

# Great Expectations: The Unintended Consequences of Educational Choices

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**Abstract** Human capital is invariably found to be an important explanatory variable of various proxies for well being (WB), i.e. income, happiness, job and life satisfaction, and health status. Nevertheless, to date few systematic efforts have been made to explain its various interconnected functions. The *U-shaped* age-SWB relation found in many empirical studies suggests that investigating the pattern of different measures of WB over people's life cycles may reveal important information and provide useful insights into the principal mechanisms that connect human capital and WB. In this paper, I explore data drawn from the Survey on Household Income and Wealth (SHIW) conducted by the Bank of Italy, which is a rich source of information on people's socioeconomic and educational backgrounds, educational and skill mismatches in the workplace, and various measures of WB such as income, happiness, job satisfaction, and health status. I adopt a novel approach based on the idea that one should look at the overall contribution of education to well being within people's life-cycles. The tentative explanations of my empirical findings are: (a) more educated people and people with vocational educations experience wide mismatches in their aspirations and expectations early in their adult lives; (b) these mismatches are largely confined to the labour market; and (c) the curvature of the *U-shaped* age-happiness relationship depends on the level and type of education. The suggested interpretation of these results is that education affects both people's expectations and the way they react to unfulfilled aspirations.

**Keywords** Aspirations · Expectations · Education · Well being

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## 1 Introduction

Systematic empirical evidence shows that the age-happiness, age-life satisfaction and age-job satisfaction relationships are *U-shaped* (Clark et al. 1996; Easterlin 2006; Blanchflower and Oswald 2007; Ferrante 2009), and that this curvature may depend on people's educations (Ferrante 2009): happiness and life satisfaction begin to decline early in adult life—more rapidly for more highly-educated people—and reach their low point between the ages of 40 and 50.

Although education is invariably found to be an important explanatory variable of various proxies for well being (Frey and Stutzer 2002) (income, health status, happiness, job and life satisfaction, and educational choices are the most important sources of regret in life (Roese and Summerville 2005), to date few systematic efforts have been made to explain its various interconnected functions. From an empirical viewpoint, the connection between education and WB is somewhat vague, and it has manifold facets, of which education is the principal one: “the educational tracking of persons leads to persistent differences in well-being”.

Why do people experience a drop in their well being right at the beginning of their adult lives, and why does the extent of this drop depend on education? What determines the *U-shaped* age-happiness relationship and the happiness recovery process? One suggested explanation of the initial drop in well being is that (a) people's well being depends strongly on the comparison between *decision and experienced utility*, and (b) people formulate systematically biased predictions about their socioeconomic opportunities (Ferrante 2009; Clark et al. 2015)<sup>1</sup> which materialize at the beginning of their adult lives. Conjectures on the formation of biased predictions include the idea that people lack information about their unobservable abilities or talents and/or that people are affected by a *self-serving bias* (Babcock and Loewenstein 1997). The gap between predictions and outcomes may persist even if people know their abilities but are not aware of the abilities of others, and hence are unable to assess the systematic link between abilities and rewards. These explanations are not mutually exclusive, however: if socio-economic expectations are based on imperfect information and/or a *self-serving* process of information selection, people may form biased expectations about what they deserve, and may experience frustration over unfulfilled expectations.<sup>2</sup>

In addition to biased aspirations, the realization of expectations can also be delayed or inhibited by contingent or long-lasting mismatches between people's education and skills and those required by the labour market (Allen and van der Velden 2001). The causes of these mismatches are rather complex, and may stem from both supply and demand factors: that is, the quality of the educational system, *mistakes* in educational choices, labour

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<sup>1</sup> An alternative explanation for this outcome is that educational choices are influenced by parents, and that the latter do not know their children's true preferences.

<sup>2</sup> Of course, one should find the opposite result for more talented and luckier people. I posit that when loss aversion obtains, people's hedonic adaptation to positive surprises is very rapid. Income expectations provide a good example of how imperfect information or the presence of a *self-serving bias* may affect socioeconomic expectations. Although the typical shape of income distribution is right skewed, it is hard to find people who believe that they deserve to earn less than the average of the group that shares the same observable characteristics. On these grounds, one may take the degree of (right) skewness of income distribution or income inequality for given characteristics as measures of the likelihood of frustration deriving from unfulfilled socioeconomic expectations in a given population. On this premise, people's chances of experiencing frustration over unfulfilled expectations may well increase with educational attainment owing to its impact on the skewness and inequality of the socioeconomic outcomes (Ferrante 2009).

market frictions, inefficient recruitment practices, inefficient human resource management practices, or insufficient investments in workers' training (Ferrante et al. 2010).

