International Journal of Business, Human and Social Sciences
ISSN: 2517-9411
Vol:5, No:2, 2011

The Strange Relationship between Literacy and Well-Being: The Results of an International Survey with Special Focus on Italy

Federica Cornali

***Abstract*—**Does education matter to the quality of our life? The results of extensive studies offer an affirmative answer to this question: high education levels are positively associated with higher income, with more highly qualified professions, with lower risk of unemployment, with better physical health and also, it is said, with more happiness. However, exploring these relationships is far from straightforward. Aside from educational credentials, what properties distinguish functionally literate individuals? How can their personal level of satisfaction be measured? What are the social mechanisms whereby education affects well-being?Using a literacy index and several measures for well-being developed by secondary analysis of the Adult Literacy and Life Skills Survey database, this investigation examined the relationship between literacy skills and subjective well-being in several OECD (Organisation for Economic Co-operation and Development) countries. Special attention was been addressed to Italy, and in particular to two regions representing territorial differences in this country: Piedmont and Campania.

***Keywords*—**Cultural Divide, Literacy Index, Life Satisfaction, Subjective Well-being Index

I. Introduction

THIS paper will examine some contradictory evidence regarding the relationship between literacy skills (L) and subjective well-being (SWB). This will be done in several stages. First, the benefits of the ability to understand and employ information from texts and to apply arithmetic operations will be described. Recently, scholars have pointed out that literacy has significant advantages in terms of subjective well-being, in addition to its well-known micro-macro economic and social outcomes.

In the second stage, through a survey of earlier empirical studies that explore literacy distribution among adults, I will offer some comments about the SWB data that can be derived from them. In the last stage, I will examine the relationship between literacy and subjective well-being in several OECD (Organization for Economic Co-operation and Development) countries. Special attention will be addressed to Italy and to two regions representing territorial differences in this country: Piedmont and Campania.

The Benefits of Education

The importance of the spread of education has long been discussed by scholars, politicians and journalists. Over the past few decades, interest in this topic has shown unprecedented growth, as has the literature on the subject.

Federica cornali is with University of Turin, Italy(e-mail:federica.cornali@unito.it)

II.

Each year, the OECD publishes Education Policy Analysis and Education at a Glance — books that describe the situation of the educational systems in the OECD member countries and partners using a set of indicators. Other international organisms (World Bank, UNESCO) draw up reports on the spread of education. In addition, several studies and investigations of education regularly appear in scientific reviews in many fields, including psychology, sociology, pedagogy and economics. The reasons for so much interest are clear: the benefits of education are numerous and appreciated at many different levels.

First of all, there are significant economic benefits at the individual level. High educational credentials are positively associated with higher income, with more highly qualified professions and with a lower risk of unemployment. In 1961, Theodore Schultz [1] published the paper Investment in Human Capital, inaugurating what was to become a flourishing area of study. In his opinion, education is a particular kind of capital: human capital. It is a stock of one's own accumulated goods that enables individuals to receive flows of income as if they were interest. Following Schultz, Becker [2] estimated that for every supplementary year of education, income increases by 5.5% for college graduates, 7% for high-school graduates and 15% for elementary school graduates.

A long series of concordant studies[1] has confirmed the success of the notion of human capital. More and more often, governments and international organizations issue declarations and promote action to enhance the human capital at countries' disposal. Among the more recent, I am reminded of the OECD appeal concerning "[...] the urgent need to implement effective strategies for lifelong learning for all, to strengthen the capacity of individuals to adapt and acquire new skills and competences" [3, 3].

The economic benefits of education are not restricted to an individual level: the effects are just as important at a macroeconomic level. It has been observed that a large part of countries' economic development depends on education. Fundamentally, there is one obvious consideration: if more highly educated people produce additional income, high levels of education of the whole population will as a consequence inject greater wealth into the general economy. Denison [5] [6], in estimating a function of production whose input is capital and the quality of human capital measured with an index of the workforce's years of education, showed that from 15 to 25% of GNP growth can be attributed to education. This percentage, moreover, is always on the increase. Recent

[1] See, e.g., Krueger and Lindahl [4].

studies using improved datasets that take possible measurement errors into account show that educational investment has a crucial impact on productivity growth — see, for example [7] and [8].

On the other hand, it is extremely reductive to narrow down the benefits of education to the economic sphere alone. Lately, it has become a common belief that a better education improves the general quality of life and subjective well-being. An educated person is able to accomplish daily duties with confidence and face unforeseen events. For these reasons, he is for the most part held in high social esteem. What is more, better educated people tend to be healthier because they can process more information about health risks than the less educated, and consequently adopt a more salutary life style: they are less frequently overweight and are at substantially lower risk of death from heart disease than their less-educated counterparts [9]. An additional year of schooling has been estimated to reduce the average daily cigarette consumption by 1.6 for men and 1.1 for women [10]. Better-educated people are also less likely to be overweight and tend to engage in more exercise per week than are less educated people — about 17 minutes for each additional year of schooling [11]. Moreover, education — in the opinion of Blanchflower and Oswald [12] — makes people less subject to depressive illness and happier. Moreover, the level of completed education is one of the most important predictors of many forms of political and social engagement. Verba, Schlozman and Brady [13] found that education, other things constant, increases political participation. Nie, Junn and Stehlick-Barry [14] Schuller et al. [15] found that education increases civic participation. A high level of literacy skills among adults have even shown a positive relationship with female representation in government positions [16] and lower crime rates [17].

