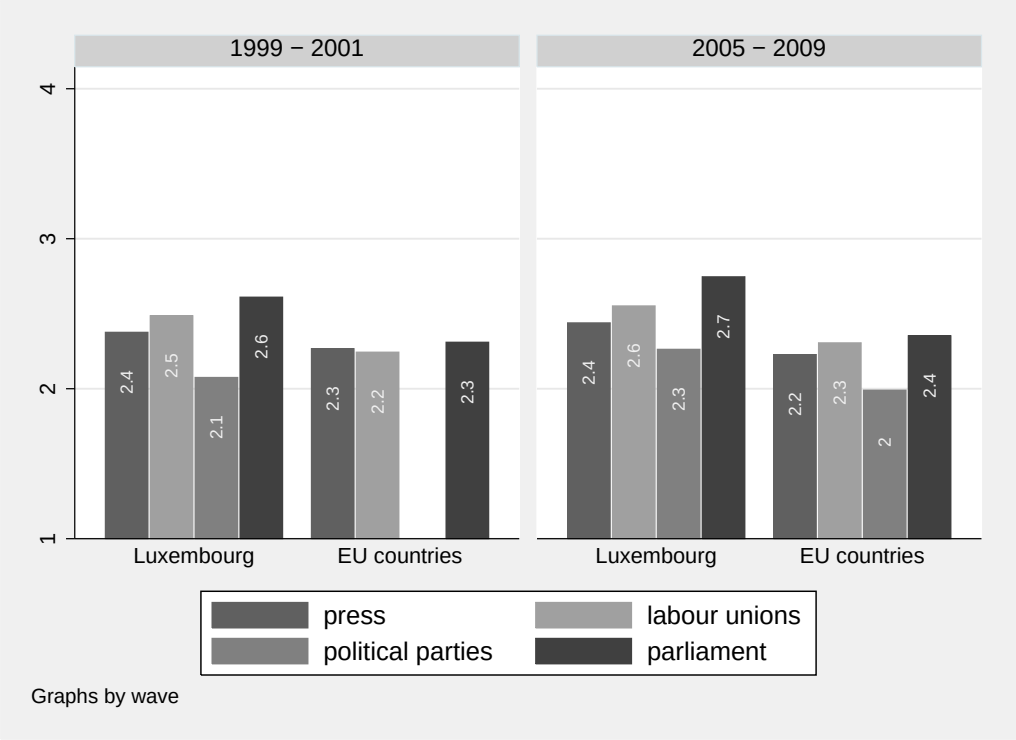

Figure 3: Average levels of non-relational social capital proxies for Luxemburg and western European countries. Proxies are listed on the x-axis. From left to right, the chart reports confidence in: press, labor unions, political parties and parliament. The y-axis ranges from 1 (not at all) to 4 (a great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