Finally, people may experience aspiration biases because their educational and career choices are guided by an *excessive* concern for specific life domains, such as income or social status, and performances in different domains are not positively correlated: indeed, when choosing how much or what to study, a rational agent should consider the impact of these choices on all the domains of his or her life. Cultural models transmitted by families or conveyed by society through education (Bowles et al. 2001) may be responsible for generating extrinsic motivations—the development of incentive-enhancing preferences—which may ultimately lead to undesirable outcomes such as these later in life.<sup>3</sup>

The actual complexity and riskiness of decisions regarding investments in education is revealed by the empirical evidence on what we regret most in life, which shows that educational and career choices are the most important source of regret<sup>4</sup> (Table 1).

It is noteworthy that the *locus* of the connection between the two main sources of regret—educational and career choices—is the labour market.

Various previous studies have looked separately at single well being measures (happiness, life satisfaction, job satisfaction, and health status). After controlling for the direct positive link between education and income, the evidence is mixed in the case of happiness and life satisfaction (Clark and Oswald 1996; Ferrante 2009; Cunado and Perez De Gracia 2012; Castriota 2006). Conversely, it is fairly clear for job satisfaction (Clark et al. 1996; Clark and Oswald 1996; Clark 1997) and health status, showing a negative impact for the former and a positive one for the latter (see, for example, Cutler and Lleras-Muney 2006, 2010).<sup>5</sup>

In this paper, which builds on Ferrante (2009), I address the connections between education and subjective well being, and to test my main predictions about this nexus, I explore data drawn from the Survey on Household Income and Wealth (SHIW) conducted by the Bank of Italy (2008), which is a rich source of information on people's socioeconomic and educational backgrounds and educational and skill mismatches in the workplace, and various measures of subjective well being (SWB) such as happiness, job satisfaction and health status. I adopt a novel approach based on the idea that one should look at the overall contribution of education to well being within people's life-cycles. In this context, happiness should be seen as the most representative index of subjective well being, the dynamics of which are mainly determined by job satisfaction, income and health status.

Owing to the difficulties involved in disentangling the direct effects of education on the most inclusive measure of WB (happiness) from the effect generated by other life domains, the conjectures proposed here are not based on robust econometric analysis revealing causal links, but rather on an interpretation of the combined evidence that emerges from a descriptive statistical analysis and of certain econometric exercises, which proves to be the main weakness of this paper.

First, I analyse the impact of human capital on various measures of WB—income, happiness, job satisfaction and health status—within a life cycle perspective. Second, I estimate and discuss the effects of educational and skill mismatches on happiness, and not just on job satisfaction. Third, I discuss certain conjectures on the *U-shaped* age-happiness

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<sup>3</sup> On this point, see Pugno (2013).

<sup>4</sup> For example, should have stayed at school, should have studied harder, should have got another degree.

<sup>5</sup> "An additional 4 years of education lowers 5-year mortality by 1.8 % points; it also reduces the risk of heart disease by 2.16 % points, and the risk of diabetes by 1.3 % points.

**Table 1** What we regret most in life (Roese and Summerville 2005)

Area	%
Education	32.2
Career	22.3
Romance	14.8
Being parents	10.2
Self	5.5
Leisure	2.5
Finance	2.5
Family	2.3
Health	1.5
Friends	1.5

relationship based on the role of education in building aspirations and expectations. Finally, I introduce the distinction between general and vocational education and provide some preliminary evidence on its importance for analysis of the impact of education on subjective well being.

The main conclusions of this paper are as follows: (a) people experience wide mismatches in their aspirations and expectations early in their adult lives; (b) these mismatches are largely confined to socioeconomic outcomes in the labour market; and (c) the curvature of the *U-shaped* age-happiness relationship depends on the level and type of education, and may reflect how people adjust to mismatches. The suggested interpretation of this result is that education affects both people's expectations and how they are able to respond to unfulfilled expectations.