Until 1998, the OECD described human capital as "the knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity" [3, 9]. But in consideration of several non-economic benefits that human capital offers, the OECD took steps to widen the concept, defining it as a body of "knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" [18, 19].

Thus, the original notion of basic human capital (BHC) has been replaced by a broader notion, that of wider human capital (WHC).

III. Measuring Literacy

The increased awareness of the importance of alphabetical competence in adulthood has made assessing it by means of a simple and readily measured proxy consisting of educational credentials ever more unsatisfactory. While measures of human capital were long based on completed years and levels of schooling, questionnaire tests of adult skills have become available in the past 15 years. The first survey, the International Adult Literacy Survey (IALS), was carried out between 1994 and 1998 and assessed more than 65,000 individuals from 23 countries.

Literacy, defined by IALS researchers as "the ability to understand and employ printed information in daily activities in both domestic and social life and at work to achieve one's goals, and to develop one's knowledge and potential" [19, 3] was measured operationally in terms of three domains:

Prose literacy: the knowledge and skills needed to understand and use information from texts, including editorials, news stories, brochures and instruction manuals.

Document literacy: the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts.

Numeracy: the knowledge and skills required to effectively manage the mathematical demands of diverse situations.

Test results were grouped into levels of performance from 1 to 5. Level 1 represents those who failed the test at a specified minimum level. Level 2 includes individuals with low alphabetical competence, unable to accomplish activities of advanced society. Level 3 represents the threshold of functional literacy, where we find those who have the minimum competence necessary for an active and conscious participation in working and social life. Individuals with good/excellent competence are classified in levels 4 and 5. The small percentage of individuals at level 5, that of alphabetical excellence, suggested unifying it with level 4 [20, *xi*].

The following figure shows the distribution of prose literacy level in the IALS sample.

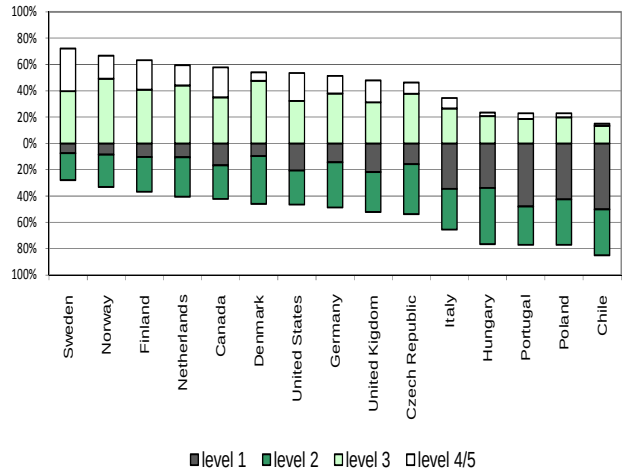

Fig. 1 Per cent of population aged 16-65 at each prose literacy level in several OECD countries, International Adult Literacy Survey (1994-1998). Source: [20]

The second survey, the Adult Literacy and Life Skills Survey (ALL), was carried out several years later. It involved a smaller number of countries (Bermuda, Canada, Italy, Nuevo León, Mexico, Norway, Switzerland and the United States) but extended the range of skills measured by adding problem

solving, i.e., the set of goal-directed thinking and action in situations for which no routine procedure is available.

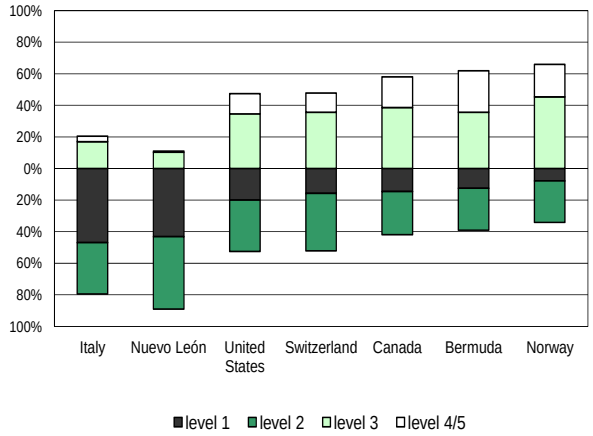

Fig. 2 Per cent of population aged 16-65 at each prose literacy level, Adult Literacy and Life Skills Survey (2003). Source: [21]

The IALS and ALL results are striking, as they show that many adults in developed countries (between 40 and 50% in the United States, the United Kingdom and Germany, but well over this percentage in Italy) have difficulties coping with literacy and numeracy related demands that are common in modern life and work.

IV. Some information on personal well-being from literacy surveys

The IALS and ALL databases are a unique collection of information on the level of literacy proficiency of the adult population. For this reason, they can be considered as an invaluable source of statistics on human capital in the investigated countries. These surveys do not stop at investigating literacy, but also provide data on the status of respondents in numerous area (education, profession, income, cultural practices, engagement in associations), thus allowing us to infer information about the entire 'wealth' (e.g., human capital and social capital) that constitutes personal resources.

The survey which inaugurated this topic at an international level, the IALS, only asked questions about health and sensory, comprehension or language disorders, but did not attempt to measure the self cognition of well-being over a broad spectrum. The subsequent survey, ALL, filled this gap. By means of thirteen questions (reported in the Methodological Appendix 1), the ALL researchers gained a body of information about respondents' physical and psychological health, level of energy and activity[2]. An appropriate estimation of SWB of the investigated population can be inferred from this information.

[2] This information was not collected for the Nuevo León sample.