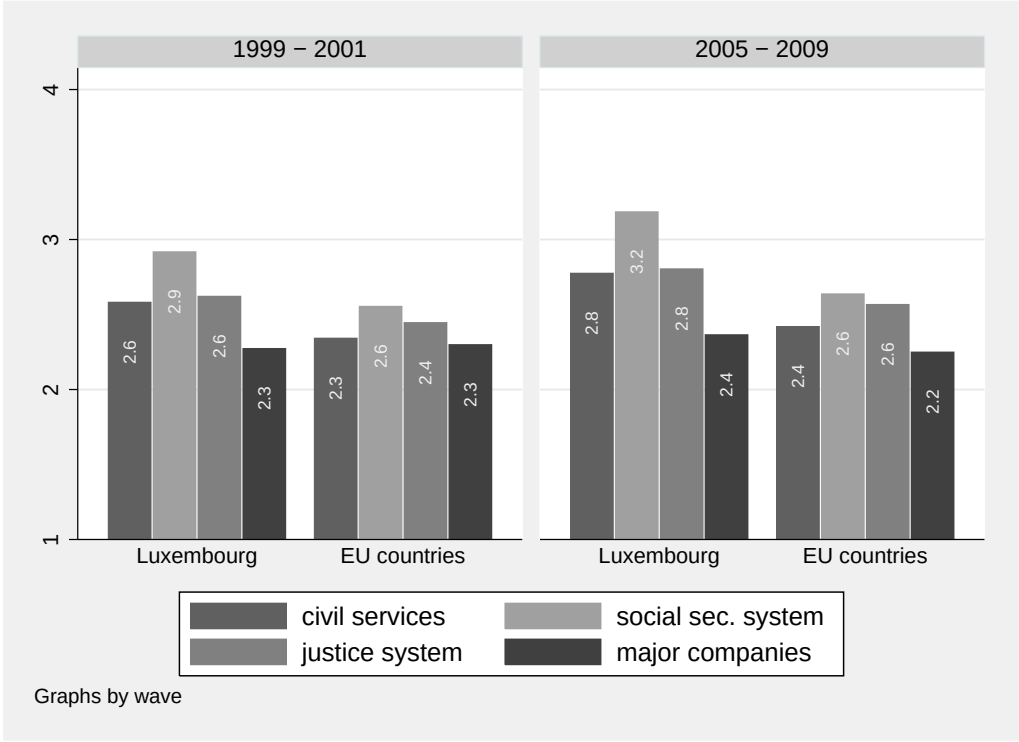

Figure 4: Average levels of non-relational social capital proxies for Luxemburg and western European countries. Proxies are listed on the x-axis. From left to right, the chart reports confidence in: civil services, social security system, justice system and major companies. The y-axis ranges from 1 (not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

observed in 1999 (see tab5 on page 30 in the Appendix).

Finally, all the remaining institutions report positive and significant trends. In particular, the trend of confidence in *social security system* is the most impressive. This institution is by far the most succesfull in Luxemburg 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 Luxemburgish 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.

The years between 1999 and 2008 in Luxemburg 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 Luxemburg and 41% in Europe. Almost ten years later, the group of people trusting this institution increased to 70% in Luxemburg and 57% in Europe, while those not trusting it reduced to 30% and 49%, respectively.

In line with what happens in the rest of European countries, Luxemburg 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*, Luxemburgish trends of confidence in these two institutions raise on average by 0.26% per year.

Following some recent results from SWB literature pointing out a positive correlation between SC, particularly relational SC, and SWB trends, these figures show a picture in which

Luxemburgish SWB should have increased over time (Helliwell, 2008, Helliwell et al., 2009, Becchetti et al., 2008, 2009, Bartolini et al., 2010).

Surprisingly, the evidence contradicts this hipothesis: the last line of tab. 4 shows that the trend of SWB in Luxemburg is not significantly different from zero. Apparently this evidence confirms the hipothesis that rich countries are destined to stagnating trends of well-being and that SWB trend is independent from SC trends. After US and UK, Luxemburg is confirming that people in the richest countries in the world are not getting happier over time (Easterlin and Angelescu, 2009, Sarracino, 2010). Still, a more careful look at the estimates reveals that this is not all the story: while in the previous two cases economic growth and SWB decline were accompanied by an erosion of SC, Luxemburgish SC is flourishing. There is something more here to be explained.

6 Differences between immigrants and Luxemburgish people

Tables 11 on page 33 to tab. 26 on page 48 provide some information to start looking 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.

Figures suggest that in many cases there is 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. In other words, in all these cases SC reduces in the early stages of life reverting in late adulthood.

Consistently with the literature, the same relationship arises between SWB and age. Indeed, even if the *age* variable in tab. 26 on page 48 is not significant, its squared term is significant and consistently close to zero 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.

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

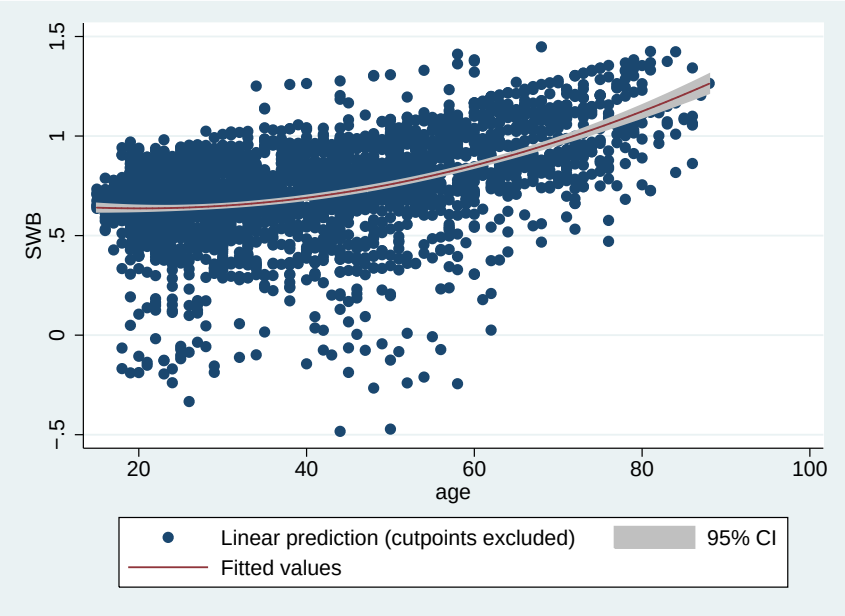

Figure 5: U-shaped relationship between predicted values of life satisfaction and age.