The paper is organized as follows. Section 2 discusses the main links connecting human capital and well being. Section 3 illustrates the descriptive statistical evidence, the econometric results, and their interpretation. Section 4 draws the main conclusions.

## 2 Human Capital and Well Being

How does human capital—that is, education and experience—come into this picture (Michalos 2008)? Over and above the effects of their innate abilities and socioeconomic backgrounds, Individuals' socioeconomic performance depends on the cognitive and non-cognitive skills that they have acquired early in life<sup>6</sup> through education and experience: “Cognitive and non-cognitive skills can affect the endowment of persons, their preferences, their technology of skill formation...or all three. Thus, they might affect risk preference, time preference, and efficiency of human capital productivity without necessarily being direct determinants of market wages. Cognitive and non-cognitive skills might also raise the productivity of workers and directly affect wages. Our empirical analysis shows that both cognitive and non-cognitive skills play multiple roles” (Heckman et al. 2006, p. 8).

Education and its interactions with experience are the most important inputs in the technology of human capital generation and the main drivers of WB in various life

<sup>6</sup> The supporting empirical evidence on the impact of cognitive and non-cognitive skills on an individual's life is impressive (see e.g. Kuncel et al. 2004; Ree and Carretta 2002; Schmidt 2002, p. 200).

domains. The level and type of education matter for our meta-skills (transversal, general and specific) and personal identity, and therefore also for our socioeconomic aspirations. Personality traits are often invoked as important innate characteristics affecting people's accumulation of cognitive and non-cognitive skills and, therefore, their WB as well.

The basic cognitive and non-cognitive skills required in any life domain are acquired early in life through compulsory education. It is therefore above this threshold that educational choices affect people's WB through the acquisition of the specific skills needed in various life and work-related domains. This is consistent with the idea that whereas primary education is intended to provide the basic cognitive and non-cognitive skills necessary in every life domain, the main purpose of secondary and tertiary education is to develop those specific skills and incentive-enhancing preferences required in the labour market (Bowles et al. 2001). This distinction is important for explaining the build-up of aspirations in that the acquisition of education after compulsory schooling can be expected to fuel education-related socioeconomic aspirations: that is, material aspirations (Easterlin 2003, 2005). It is not surprising, therefore, that in Ferrante (2009), the ambiguous effect of education on life satisfaction appears after compulsory schooling has been completed.

In this context, the distinction between vocational and general education should matter for well being over the entire life cycle as well. Hanushek et al. (2011, 2016), for instance, provide evidence that there is a trade-off between general and vocational education in terms of employability over the life cycle: in comparison with general education, vocational education increases people's employability when they are young at the cost of reducing it later in life. A similar trade-off may be expected to emerge for other life domains. The suggested explanation here is that general education may increase people's ability to adjust to life events in different domains over their entire life-cycle.

The central idea of this paper is that four major links connect human capital (education and experience) to subjective well being. First, human capital improves decision-making skills in a variety of life domains.<sup>7</sup> Second, it improves the skills and knowledge associated with doing things and enjoying life: that is, it improves productivity in various life domains. Third, human capital shapes identity and personality traits and, fourth, by doing so, it shapes aspirations in different life domains. The first two effects are expected to improve people's performance and subjective well being in diverse life domains. More ambiguous is the joint impact of human capital through people's identity and aspirations. Ferrante (2009) contends that people's aspirations constitute a major systematic endogenous source of prediction errors that may adversely affect SWB, at least early in adult life: insofar as people fail to anticipate endogenous changes in their aspirations correctly (Frey and Stutzer 2002; Stutzer 2003; Clark et al. 2008, 2015), they may experience systematic frustration of their expectations, and experience aspiration biases. There is clear-cut evidence that educational choices are the most important potential source of regret in life (Roese and Summerville 2005); hence, there may be a trade-off in acquiring education: the well being advantage of enjoying the fruits of more effective skills may be counterbalanced by the negative effects that stem from exaggerated expectations.

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<sup>7</sup> Scitovsky's words on the conventional view of rational agents' ability to choose are illuminating in this regard: "The economist's traditional picture of the economy resembles nothing so much as a Chinese restaurant with its long menu. Customers choose from what is on the menu and are assumed always to have chosen what most pleases them. That assumption is unrealistic, not only of an economy, but of Chinese restaurants. Most of us are unfamiliar with nine-tenths of the *entrées* listed; I seem invariably to order either the wrong dishes or the same old ones. Only on occasions when an expert does the ordering do we realize how badly we do on our own and what good things we miss" (Scitovsky 1992, p. 149–150).