Subjective well-being, according to Diener [22] refers to all of the various types of evaluations, both positive and negative, that people make of their lives. It includes reflective cognitive evaluations, such as personal satisfaction and work satisfaction, interest and engagement, and affective reactions to life events, such as joy and sadness. SWB is a cognitive, judgmental process and depends on a series of appropriate standards, but on the basis of their own unique set of criteria.

Although the principal goal of ALL was not to measure SWB, an estimation of this property[3] can be derived from the ALL dataset, especially as SWB assessment often consists only of a single item. Kahneman and Krueger observe that "The questions most frequently asked in research using surveys of subjective well-being elicit reports of global life satisfaction or happiness" [23, 6]. In the World Values Survey, for example, the question is: "All things considered, how satisfied are you with your life as a whole these days?" The General Social Survey (GSS) similarly asks Americans: "Taken all together, how would you say things are these days? Would you say that you are very happy, pretty happy, or not too happy?". In view of the fact that SWB is conceptualized as a broad, multi-faceted domain, an answer to only one question makes it difficult to give a valid representation.

But what are the different dimensions of SWB? Several heterogeneous items emerge from a review of the literature, ranging from physical health to emotional condition, and not omitting job satisfaction and social relationships.

Ryff and Keyes [24] argue that SWB incorporates six components: self acceptance; positive relation with others, autonomy, environmental mastery, purpose in life and personal growth.

The focus of recent studies has moved from objective to subjective dimensions. While the former referred to the 'reason' or a cognitive part of the quality of life (QLF), the latter concerns 'emotions' or the affective part, which refers to both the presence of positive affect and the absence of negative affect [25].

As the ALL questionnaire touches on all these areas, we can affirm that it satisfactorily covers the semantic extension of the SWB concept.

One further observation should be made: SWB, as a judgment of one's personal well-being, can be affected by contingent situations. Momentary mood seems to have a strong influence on global SWB judgments. The ALL items ask the respondents for judgments on SWB over quite a broad period (e. g., over the past 12 months or during the past 4 weeks), thus preventing a momentary frame of mind from prevailing. In studies on quality of life, in fact, the interest is usually not in short-term fluctuations of mood and emotions, but in the more stable aspects of one's life. We can thus affirm that the profiles of adult SWB are also valid as regards temporal criteria.What is the pattern of adult SWB in the ALL countries?

[3] Obviously, the optimal approach is to administer a specific tool for SWB assessment. Recent decades have seen a major increase in research on this topic, and numerous scales have been developed. Several are specific for certain categories (children, elderly persons, etc.), while others apply to the general population. One of the more noteworthy of these many scales is the Satisfaction With Life Scale (SWLS) by Diener *et al.* [26].

The ALL researchers combined questions from the questionnaire into a general health status variable using the Latent Class Analysis method. The analysis indicates that two identified classes of adults — comprising 52 and 20 per cent respectively — are very satisfied with their lives. Members of these groups tend to state that health does not impede their physical or social activities. The larger group of 52 per cent reports their physical and mental well-being in moderate terms, whereas the smaller group of 20 per cent tends to evaluate both their health and emotional status using the extreme positive categories.

Another 20 per cent of the sample regards their own health status as 'fair'. Finally, the remaining relatively small group (8 per cent) of adults report that they are adversely affected by both physical and emotional problems.

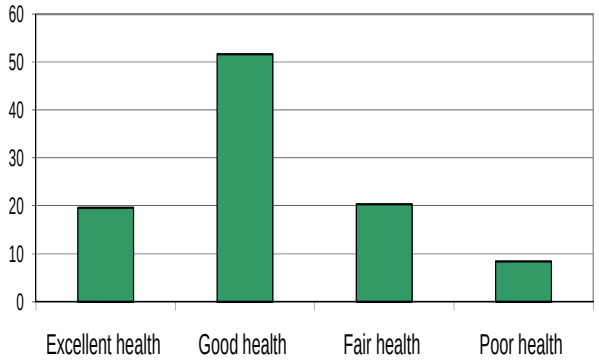

Fig. 3 Per cent of adults in each of four general health status groups, populations aged 16 to 65, Adult Literacy and Life Skills Survey (2003). Source: OECD [21]

The finding that these latter two groups have significantly lower average scores than the other groups on the literacy and numeracy scales induced the ALL researchers to assert: "it does support the growing recognition that skills and health status are related". [21, 250]

Though this assertion concurs with several empirical studies (e.g., [27], [28]), I believe it needs further examination. The association between SWB and literacy that emerges from the ALL database does not greatly affect the general configuration of the descriptive profiles of the adult population. Though undoubtedly differing in distribution of literacy levels, the investigated countries seem to have interesting similarities in SWB profiles: the relative proportions of the four classes in the general health status classifications are, on the whole, comparable across countries. In general, individuals with 'good' general health status predominate, followed similar percentages who affirm that they have 'excellent' or 'fair' health, whereas the group with 'poor' health[4] is much smaller. The between-country variations are slight.