higher trust in others and participation in associational life (see tables 11, 12 and 13 on pages 33, 34 and 35). 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 on professional status, belonging to military professions or being a student is highly and negatively correlated with confidence in educational system (see tab.16 on page 38). Similarly, being a student, a white collar or a trader is positively correlated 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 are not 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. In a similar way, result concerning political parties may reflect the fact that immigrants are less involved in local social and political life. But why do immigrants enjoy their lives less than their fellow citizens? I'll answer this question at the end of this section.

Some more patterns are arising which are worth mentioning. Indeed, being immigrant appears to be positively correlated with 11 out of 12 variables of confidence in institutions. In other words immigrants are significantly more confident than natives in *confidence 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, negatively correlated with relational proxies of SC and with SWB.

These differences represent a challenge for present research question casting the doubt that the evolution of SC and SWB over time might be different between natives and immigrants. Indeed, differences in levels may imply differences in trends.

In order to provide some insight in this regard I run a further set of regressions in which interaction between the time variable and the immigrant dummy variable is included among the regressors. The interaction term allows to test the hypothesis that trends of SC and SWB proxies for immigrants are significantly different from the Luxemburgish 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:

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

where $0 < c_1 < c_2 < \ldots < c_{K-1}$

$z_i = TIME_i \cdot \beta + non - Lux_i \cdot \beta_2 + TIME_i \cdot \beta_3 \cdot non - Lux_i + X_i \cdot \gamma + \epsilon_i$, $\epsilon_i \sim N(0,1)$

c_{K-1} are unknown parameters to be estimated.

where again the choice of the model depends on the quality of the dependent variables, X_i is a vector of control variables as listed in section 4 on page 15 and index *i* stands for individuals. Each model from equations 3 and 4 is run for each country separately. Results are reported from tab. 27 on page 49 to tab. 32 on page 54 in the Appendix.

The picture arising is significantly richer than the one resulting from section 5. 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 decline. 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 tab. 29 on page 51 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.

The evidence brought about by this new set of regressions points out that much of the positive Luxemburgish 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 Luxemburgish people and, as reported by the interaction term, their trends are not significantly different from zero.

Hence, the evolution of SC between 1999 and 2008 appears significantly different from the previous one: the various proxies of SC followed different trajectories in different groups of 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 in the light of this differentiation?

Table 32 on page 54 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 appear to have significantly lower levels of satisfaction with their own life (-0.124) and a trend of SWB which is about 1.7% lower than the Luxemburgish one with a net decreasing trend of about 0.7% per year.

This evidence suggests a different conclusion from the one previously formulated. 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 consistent with previous results from the literature on SWB pointing out a positive relationship between social connections and SWB. Hence, immigrants may have been enjoying their lives less than their fellow citizens because they are less involved in the social life of Luxembourg.

7 Conclusions

This paper describes the evolution of several proxies of SC and SWB in Luxemburg 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 Luxemburgish SC and SWB. Such an information, considering a wide spectrum of variables, was missing mainly because of scarcity of data. Beside these two main aspects, present research provides fruitful information about the Luxembourgish society in several ways: it informs policies aimed at improving people's well-being; it highlights which is people's feeling 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 Luxemburgish society. Finally, from an international perspective, it shows that the quality of the chosen development path matters in determining people's quality of life: high economic performances are compatible with prosperity of SC and increasing well-being.

The overall result from the analysis of available data betwen 1999 and 2008 characterizes Luxemburgish 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 9 years almost every proxy of SC has been increasing, confidence in *religious institutions* being the only proxy with a negative evolution.

Luxemburgish 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 concern Luxemburg, the trend doesn't appear to be significantly different from zero. This evidence stands at odds with previous results from the literature. While the

European average trends of SC are compatible with a worsening of people's well-being, the flourishing of Luxemburgish SC should be accompanied by raising subjective well-being, but this doesn't seem to be the case.