The recognition of aspiration biases takes time: indeed, empirical evidence suggests that people's age matters greatly for WB. The *U-shaped* age-happiness relationship is the most intriguing aspect of this evidence. This pattern may depend both on the impact of aspirations over time (Ferrante 2009) and on the mechanisms governing the net accumulation of human capital. Most human capital is generated early in life through education and experience; however, it is also accumulated in adulthood through training and experience, although the productivity of the latter processes depends greatly on the early investment in education (Cunha and Heckman 2007). Of course, over a person's lifetime, the stock of human capital depletes, and the net accumulation may even become negative.

Based on these premises, and in order to simplify my analysis, I posit that the endowment of human capital depends on education, learning, and hedonic experience—that is,  $HC = HC(\text{Education, Learning by doing, Hedonic experience})$  and I distinguish between the various socioeconomic domains that contribute to WB and the impact of HC on each of them. The first and most important domain is the employment condition, which yields WB through income (I) and job satisfaction (JS). The second most important life domain affected by HC is health status (HS). Finally, I posit that the most inclusive measure of WB is provided by happiness  $H = H(\cdot)$ . If one assumes that HC affects happiness both directly and indirectly, through I, JS and HS, the empirical relation to be investigated is:

$$H = H(I, JS, HS, HC) \quad (1)$$

where the post-school accumulation of human capital through learning by doing and hedonic experience is assumed to be captured by age.

### 3 Education, Human Capital and WB: The Initial Empirical Evidence

The Bank of Italy's Survey on Household Income and Wealth (SHIW) began in the 1960s with the aim of gathering data on the incomes and savings of Italian households. Over the years, the scope of the survey has grown, and it now includes wealth and other aspects of households' economic and financial behaviour, such as what payment methods are used.<sup>8</sup>

The sample in the most recent surveys comprises approximately 8000 households ( $\approx 24,000$  individuals) distributed over 300 Italian municipalities and 103 provinces. The 2006 survey contains detailed information on people's socioeconomic and educational backgrounds, educational and skill mismatches in the workplace, and various measures of SWB such as happiness, job satisfaction, and health status. The sample containing information on I, H includes 3801 individuals; the sample with information on HS includes 8394 individuals, and the sample containing information on JS only includes 1316 individuals. Since we are interested in the entire set of labour market outcomes—wages, job satisfaction, and educational and skill mismatches—the unemployed are not included in the sample.

On the premise that decisions to invest in human capital through the acquisition of education are risky, and that this should matter for people's educational choices and well being, I will consider both the mean and standard deviation of the four well being measures in the descriptive analysis: wage income (I), happiness (H), job satisfaction (JS) and health status (HS). Of course, the data on wage income and job satisfaction are available only for

<sup>8</sup> See also Scoppa and Ponzo (2008) for an empirical analysis of the determinants of WB based on the SHIW data. The descriptive statistics are shown in the appendix.

**Table 2** Mean happiness and health status for different groups

	Happiness (very happy = 10)	Health status (very good = 1, very bad = 5)
Blue collar	6.7	3.2
White collar	7.3	3.2
Schoolteacher	7.3	3.2
Middle manager	7.2	3.3
Top manager	7.7	3.4
Professional	7.2	3.3
Entrepreneur	6.8	3.4
Sole proprietor	7.1	3.2
Family firm owner and manager	7.0	3.1
Partner and manager of a firm	7.6	3.2
Searching for first job	6.9	3.1
Unemployed	6.0	2.8
Housewife	6.6	2.8
Renter	6.5	2.3
Retired from work	6.4	2.5
Other retired	5.3	2.0
Student	7.6	3.4
Employed (non-standard contract)	6.1	3.0
Mean	6.6	2.8

those in employment. Hence I will omit any information regarding the unemployed from my analysis. For this reason, in Table 2 I show the mean happiness and health status for different groups, including those that will be excluded from the analysis at a later stage.

Tables 3, 4 and 5 show the mean and standard deviation of the four measures of well being, depending on education (in Table 3, CE = compulsory education; SE = secondary education; TE = tertiary education) and age.