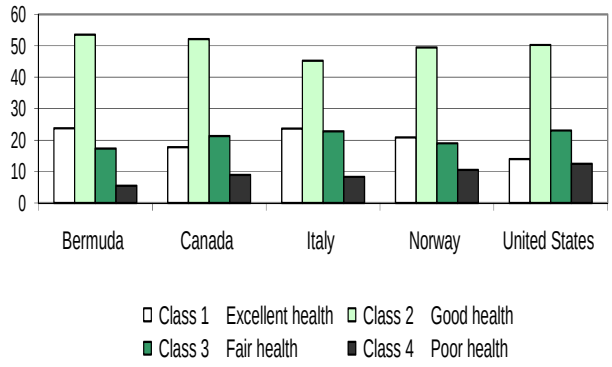

Fig. 4 Per cent of adults in each of four general health status groups by country, populations aged 16 to 65, Adult Literacy and Life Skills Survey (2003). Source: [21]

Certainly, the relation between SWB and literacy is not linear: a comparison across countries shows that higher levels of literacy do not match higher levels of SWB, and vice versa. Indeed in Italy, the percentage of individuals with excellent SWB is even slightly higher than in literate Norway (23.7 per cent vs. 20.9 per cent), while that of individuals with 'poor' SWB is lower (8.3 per cent vs. 10.5 per cent).

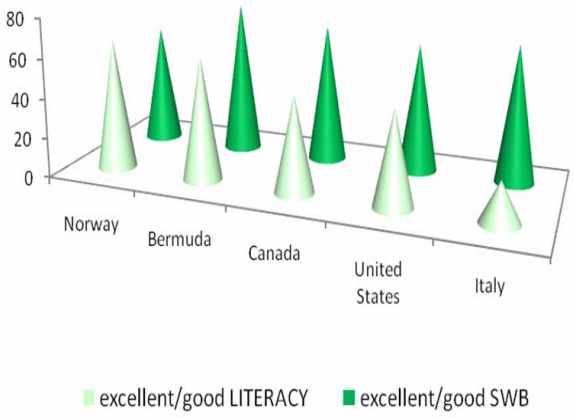

Fig. 5 Per cent of adults with excellent/good literacy or excellent/good subjective well-being by country, populations aged 16 to 65. Source: Processed from Adult Literacy and Life Skills Survey database

It would seem clear that the socio-cultural environment exerts a ubiquitous influence on behavior and perceptual experience. Factors that can exert an effect on SWB include: relative wealth of a nation and its welfare state, as well as

[4] Different language groups living in Switzerland. The variation within the Swiss population (OECD 2005) may be due in part to increased error variance associated with relatively small samples. For this reason Switzerland is not included in Fig. 3.

cultural frames from which differing societal priorities and values derive. In some cultures, for example, pursuit of positive emotions and SWB may be sacrificed in order to achieve other, more valued goals [29].

V. Focus on Italy

The Italian pattern of SWB is consistent with other countries, although Italy has a sizable illiterate population. This suggests that the relationship between literacy and well-being as perceived in Italy should be explored.

As shown above (fig. 1), Italy has significant numbers of adults with low skills: 81.2 per cent of the adult population does not attain skill level 3, the level considered by experts as a suitable minimum level for coping with the increasing demands of the emerging knowledge society and information economy. The older population is mainly illiterate (93.2 per cent of men and 94.3 per cent of women aged 56 to 65 are alphabetically incompetent).

Similarly, over 90 per cent of the population with a low level of educational attainment, i.e., who have completed only compulsory schooling, is illiterate. Alphabetical incompetence is also a significant problem among younger and better educated adults: 63.1 per cent of young people aged 26 to 35 and 59.3 per cent of college graduates is illiterate.

By contrast, the data that emerge for SWB is positive: 25 per cent of Italians reports ‘excellent‘ health, and 44 per cent ‘good’.

To explore the relationship between literacy and SWB, I think it appropriate to reduce the number of connotative variables of the proprieties of interest.

First, the variables that represent different domains of literacy were reduced by summarizing them in a single index of alphabetical skill. This index — from this point forward, “Literacy Index” — was obtained by carrying out principal component analysis on the scores that for each domain (prose, document, numeracy and problem solving) denote the level of proficiency of any respondent[5].

A different procedure was used to summarize the connotative variables of SWB. As SWB is a multifaceted domain, it is desirable to assess separate facets of subjective well-being. The variables are thus divided in two groups. The first represents moods and emotions, perceived mental and physical health. The second represents functional integrity.

Why this subdivision? The aim is to distinguish the general self-evaluation of personal well-being, performed on the basis of psychic self-perception (typically represented by a question such as: “On the whole, how do you feel about your life over the past 12 months?”) from self-evaluation of one’s own functionality performed by answering specific questions such as: “Does your health now limit you in climbing several flights of stairs?”).

Both groups of variables are submitted to optimal scaling analysis (see Methodological Appendix 1). The analysis provided three indices of WSB:

i. a “Personal Satisfaction Index” representing statements of general well-being;

ii. an “Eccentricity/Conventionality SWB Index” that signals a situation of extreme well-being or dissatisfaction;

iii. a “Functional Integrity Index”.

The various components of SWB are generally correlated. Thus, it is usually advantageous to assess each component separately, with measures dedicated specifically to that purpose [31].