A deeper analysis accounting for the large percentage of immigrants within the Luxembourgish 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 Luxemburg is entirely driven by immigrants. Natives don't show any significant increase in this respect;

2. on the contrary, natives have been significantly improved 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* is 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:

   i. confidence in *educational system* grows up only for immigrants, while the trend turns out to be negative for natives;

   ii. 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, immigrants experiencing decreasing trends.

A first conclusion of this work is that the various forms of SC grow up in a non uniformely way across people in Luxemburg. 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 on the positive relationship between trends of SC and SWB. Consistently with previous results from the literature, positive trends of re-

lational SC are associated with growing trends of well-being, while non-relational SC trends are less correlated with SWB trends. Nonetheless, policy-makers should carefully consider the disappointing trends of confidence in many institutions. At the same time, in order to promote social inclusion and well-being, more attention should be devoted to the social life of immigrants.

Notwithstanding these results, present work is constrained by some limits: the availability of time-series data prevents a comparison over a longer time-period; it doesn't perform an analysis on the causes of the variations. This is in part because the former focus of this paper was to describe what happened and in part because an analysis of causality requires a richer data-set than the available one. 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.

Independently from these constraints, present research pointed out some peculiar features of the Luxemburgish society that are not immediately apparent and provided evidence to state that richer societies are not destined to SC erosion and to unhappy lives. Luxemburg is an example of social and economic organization liable to guarantee high economic performances together with enjoyable lives and a good social environment.

Still, this system turns out to be imperfect since the Luxemburgish 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 raising question requiring a separate analysis. The 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 Luxemburg represents a peculiar case that is worth studying for the insights it can provide for policy-making.

8 Appendix: tables

variable	mean	sd	min	max	obs	% missing
membership in groups and associations	0.559	0.497	0	1	19520	0
unpaid voluntary work in groups and associations	0.316	0.465	0	1	19520	0
trust in others	0.365	0.481	0	1	18686	0.0427
confidence: churches	2.508	0.951	1	4	19007	0.0263
confidence: armed forces	2.581	0.829	1	4	18851	0.0343
confidence: the police	2.762	0.787	1	4	19284	0.0121
confidence: educ. system	2.820	0.755	1	4	18176	0.0689
confidence: the press	2.268	0.770	1	4	19170	0.0179
confidence: labour unions	2.244	0.803	1	4	18399	0.0574
confidence: political parties	.	.	.	.	0	1
confidence: parliament	2.310	0.785	1	4	18771	0.0384
confidence: civil services	2.342	0.750	1	4	18752	0.0393
confidence: social sec. system	2.555	0.799	1	4	18043	0.0757
confidence: justice system	2.446	0.833	1	4	18011	0.0773
confidence: major companies	2.299	0.796	1	4	11547	0.408
satisfaction with your life	7.505	1.985	1	10	19385	0.00692

Table 5: Aggregate descriptive statistics for the sample of European countries - 4^{th} wave.

variable	mean	sd	min	max	obs	% missing
membership in groups and associations	0.488	0.500	0	1	20910	0
unpaid voluntary work in groups and associations	0.298	0.457	0	1	20910	0
trust in others	0.395	0.489	0	1	20235	0.0323
confidence: churches	2.485	0.969	1	4	20303	0.0290
confidence: armed forces	2.727	0.811	1	4	20086	0.0394
confidence: the police	2.870	0.760	1	4	20628	0.0135
confidence: educ. system	2.810	0.751	1	4	17383	0.169
confidence: the press	2.228	0.764	1	4	20341	0.0272
confidence: labour unions	2.307	0.808	1	4	19488	0.0680
confidence: political parties	1.991	0.742	1	4	20138	0.0369
confidence: parliament	2.354	0.798	1	4	20005	0.0433
confidence: civil services	2.420	0.757	1	4	19971	0.0449
confidence: social sec. system	2.638	0.795	1	4	17335	0.171
confidence: justice system	2.567	0.838	1	4	20239	0.0321
confidence: major companies	2.250	0.784	1	4	19385	0.0729
satisfaction with your life	7.401	1.970	1	10	20852	0.00277

Table 6: Aggregate descriptive statistics for the sample of European countries - 5^{th} wave.