The mean<sup>9</sup> of the four indicators increases monotonically with educational attainment, whereas the standard deviation decreases monotonically with education for the three measures of SWB and increases sharply only for income (Table 5). Education therefore appears to be a risky investment in the labour market, but not in other socioeconomic domains. Most importantly, the probability that expectations will not be fulfilled decreases over time for the first three measures, and increases for income up to around 60 years of age. It is worth noting that the mean–variance approach, which suggests that the two measures of socioeconomic performance should be positively related, holds for income but not for the other measures of WB, for which the opposite is true.

Further exploration of the data reveals some useful information. First of all, the standard deviation of income shows an interesting time pattern: it increases and is very large between 30 and 40 years of age, reaching its maximum at around the age of 50, and declines sharply thereafter (Fig. 1). The opposite holds for SWB: the standard deviation of

<sup>9</sup> I performed the mean comparison tests and all the means were significantly different (at 99 %).

**Table 3** The means of I, H, JS and HS by educational level

Schooling	Income (mean)	Income (median)	Happiness	Job satisfaction	Health status
Tertiary degree	183	168	110	107	114
Secondary school diploma	123	133	108	102	112
Compulsory schooling	94	102	102	97	105
Elementary school	69	76	90	92	83
Total	100	100	100	100	100

Source: elaboration based on the Bank of Italy SHIW database, 2008; total = 100

**Table 4** The median of I and the means of I, H, JS and HS by age

	Income (mean)	Income (median)	Happiness	Job satisfaction	Health status
Below 30	80	77	112	95	125
31–40	101	103	109	99	119
41–50	115	119	105	101	115
51–65	116	121	101	101	102
Over 65	78	78	92	112	81
Total	100	100	100	100	100

Source: elaboration based on the Bank of Italy SHIW database, 2008; total = 100

**Table 5** The standard deviation of income by age and educational level

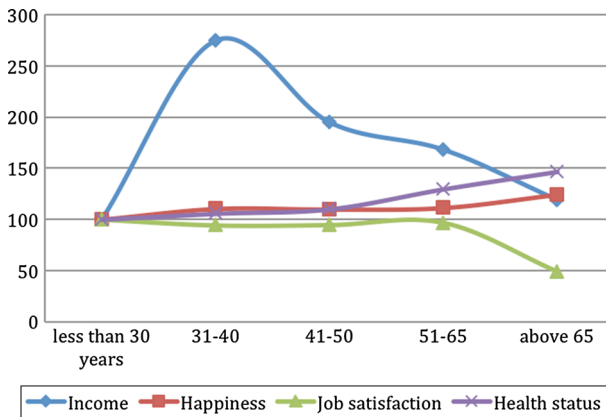
	CE	SE	TE
Below 30	80	64	27
31–40	219	75	148
41–50	90	133	84
51–65	91	90	90
Over 65	66	68	86
Total	100	100	100

Source: elaboration based on the Bank of Italy SHIW database, 2008; total = 100

the three measures of SWB are fairly stable until the age of 50, after which HS and H increase and JS decreases. These latter patterns may be due to a variety of factors whose specific contribution is difficult to disentangle. Notably, earlier retirement—retirement below the customary? age—should both increase the mean level of JS and reduce its standard deviation, because the least satisfied workers should be expected to be more likely to take early retirement.

An exploration of the standard deviation of income by educational attainment provides further interesting insights: over an entire lifetime, the variability of income is greater for more educated people, and most of this variability, for less- (CE) and most- educated people (TE), is concentrated between the ages of 30 and 40 and for people with a secondary education between the age of 40 and 50. It is reasonable to suppose that the explanation of these different patterns depends mainly on two factors: the age of entry into





**Fig. 1** The standard deviation of the four measures of well being by age. *Source:* elaboration based on the Bank of Italy SHIW database, 2006; below thirty = 100

the labour market and the age of retirement, which are both affected by the schooling level; and the education-related career path, i.e. the wage time profile.