The affective components of SWB often do vary independently of each other, and also independently of life satisfaction. It is important to use measures that can reveal these dynamics, particularly in research intended to assess the level and quality of SWB across adulthood, in order to detect both qualitative as well as quantitative changes in the subjective experience of adults as they age. It is also important in order to ensure that any potential distinction between the cognitive and affective components is not obscured.The SWB indices are related to other relevant variables with the intent to explore the degree of connection of SWB with age, gender, educational attainment, occupational status, profession, annual personal net income and, what is of most interest for the purpose of this study, the literacy index.The results of correlation analysis do not indicate that there is any significant relationship among these variables and the “Functional Integrity Index”. As expected, a negative correlation with age emerges, but is not very strong (r=0.2). Analysis yields a similar configuration for the “Personal Satisfaction Index”. In this case, it was preferred to remove the effect of cases at the extremes, which were retained for analysis with the “Eccentricity/Conventionality Index”.In general, it can be said that SWB is not strictly correlated with variables commonly known as social determinants in the Italian sample. Well-educated persons are not more satisfied than the poorly educated. At the same time, those who have prestigious professions or high annual incomes do not claim higher personal well-being. A common belief is that increased income is a source of increased SWB, but an analysis of the Italian ALL database indicates that this is not so. The relation between income and SWB is complex, and the evidence is often at odds with the prevailing viewpoint. In a recent review of the relation between money and SWB, Diener and Biswas-Diener [29] (2002) offer several replicable findings. At a national level, the correlation between a nation's wealth and the reports of SWB from its citizens is generally strong. Within nations, however, a different pattern emerges. For the most part, the correlations between income and SWB are low, and it appears that income has a decreasing influence in richer nations and among wealthier groups. The fact that — conversely to expectations and much of the literature on this topic[6] — a statistically significant relationship between literacy and SWB does not emerge from the ALL database could be plausibly explained by the low level of competence shown by illiterates in describing their own conditions and

[5] The decision to use a single index was validated by analysis results. In fact, the first component extract has high engine value (3.94) and can effectively show all the variables, reproducing 82.3% of the variance. The IALS researchers state that although for more detail they chose to represent literacy according to the three separate domains of prose literacy, document literacy and numeracy, they are highly correlated and, consequentially, “a robust general literacy factor can be found in the respondents“ [30, 142]

[6] For a review, see Denier and Biswas-Denier [29].

analyzing their own personal situation. Similarly, it could be hypothesized, for example, that responsibilities related to prestigious and well-remunerated professional roles — typical of well educated individuals — raise the level of personal stress and tension towards continuous improvement. If these higher expectations are not met, individuals might experience reduced SWB [32].

Two regions were then examined in order further explore the relationship between L and SWB in Italy: Piedmont and Campania.

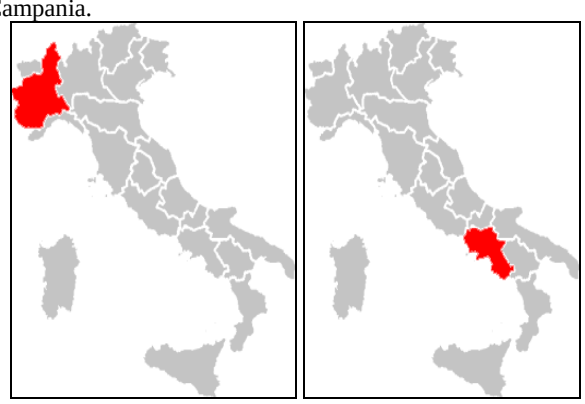

Fig. 6 Piedmont and Campania

I chose these regions because they epitomize the major differences between the North and South of Italy.

As well known, the regions in the North Italy have a better economy, more efficient public services and less pervasive organized crime (mafia, camorra) than the South.

There are also significant differences in literacy. This is attested by the levels of educational attainment, but is also well rendered by ALL results. The following figure (see fig. 7) shows that there is a preponderance of negative scores in the "Literacy Index" among the population of Campania, and a prevalence of positive scores among the population of Piedmont. Average scores, in fact, are -0.39 vs. 0.26.When Piedmont and Campania are compared as regards SWB, however, the differences are minimal. In Piedmont, 14.7 per cent of the population aged 16 to 65 is very satisfied with their life and 60 per cent are satisfied; 35.7 per cent say their health status is good, 26.3 per cent very good and 14.5 per cent excellent. In Campania, 16.7 per cent of population aged 16 to 65 is very satisfied with their life and 52 per cent are satisfied; 34.4 per cent report their health status as good, 26.2 per cent very good and 15.4 per cent excellent.

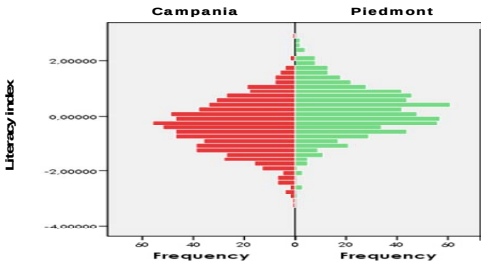

Fig. 7 "Literacy Index" scores in the populations of Campania and Piedmont. Source: Processed from Adult Literacy and Life Skills Survey database

In Piedmont, only 2.5 per cent of the interviewed sample claimed to be "very limited" and about 12 per cent "a little limited" due to their health status in doing moderate activities, such as moving a table or pushing a vacuum cleaner, during the 4 weeks prior to the interview. 13.4 per cent accomplished less than they would have liked and 10 per cent were limited in the kind of work or other activities as a result of physical problems. Emotive disorders influence activity to a lesser degree: 11.4 per cent accomplished less than they would have liked and 8.7 per cent did not do work or other activities as carefully as usual as a result of emotional problems, such as feeling depressed or anxious.

In Campania, only 1.7 per cent of the interviewed sample claimed to be "very limited" and about 12 per cent "a little limited" due to their health status in doing moderate activities, such as moving a table or pushing a vacuum cleaner during the 4 weeks prior to the interview; 15.4 per cent accomplished less than they would have liked and 12 per cent were limited in the kind of work or other activities as a result of physical problems. Emotive disorders influence activity to a lesser degree: 14.6 per cent accomplished less than they would have liked and 6.6 per cent did not do work or other activities as carefully as usual as a result of emotional problems, such as feeling depressed or anxious.