Luxembourg		
wave	1999	2008
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 womens 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

Table 7: Distribution of people participating in associations in Luxembourg by wave. The first column refers to the different associations, while the following ones refer to each wave separately. Blank rows means that the variable wasn't observed in the specific wave.

sampled European countries		
wave	4^{th} wave	5^{th} wave
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 womenÂ´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

Table 8: Distribution of people participating in associations in the selected European countries by wave. The first column refers to the different associations, while the following ones refer to each wave separately. Blank rows means that the variable wasn't observed in the specific wave.

Luxemburg		
wave	1999	2008
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 womens 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

Table 9: Distribution of people performing unpaid voluntary work in associations in Luxembourg by wave. The first column refers to the different associations, while the following ones refer to each wave separately. Blank rows means that the variable wasn't observed in the specific wave.

sampled European countries		
wave	4^{th} wave	5^{th} wave
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 womenÂ´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

Table 10: Distribution of people performing unpaid voluntary work in associations in the selected European countries by wave. The first column refers to the different associations, while the following ones refer to each wave separately. Blank rows means that the variable wasn't observed in the specific wave.

Table 11: Trust in others

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(1
year	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.005**	0.004*	0.005**	0
age		0.009***									0
age2		−0.000**									−0
female (d)			−0.017								0
non-Luxembourg (d)				0.010							0
f028b					−0.001						−0
hhsize==2 (d)						0.021					−0
hhsize==3 (d)						0.037					0
hhsize==4 (d)						0.016					−0
do you have any children? (d)							0.008				0
separated (d)								−0.065			−0
divorced (d)								−0.067*			−0
widowed (d)								−0.078*			−0
marrried (d)								0.028			0
professional educ. (d)									0.025		0
secondary educ. (d)									0.083***		0
higher educ. (d)									0.207***		0
military professions (d)										−0.005	0
policy-makers (d)										0.298***	0
intellectual professions (d)										0.292***	0
physic & technic professions (d)										0.193**	0
civil servants (d)										0.167*	0
traders, merchants & vendors (d)										0.219**	0
skilled workers (d)										0.111	0
artisanal workers (d)										−0.005	0
factory workers (d)										0.080	0
unskilled workers (d)										0.045	0
retired (d)										0.145*	0
houseworker (d)										0.035	−0
student (d)										0.157*	0
handicapped (d)										−0.043	−0
Observations	2631	2631	2631	2631	2631	2631	2631	2631	2631	2631	2631
Pseudo R^2	0.002	0.005	0.002	0.002	0.003	0.003	0.002	0.007	0.023	0.029	0

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)
year	0.005**	0.005**	0.005**	0.006***	0.005**	0.005**	0.005**	0.005**	0.004*	0.005*
age		−0.002								
age2		0.000								
female (d)			−0.077***							
non-Luxembourg (d)				−0.244***						
f028b					−0.000					
hhsize==2 (d)						0.012				
hhsize==3 (d)						0.006				
hhsize==4 (d)						0.022				
do you have any children? (d)							−0.063***			
separated (d)								−0.175*		
divorced (d)								−0.067		
widowed (d)								−0.041		
marrried (d)								−0.059**		
professional educ. (d)									0.101***	
secondary educ. (d)									0.177***	
higher educ. (d)									0.208***	
policy-makers (d)										0.140*
intellectual professions (d)										0.242***
physic & technic professions (d)										0.259***
civil servants (d)										0.145**
traders, merchants & vendors (d)										0.087
skilled workers (d)										0.267***
artisanal workers (d)										0.102
factory workers (d)										0.018
unskilled workers (d)										0.006
retired (d)										0.179***
houseworker (d)										0.035
student (d)										0.231***
handicapped (d)										0.163
Observations	2754	2754	2754	2754	2754	2754	2754	2754	2754	2747
Pseudo R^2	0.002	0.002	0.006	0.044	0.002	0.002	0.004	0.004	0.024	0.034