According to extensive and strong empirical evidence, the contribution of education to income and job satisfaction also depends on the actual match between workers' education and skills and those required for their occupations (Allen and van der Velden 2001). The mismatch between workers' educational attainment and that required by the jobs available in the labour market represents one of the most debated pathologies affecting workers early in their careers. First, many observers believe that the horizontal mismatch, which occurs when the level of schooling is appropriate but the type of schooling is not (Sloane 2003), is bound to increase due to several long-run economic trends: (a) the growing segmentation of the industrial structure, which in fact causes a mismatch between the composition of labour demand and supply by educational types and skills; (b) insufficient and problematic coordination of educational institutions with labour market evolution (see, among others, Robst 2007; Nordin et al. 2010); (c) the potential conflict between workers and companies in terms of educational and training strategies due to differences in time horizons and objectives between the two actors; (d) the progressive increase in the rate of skills obsolescence; and (e) the fast-growing educational level of the youngest generation. This is especially true in countries like Italy where the production system is characterized by the prevalence of family-run SMEs oriented towards traditional manufacturing sectors, and where the demand for human capital is therefore low and stable (and is expected to remain so in the near future). Over-education is a cause of concern first of all for households, because it penalizes individuals in terms of both their earning and employment opportunities, but it is also a worry for policy makers, as it implies a waste of resources for society as a whole in terms of the under-utilization of human capital and the inefficiency of public spending on education (Groot 1996; McGuinness 2006).

The SHIW data<sup>10</sup> on the incidence impacts of educational and skill mismatches on WB by educational attainment and age offer further information on the time profile of these

<sup>10</sup> The survey is based on a subjective assessment of the type of mismatch by workers. Workers are asked if they think that they are over- or under-educated or over- or under-skilled with respect to the task they have to perform, or if they need skills different from those that they possess.

**Table 6** The incidence of educational and skill mismatches by age and educational level

	Over-education (%)	Under-education (%)	Skill mismatch (%)
<i>TE</i>			
Below 30	40.0	0.0	15.0
31–40	15.4	3.1	6.2
41–50	8.0	1.3	4.0
51–65	2.5	4.2	4.2
Total	8.1	2.3	4.4
<i>SE</i>			
Below 30	28.0	8.0	26.0
31–40	16.1	11.5	25.7
41–50	14.6	10.6	22.7
51–65	5.7	7.5	10.9
Total	10.4	8.2	16.4
<i>CE</i>			
Below 30	12.5	3.1	31.3
31–40	8.4	9.6	48.9
41–50	9.5	11.6	40.7
51–65	2.9	9.4	21.0
Total	5.2	8.1	26.7

Source: elaborations based on the Bank of Italy SHIW database, 2008

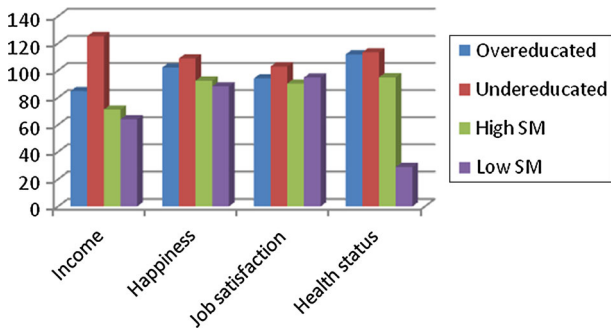
impacts and confirm the previous evidence on who gains and who loses from educational and skill mismatches in Italy (Ferrante et al. 2010; Di Pietro and Urwin 2006).

First of all, the incidence of educational and skill mismatches on entry into the labour market is greater for better-educated people: that is, for individuals with university degrees. Second, the incidence of mismatches declines over time, and does so at a faster rate for more highly-educated individuals. Third, and as a consequence of this, better-educated individuals are less mismatched later in life (Table 6). Fourth, under-educated individuals are better-off in terms of income and job satisfaction compared with perfectly matched individuals, and the rest are either unaffected by the mismatches or worse off (Fig. 2; SM = skills mismatch).

In conclusion, the preliminary descriptive analysis illustrated here suggests that human capital and education matter for WB. More educated individuals appear to be happier and more satisfied with their jobs, and to enjoy a better health status throughout their lives. Of course, this evidence is not new. What is new, however, is that the mean and the standard deviations of H, I, HS, JS all show clear age patterns that should be better investigated and explained (Fig. 3).