How can we explain SWB profiles of this kind in regions whose economic, social, cultural differences are so considerable? How can we form the perceptions of subjective well being?

But restricting the questions to the scope of this study: does education matter to quality of life? What is the relationship between literacy and SWB?

As mentioned earlier, the effect of education and literacy on well-being is more complex than direct.

To gain a better grasp of the phenomena, it would thus seem advisable to consider a broader range of factors that may have an effect on SWB. In addition to the literacy level and socio-demographic characteristics, two other factors are significant: "cultural practices" and the "social relationship".

The literature on this topic credits both as being factors that have a particular influence on the formulation of personal well-being judgments. Regardless of educational attainment, quality of life can be improved by reading, being up to date on the local, national and international goings-on, and being interested in cinema, theatre and arts. Silverstein and Parker [33] and Galloway [34] found in research that cultural activities contribute to positive consequences in people's subjective evaluation about their general life situation. There is more abundant empirical evidence that good quality social relationships are a very influential factor in experiencing high levels of SWB. The ALL background questionnaire includes questions such as: "How often do you use a library? Would that be weekly, monthly, several times during the year, once or twice during the year or never?" and "During the last 12 months did you participate in a neighbourhood, civic or community association or a school group?" Consequently, it makes it possible to construct two synthetic indices that we

will call the "Cultural Practices Index"[7] and "Social Relationships Index"[8].An analysis of variance was thus performed, assuming SWB as a dependent variable (from time to time assuming as representative the three indices: "Personal Satisfaction Index", "Eccentricity/Conventionality SWB Index", "Functional Integrity Index"); independent variables were age, gender, education, professional status, region of residence, "Literacy Index", "Cultural Practices Index" and "Social Relationships Index". For the "Personal Satisfaction Index", the F-values show that the variables which significantly affect personal judgment of well-being are gender and age. Literacy was not found to be an influential variable, while educational attainment, though not significant, has a slightly higher F-value. Similarly, neither the "Cultural Practices Index" or the "Social Relationships Index" were relevant to SWB. Only one new aspect emerges: a certain influence of place of residence in determining the perception of one's personal well-being. Living in Campania rather than in Piedmont is a variable that has a mild impact on the average "Personal Satisfaction Index" (see Methodological Appendix 2).

Although contrasting with much of the literature on the topic, these results confirm what has been said so far about the Italian and international ALL sample: the link between literacy competence and personal well-being is not easily identifiable. It is well known that judgments of one's personal satisfaction depend on the reference environment.

It is possible that illiterate people report a good level of SWB inasmuch as they, living in all likelihood in deprived socio-cultural surroundings, have a frame of reference and are inclined to interpersonal comparisons that make them feel satisfied in any case.

The idea that people's evaluations of an important aspect of their lives depends on different socially determined standards of reference comes from the classic study American Soldier [35] and is still valid today.

However, these hypotheses are very general and cannot be verified using data derived from ALL database. In addition, they raise a broader question: "What are the social standards people use to assess their own satisfaction?"

VI. Concluding Remarks

Education has always been considered important in advanced society, both at an individual and a social level. Several authors have shown the importance that education has in increasing the sense of control over life, personal satisfaction, and access to stable relationship, or in other words on increasing SWB. Exploring the relationship between L and SWB calls for a thorough definition of these concepts, which must be operationalized and assessed as accurately as possible. The ALL survey offered a unique opportunity to simultaneously assess literacy and subjective well-being in a large international sample. However, analyses carried out in this study with the "Literacy Index" and various SWB indices constructed from the ALL database do not show any strong relationship between alphabetical competence and personal satisfaction. Indeed, there are cases in the sample examined in which a high level of literacy corresponds to a relatively low "Well-Being Index" (e. g. Norway) and vice versa (e. g. Italy).This article suggests that additional hypotheses arising from typical themes and interests of sociological research must be formulated and examined. Indeed, findings for Italy indicate that regional origin, as well as age and gender, is relevant to personal judgments of well-being. The analysis (which establishes relationships between cultural, environmental and value aspects) points to promising directions for future research.

Methodological Appendix 1

The ALL questions used to collect information about SWB are as follows:

G10 On the whole, how do you feel about your life over the past 12 months? Would you say that you are extremely satisfied, satisfied, unsatisfied or extremely unsatisfied?	
1	Extremely satisfied
2	Satisfied
3	Neither satisfied nor unsatisfied
4	Unsatisfied
5	Extremely unsatisfied
6	No opinion
8	Refused

G11 In general, would you say your health is?	
1	Excellent
2	Very good
3	Good
4	Fair
5	Poor
8	Refused

G12 The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much – would that be limited a lot or limited a little?

	Yes, limited a lot	Yes, limited a little	No, not limited at all	Refused
a) Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf	1	2	3	8
b) Climbing several flights of stairs	1	2	3	8

[7] This index was constructed by using Optimal Scaling Analysis (HOMALS) to synthesize 23 variables. In addition to the question quoted, the questions that it generated included: "How often do you read or use information from books – fiction or non-fiction – as part of your daily life?", "Is reading one of your favourite activities?".

[8] This index was constructed by using Optimal Scaling Analysis (HOMALS) to synthesize 12 variables. In addition to the question quoted, the answers to questions such as the following were used as a source: "During the last 12 months have you participated in a cultural, educational or hobby group?". There was one serious shortcoming: in constructing the "Social Relationships Index", it was not possible to use the variables of marital status of respondents, as they are not available in the ALL dataset.