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)
year	0.013***	0.013***	0.013***	0.014***	0.013***	0.013***	0.013***	0.013***	0.012***	0.013
age		0.003								
age2		−0.000								
female (d)			−0.017							
non-Luxembourg (d)				−0.220***						
f028b					0.000					
hhsize==2 (d)						−0.011				
hhsize==3 (d)						0.029				
hhsize==4 (d)						0.021				
do you have any children? (d)							−0.054**			
separated (d)								−0.185***		
divorced (d)								−0.036		
widowed (d)								−0.066		
marrried (d)								−0.051**		
professional educ. (d)									0.119***	
secondary educ. (d)									0.166***	
higher educ. (d)									0.194***	
military professions (d)										0.183
policy-makers (d)										0.142
intellectual professions (d)										0.155
physic & technic professions (d)										0.195
civil servants (d)										0.085
traders, merchants & vendors (d)										0.015
skilled workers (d)										0.274
artisanal workers (d)										−0.053
factory workers (d)										−0.108
unskilled workers (d)										−0.085
retired (d)										0.093
houseworker (d)										0.002
student (d)										0.202
handicapped (d)										−0.065
Observations	2756	2756	2756	2756	2756	2756	2756	2756	2756	2756
Pseudo R^2	0.011	0.011	0.011	0.049	0.011	0.012	0.013	0.014	0.027	0.039

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)	(
religious institutions											
year	-0.013^{**}	-0.015^{***}	-0.013^{**}	-0.014^{***}	-0.013^{**}	-0.012^{**}	-0.015^{***}	-0.011^{**}	-0.012^{**}	-0.011^{**}	$-$
age		-0.001									$-$
age2		0.000									
female			0.025								
non-Luxembourg				0.289^{***}							
f028b					-0.003						$-$
hhsize==2						-0.064					$-$
hhsize==3						-0.096					$-$
hhsize==4						-0.030					$-$
do you have any children?							0.382^{***}				
separated								-0.002			$-$
divorced								0.072			$-$
widowed								0.691^{***}			
marrried								0.357^{***}			
professional educ.									-0.419^{***}		$-$
secondary educ.									-0.483^{***}		$-$
higher educ.									-0.519^{***}		$-$
military professions										-0.279	
policy-makers										-0.253	$-$
intellectual professions										-0.339^{*}	$-$
physic & technic professions										-0.193	$-$
civil servants										-0.169	$-$
traders, merchants & vendors										-0.080	$-$
skilled workers										0.236	
artisanal workers										0.286	
factory workers										-0.016	
unskilled workers										0.334^{*}	
retired										0.301^{*}	
houseworker										0.177	
student										-0.373^{**}	$-$
handicapped										-0.553	$-$
Observations	2660	2660	2660	2660	2660	2660	2660	2660	2660	2660	266
Pseudo R^2	0.001	0.014	0.001	0.007	0.001	0.001	0.011	0.014	0.015	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 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**
age2		0.000***									0.000**
female			−0.078								−0.076
non-Luxembourg				0.282***							0.278***
f028b					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
marrried								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 & technic professions										−0.230	−0.056
civil servants										0.011	0.157
traders, merchants & vendors										0.038	0.110
skilled workers										0.266	0.371
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	2604	2604	2604	2604	2604	2604	2604	2604	2604	2604	2604
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***
age2		0.000*									0.000***
female			−0.103**								−0.060
non-Luxembourg				0.430***							0.424***
f028b					−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
marrried								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 & technic professions										−0.241	−0.081
civil servants										−0.183	−0.037
traders, merchants & vendors										−0.115	−0.048
skilled workers										−0.411	−0.335
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	2653	2653	2653	2653	2653	2653	2653	2653	2653	2653	2653
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
age2		0.000									−0.000
female			−0.053								−0.087
non-Luxembourg				0.126**							0.163***
f028b					−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
marrried								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 & technic professions										0.045	0.107
civil servants										0.146	0.227
traders, merchants & vendors										0.123	0.210
skilled workers										−0.261	−0.201
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	2664	2664	2664	2664	2664	2664	2664	2664	2664	2664	2664
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
age2		0.000*									−0.000
female			−0.070								−0.061
non-Luxembourg				0.032							0.027
f028b					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
marrried								−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 & technic professions										−0.265	−0.248
civil servants										−0.103	−0.071
traders, merchants & vendors										−0.275	−0.255
skilled workers										−0.010	−0.087
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	2530	2530	2530	2530	2530	2530	2530	2530	2530	2530	2530
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)	
police											
year	0.014**	0.013**	0.014**	0.013**	0.014***	0.014***	0.013**	0.015***	0.014**	0.015***	
age		−0.013									
age2		0.000**									
female			−0.005								
non-Luxembourg				0.129***							
f028b					0.003*						
hhsize==2						−0.107					
hhsize==3						−0.144*					
hhsize==4						−0.026					
do you have any children?							0.116**				
separated								0.201			
divorced								−0.070			
widowed								0.315***			
marrried								0.075			
professional educ.									−0.257***		
secondary educ.									−0.219***		
higher educ.									−0.330***		
military professions										0.622	
policy-makers										0.092	
intellectual professions										−0.086	
physic & technic professions										−0.039	
civil servants										0.128	
traders, merchants & vendors										0.129	
skilled workers										0.070	
artisanal workers										0.232	
factory workers										0.107	
unskilled workers										0.272	
retired										0.259	
houseworker										0.099	
student										0.115	
handicapped										0.272	
Observations	2703	2703	2703	2703	2703	2703	2703	2703	2703	2703	27
Pseudo R^2	0.001	0.004	0.001	0.003	0.002	0.002	0.002	0.004	0.006	0.007	