#### 4 Some Econometric insights

The aim of the econometric analysis was to obtain more robust insights into the contribution of human capital to WB over a life cycle, and to explain the *U-shaped* age-happiness relationship by means of the age patterns of I, H, JS, HS. The first step consisted



**Fig. 2** Educational and skill mismatches and WB. *Source:* elaboration based on the Bank of Italy SHIW database, 2008; total by WB measure = 100

in assessing the impact of human capital—that is education and experience—on the different WB measures.

In my estimations (OLS for income and ordinal probit for the other WB measures), I included educational attainment, four measures of educational and skills mismatches, a dummy for vocational studies,<sup>11</sup> the standard controls for gender and marital status, a fixed regional effect, and age and age squared: the latter should capture the non-linear effects of the accumulation of human capital through learning and hedonic experience. I also included nine variables that I intended to capture individual fixed effects, i.e. unobservable people’s characteristics: the latter were based on the answers provided to two sets of questions reflecting people’s cultural propensities and values with regard to certain basic issues.<sup>12</sup>

The results of the estimation are shown in Table 7: I will only discuss the estimates that are at least statistically significant at 5 %. First, more highly-educated individuals are happier, earn more, are more satisfied with their jobs, and experience a better health status

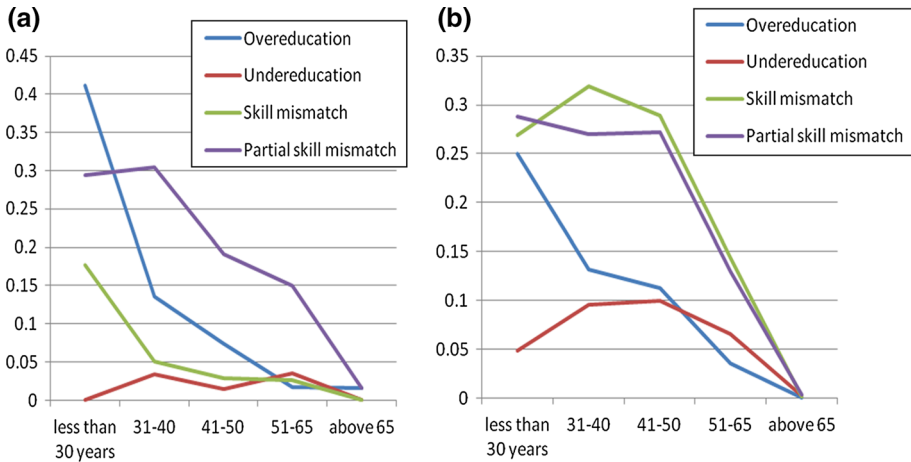
<sup>11</sup> Vocational studies include upper secondary, non-tertiary technical, and professional diplomas (two or five years of study). Individuals who have obtained their diplomas from other secondary education institutions or from tertiary education institutions (*licei*) are considered to have a general education. This is consistent with the fact that a large majority of university graduates have a 5A type of degree.

<sup>12</sup> Please say how much, on a scale from 1 to 10, you agree with the following statements, 1 meaning “Disagree completely” and 10 meaning “Agree completely”.

1. Success comes from hard work - Poor people are lazy
2. Luck is important in life
3. Your family background is crucial
4. Men and women have the same chances of success
5. Competition encourages people to work harder

Again on a scale from 1 to 10, how much do you agree with the following statements describing what should happen in a perfect world?

1. Those who work hardest should be wealthier than the rest
2. Everyone should have at least enough to live on
3. The state should make sure there is virtually no inequality
4. Death duties should be high
5. Tasks should be shared equally by men and women
6. Immigrant workers should have the same rights as Italian workers



**Fig. 3** The incidence of educational and skill mismatches over the life cycle: (a) tertiary versus (b) secondary education. *Source:* elaboration based on the Bank of Italy SHIW database, 2008

compared with less-educated people. Second, under-educated people appear to earn more and to be more satisfied with their jobs compared with perfectly matched individuals. Conversely, those experiencing skill mismatches earn less, are both less happy and less satisfied with their jobs, and experience a worse health status. Over-educated individuals earn less than completely matched individuals. Indeed, these results are largely in line with the literature on the subject, and in particular on the effects of educational and skill mismatches (Allen and van der Velden 2001; Ferrante et al. 2010).