G14 During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	No	Refused
a) Accomplished less than you would like	1	2	8
b) Didn't do work or other activities as carefully as usual	1	2	8

G13 During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	Yes	No	Refused
a)Accomplished less than you would like	1	2	8
b) Were limited in the kind of work or other activities	1	2	8

G17 During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)? Was it...

1 All of the time
2 Most of the time
3 Some of the time
4 A little of the time
5 None of the time
8 Refused

G15 During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)? Was this...

1 Not at all
2 A little bit
3 Moderately
4 Quite a bit
5 Extremely
8 Refused

G16 These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	A good bit of theti me	Some of the time	A little of the time	None of the time	Refu -sed
a) Have you felt calm and peaceful?	1	2	3	4	5	6	8
b) Did you have a lot of energy?	1	2	3	4	5	6	8
c) Have you felt downhear ted and blue?	1	2	3	4	5	6	8

The variables are divided in two groups according to semantic area. Each group is then submitted to HOMALS optimal scaling analysis.

The variables in the first group are:

- g10; g11; g16a; g16b; g16c.

They represent moods and emotions, perceived mental and physical health.

The variables in the second group are:

- g12a g12b; g13a; g13b; g14a; g14b; g15; g17.

They represent the capacity to accomplish everyday tasks. Two relevant dimensions emerge in the first analysis. They are orthogonal, and thus relatively independent.

The dimensions of the HOMALS solution can be interpreted by intuitive inspection of the positions of the points (rows and categories). This is enhanced by labeling the points with the values of the variables used in the analysis.

.

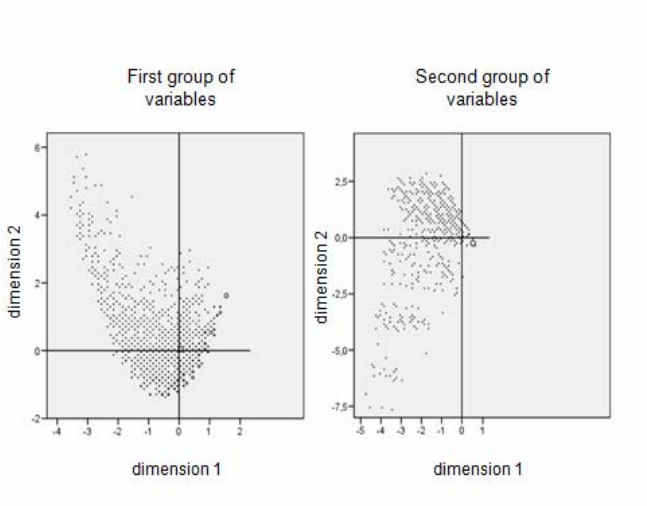

Fig. 8 Object scores. Source: Processed from Adult Literacy and Life Skills Survey database (2003)

As shown in Figure 8, the two analyses produced different results. HOMALS quantification of the categories of each variable shows that dimension 1 differentiates the statements of personal well-being (general satisfaction or dissatisfaction), while dimension 2 identifies a positional status distinguishing individuals according to their greater or lesser eccentricity. Only dimension 1 is relevant in the second analysis

Methodological Appendix 2

TABLE I
Tests of Between Subjects effects

Tests of Between Subjects effects
Dependent Variable: «Personal Satisfaction Index»

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	Hypothesis	2,065	1	2,065	2,509	,114
	Error	378,107	459,31	,823(a)		
Age	Hypothesis	26,026	1	26,026	32,623	,000
	Error	840,052	1053	,798(b)		
Gender	Hypothesis	13,192	1	13,192	16,535	,000
	Error	840,052	1053	,798(b)		
Education	Hypothesis	1,995	1	1,995	2,501	,114
	Error	840,052	1053	,798(b)		
Region	Hypothesis	13,994	2	6,997	8,771	,000
	Error	840,052	1053	,798(b)		
Literacy Index	Hypothesis	4,660	3	1,553	1,860	,168
	Error	17,445	20,886	,835(c)		
Occupation	Hypothesis	13,375	8	1,672	2,096	,034
	Error	840,052	1053	,798(b)		
Cultural Practices Index	Hypothesis	2,972	3	,991	1,235	,296
	Error	562,182	701,11	,802(d)		
Social Relationships Index	Hypothesis	,824	2	,412	,516	,597
	Error	840,052	1053	,798(b)		
*Cultural Practices Index * education*	Hypothesis	4,057	3	1,352	1,695	,166
	Error	840,052	1053	,798(b)		
*Literacy Index * Cultural Practices Index*	Hypothesis	7,707	9	,856	1,073	,380
	Error	840,052	1053	,798(b)		
*Cultural Practices Index * Social Relationships Index*	Hypothesis	4,626	6	,771	,966	,447
	Error	840,052	1053	,798(b)		

a ,034 MS(Literacy Index) + ,966 MS(Error)

b MS(Error)

c ,639 MS(Literacy Index * Cultural Practices Index) + ,361 MS(Error)

d ,070 MS(Literacy Index * Cultural Practices Index) + ,930 MS(Error)