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
age2		0.000***									0.000**
female			−0.030								−0.022
non-Luxembourg				0.115**							0.164***
f028b					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
marrried								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 & technic professions										0.184	0.165
civil servants										0.050	0.076
traders, merchants & vendors										0.122	0.158
skilled workers										0.149	0.169
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	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547	2547
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)
civic service										
year	0.026***	0.026***	0.026***	0.026***	0.027***	0.027***	0.026***	0.028***	0.025***	0.028***
age		−0.009								
age2		0.000								
female			−0.127**							
non-Luxembourg				0.272***						
f028b					0.003					
hhsize==2						−0.105				
hhsize==3						−0.149*				
hhsize==4						−0.010				
do you have any children?							0.041			
separated								−0.062		
divorced								−0.184*		
widowed								0.203*		
marrried								0.028		
professional educ.									−0.210***	
secondary educ.									−0.194***	
higher educ.									−0.066	
military professions										0.084
policy-makers										0.249
intellectual professions										0.290
physic & technic professions										0.248
civil servants										0.364
traders, merchants & vendors										0.262
skilled workers										0.119
artisanal workers										0.453**
factory workers										0.305
unskilled workers										0.457*
retired										0.460**
houseworker										0.281
student										0.389*
handicapped										0.394
Observations	2589	2589	2589	2589	2589	2589	2589	2589	2589	2589
Pseudo R^2	0.005	0.007	0.007	0.011	0.006	0.007	0.005	0.007	0.008	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 22: Confidence in social security system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
social security system										
year	0.046***	0.045***	0.046***	0.045***	0.046***	0.046***	0.045***	0.048***	0.044***	0.048***
age		−0.007								
age2		0.000								
female			−0.082*							
non-Luxembourg				0.210***						
f028b					0.002					
hhsize==2						0.101				
hhsize==3						0.002				
hhsize==4						−0.006				
do you have any children?							0.124**			
separated								0.249		
divorced								−0.357***		
widowed								0.292**		
marrried								0.163***		
professional educ.									−0.425***	
secondary educ.									−0.276***	
higher educ.									−0.200**	
military professions										0.578
policy-makers										−0.135
intellectual professions										0.063
physic & technic professions										0.008
civil servants										−0.058
traders, merchants & vendors										−0.155
skilled workers										−0.028
artisanal workers										0.057
factory workers										−0.072
unskilled workers										0.188
retired										0.326*
houseworker										0.062
student										−0.025
handicapped										0.464
Observations	2679	2679	2679	2679	2679	2679	2679	2679	2679	2679
Pseudo R^2	0.016	0.022	0.017	0.020	0.016	0.017	0.017	0.025	0.025	0.025

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*
age2		0.000**									0.000
female			−0.113**								−0.113**
non-Luxembourg				0.324***							0.278***
f028b					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
marrried								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 & technic professions										0.174	0.294
civil servants										0.354*	0.478**
traders, merchants & vendors										0.496**	0.591***
skilled workers										0.048	0.172
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	2536	2536	2536	2536	2536	2536	2536	2536	2536	2536	2536
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)
judicial system										
year	0.027***	0.027***	0.027***	0.026***	0.027***	0.027***	0.026***	0.028***	0.026***	0.027***
age		−0.017**								
age2		0.000**								
female			−0.094*							
non-Luxembourg				0.233***						
f028b					0.001					
hhsize==2						0.016				
hhsize==3						0.056				
hhsize==4						0.115				
do you have any children?							0.091*			
separated								−0.235		
divorced								−0.130		
widowed								0.075		
marrried								0.083		
professional educ.									−0.245***	
secondary educ.									−0.220***	
higher educ.									−0.061	
military professions										−0.017
policy-makers										−0.071
intellectual professions										−0.028
physic & technic professions										−0.105
civil servants										−0.033
traders, merchants & vendors										−0.060
skilled workers										0.060
artisanal workers										0.057
factory workers										−0.096
unskilled workers										0.307
retired										0.027
houseworker										−0.126
student										0.051
handicapped										−0.129
Observations	2609	2609	2609	2609	2609	2609	2609	2609	2609	2609
Pseudo R^2	0.005	0.006	0.006	0.009	0.005	0.006	0.006	0.007	0.009	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 25: Confidence in political parties

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
political parties										
year	0.023***	0.023***	0.023***	0.023***	0.022***	0.023***	0.022***	0.024***	0.022***	0.024***
age		−0.006								
age2		0.000								
female			−0.187***							
non-Luxembourg				−0.140***						
f028b					−0.002					
hhsize==2						0.092				
hhsize==3						0.064				
hhsize==4						0.060				
do you have any children?							0.090*			
separated								−0.258		
divorced								−0.198*		
widowed								−0.009		
marrried								0.069		
professional educ.									0.006	
secondary educ.									0.051	
higher educ.									0.097	
military professions										0.585
policy-makers										0.369
intellectual professions										0.235
physic & technic professions										0.248
civil servants										0.384
traders, merchants & vendors										0.220
skilled workers										0.364
artisanal workers										0.156
factory workers										0.322
unskilled workers										0.079
retired										0.467**
houseworker										0.097
student										0.314
handicapped										−0.482
Observations	2522	2522	2522	2522	2522	2522	2522	2522	2522	2522
Pseudo R^2	0.004	0.006	0.007	0.005	0.004	0.004	0.004	0.006	0.004	0.012

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
age2		0.000*									0.000
female			−0.086*								−0.084
non-Luxembourg				−0.260***							−0.211***
f028b					−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
marrried								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 & technic professions										0.802***	0.756***
civil servants										0.678***	0.645***
traders, merchants & vendors										0.760***	0.765***
skilled workers										0.781**	0.673**
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	2760	2760	2760	2760	2760	2760	2760	2760	2760	2760	2760
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 Luxembourgish people

	Trust		Membership		Unp.Vol.Work	
	(1)	(2)	(3)	(4)	(5)	(6)
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***
age2		−0.000*		−0.000**		−0.000***
female (d)		0.016		−0.060**		−0.009
f028b		−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
marrried (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 & technic professions (d)		0.161*		0.196***		0.114
civil servants (d)		0.149		0.090		0.025
traders, merchants & 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
Observations	2631	2631	2754	2747	2756	2756
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 Luxembourgish 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
age2		0.000^{**}		0.000^{***}		0.000
female		0.022		-0.080		0.010
f028b		-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
marrried		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 & technic professions		-0.075		-0.063		0.077
civil servants		-0.066		0.150		0.247
traders, merchants & 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	2660	2660	2604	2604	2703	2703
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 Luxembourgish 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
age2		−0.000		0.000***		−0.000
female		−0.096*		−0.071		−0.062
f028b		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
marrried		−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 & technic professions		0.096		−0.085		−0.248
civil servants		0.222		−0.038		−0.071
traders, merchants & 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	2664	2664	2653	2653	2530	2530
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 Luxembourgish 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		0.000		0.000**		0.000
female		−0.145**		−0.025		−0.138**
f028b		−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
marrried		−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 & technic professions		0.213		0.163		0.327
civil servants		0.391		0.074		0.486**
traders, merchants & 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	2522	2522	2547	2547	2589	2589
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 Luxembourgish 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^{*}
age2		0.000		0.000^{***}		0.000
female		-0.083		-0.091		-0.118^{**}
f028b		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
marrried		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 & technic professions		0.075		-0.057		0.286
civil servants		0.053		0.042		0.476^{**}
traders, merchants & 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	2679	2679	2609	2609	2536	2536
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 Luxembourgish 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
age2		0.000
female		-0.080
f028b		-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
marrried		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 & technic professions		0.760^{***}
civil servants		0.646^{***}
traders, merchants & 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	2760	2760
Pseudo R^2	0.004	0.015

Marginal effects
(d) for discrete change of dummy variable from 0 to 1
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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