REFERENCES

[1] T. W. Schultz, "Investment in Human Capital," The American Economic Review, 1(2), 1961, pp. 1-17.
[2] G. S. Becker, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. Cambridge: National Bureau of Economic Research, 1975.
[3] OECD, Human Capital Investment. An International Comparison. Paris: Oecd, 1998.
[4] A. Krueger & M. Lindahl, "Education for growth: Why and for whom?," Journal of Economic Literature, XXXIX, pp. 1101-1136, 2001.
[5] E. Denison, Why Growth Rates Differ. Washington D.C.: The Brookings Institution, 1967.
[6] E. Denison, Accounting for Slower Economic Growth: The United States in the 1970s. Washington D.C.: The Brookings Institution, 1979.
[7] D. Cohen & M. Soto, "Growth and human capital: Good data, good results," CEPR discussion paper, vol 3025, London: Centre for Economic Policy Research, 2001.
[8] A. Bassanini & S. Scarpetta, "Does human capital matter for growth in OECD countries? Evidence from pooled mean-group estimates," OECD Economics Department Working Paper, 282, 2001.
[9] J. Feldman, D. Makuc, J. Kleinman & J. Cornoni-Huxley, "National trends in educational differentials in mortality," American Journal of Epidemiology, 129, pp. 919-933, 1989.
[10] B. Wolfe and R. Haveman, Accounting for the Social and Non-market Benefits of Education, paper presented at Symposium on the Contribution of Human and Social Capital to Sustained Economic Growth and Well Being, Quebec, March 19-21, 2000.
[11] D. Kenkel, "Health Behavior, Health, Knowledge and Schooling," Journal of Political Economy, 99(2), pp. 287-305, 1991.
[12] D. G. Blanchflower and A. J. Oswald, Well-being over Time in Britain and the USA. Working Paper 7487, Cambridge: National Bureau of Economic Research, 2000.
[13] S. Verba, K. L. Schlozman and H. E. Brady, Voice and Equality: Civic Voluntarism in American Politics. Cambridge, M.A.: Harvard University Press, 1995.
[14] N. H. Nie, J. Junn and K. Stehlik-Barry Education and Democratic Citizenship in America. Chicago: University of Chicago Press, 1996.
[15] T. Schuller, J. Bynner, A. Green, L. Blackwell, C. Hammond and N. J. Preston, Modelling and Measuring the Wider Benefits of Learning: An Initial Synthesis. London: Centre for Research on the Wider Benefits of Learning Institute of Education/Birkbeck College, 2001.
[16] UNDP, Human Development Report. New York: Undp, 1999.
[17] J. R. Beherman and N. Stacey, Eds., The Social Benefits of Education. The University of Michigan Press, 1997.
[18] OECD, The Well-being of Nations. The Role of Human and Social Capital. Paris: Oecd, 2001.
[19] OECD, Literacy, economy and society: Results of the First International Adult Literacy Survey. Paris-Ottawa: Oecd, 1995.
[20] OECD, Literacy in the Information Age. Paris: Oecd, 2000.
[21] OECD, First Results of the Adult Literacy and Life Skills Survey. Paris: Oecd, 2005.
[22] E. Diener, Guidelines for National Indicators of Subjective Well-Being and Ill-Being, mimeo, 2005.
[23] D. Kahneman and A. B. Krueger, "Developments in the Measurement of Subjective Well-Being," Journal of Economic Perspectives, 20, 1, pp. 3-24, 2006.
[24] C. D. Ryff and C. L. Keyes, "The Structure of Psychological Well-Being Revisited," J. Pers. Soc. Psychol. 69(4), pp. 719-27, 1995.
[25] E. Diener, "Assessing Subjective Well-Being: Progress and Opportunities," Social Indicators Research, 31 (2), pp. 103-157, 1994.
[26] E. Diener, M. Emmons, R. J. Larsen and S. Griffin, "The satisfaction with Life Scale," Journal of Personality Assessment, 49, pp. 71-75, 1985.
[27] R. Rudd, I. Kirsch and K. Yamamoto, Literacy and Health in America. A Policy Information Center Report. Princeton, NJ: Educational Testing Service, 2004.
[28] B. D. Weiss, Epidemiology of Low Health Literacy, in: Understanding Health Literacy: Implications for Medicine and Public Health, J. G. Schwartzberg, J. B. Van Geest and C. C. Wang, Eds., AMA Press, 2005, pp. 17-39.
[29] E. Diener and R. Biswas-Diener, "Will money increase subjective well-being?", Social Indicators Research, 57, pp. 119-169, 2002.
[30] D. Rock, "Validity Generalization of the Assessment Across Countries", in S. T. Murray et al., Eds., Adult Literacy in Oecd Countries. Technical Report on the First International Adult Literacy Survey, pp. 135-142, Washington: U.S. Department of Education, 1998.
[31] W. Pavot and E. Diener, "Well-being (including life satisfaction)," in Encyclopedia of psychological assessment, 2, R. Fernandez Ballesteros, Ed., London: Sage, 2003, pp. 1097-1101.
[32] E. Diener, E. M. Suh, R. E. Lucas and H. L. Smith, "Subjective well-being: Three decades of progress," Psychological Bulletin, 125, pp. 276-302, 1999.
[33] M. Silverstein and M. G. Parker, "Leisure activities and quality of life among the oldest old in Sweden," Research on Aging, 24(5), pp. 528-547, 2002.
[34] S. Galloway, "Cultural participation and individual quality of life: A review of research findings," Applied Research in Quality of Life, 1, pp. 323-342, 2006.
[35] S. A. Stouffer, E. A. Suchman, L. C. Devinney, S. Star and R. M. Williams, The American Soldier: Adjustment during Army Life. Princeton: N.J. Princeton University Press, 1949.