The coefficients measuring the impact of experience and hedonic learning—for example, age and age squared in the estimations of I, H and JS—are both significant at 1, 5 and 10 % respectively, whereas in the estimation of HS only the coefficient of age is significant. Education therefore seems to affect various measures of WB differently over the life cycle. I detect a *U-shaped* age-happiness relationship, confirming previous empirical evidence but with a minimum attained much later in life (Ferrante 2009), and an inverted *U-shaped* age-job satisfaction relationship (Fig. 4).

If one considers happiness to be the most concise index of WB (that is, an index that absorbs the effects of the other measures) the age-happiness relationship should be the result of these interconnected dynamics. Building on the previous descriptive statistical evidence, my central hypothesis is that if one leaves aside learning by doing, human capital affects WB over the life cycle through hedonic learning and behavioural adaptations to the mismatches experienced between socioeconomic expectations and outcomes. If this conjecture is correct, we should find that JS, I, and HS absorb most of the effects of education on happiness, including those arising out of educational and skills mismatches, that income absorbs all of the effects of experience on productivity and wages, and that, after controlling for I, HS, JS, experience (age and age squared), remains statistically significant. Conversely, I expect that all the education variables will become less important because most of their impact is captured by the previous factors.

Moreover, building on the idea that education is the main driver of aspirations (Ferrante 2009) and on the evidence that variances in income increase sharply with education early in life, one should find that the age-happiness relationship is more convex for more

**Table 7** Econometric results: WB measures and human capital

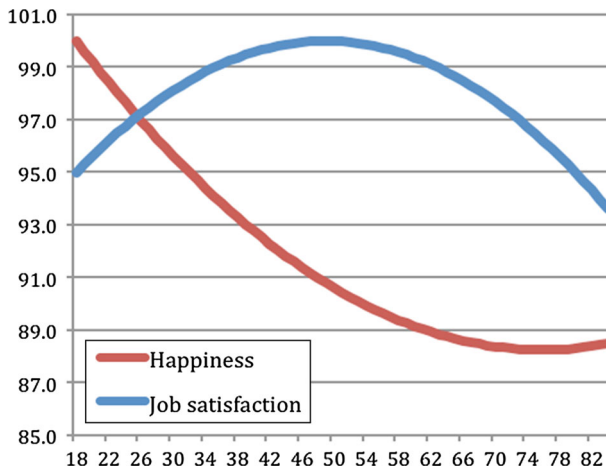
	Income OLS	Happiness ordinal probit	Job satisfaction ordinal probit	Health status ordinal probit
<i>HC: education</i>				
Compulsory	0.2365444***	0.1968226***	0.1474568	0.3705921***
Secondary	0.523426***	0.3157372***	0.4379734***	0.6394425***
Tertiary	0.8063223***	0.4761195***	0.6205544***	0.7687899***
Vocational	-0.0821879**	0.0286663	-0.0970696	-0.0392438
Over-education	-0.1321809***	-0.0409359	-0.68841	-0.1705011*
Under-education	0.1005935***	0.0736979	0.184299**	-0.0051176
Skills mismatch	-0.0407067**	-1053671***	-0.1609878***	-0.0841281**
<i>HC: experience</i>				
Age	0.0462336***	-0.0455676***	0.0582888**	-0.0436418***
Age <sup>2</sup>	-0.0003923***	0.0003226***	-0.000595*	0.0000917
<i>Controls</i>				
Female	-0.0767191***	-0.0541883	-0.0674238	-0.1297851***
Marital status	Yes	Yes	Yes	Yes
Regional fixed effects	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes
Number of obs.	3798	3801	1316	3801
F(.) / LR $\chi^2$ (.)	74.93	1211.72	257.31	1541.41
Prob F > 0 / prob > $\chi^2$	0.0000	0.0000	0.0000	0.0000
R <sup>2</sup> / Pseudo R <sup>2</sup>	0.40037	0.0807	0.0522	0.1644
Adj R <sup>2</sup>	0.3983			
Root MSE	0.51606			
Robust standard errors				

Sig. levels: \*10 %; \*\*5 %; \*\*\*1 %

educated people. In order to test this prediction, estimations were carried out for the total sample as well as for different educational attainments. Owing to the small number of observations, the separate estimation for tertiary education should be considered with caution. The results of the ordinal probit estimations are shown in Table 8.

The results confirm most of my expectations.<sup>13</sup> The actual shape of the age-happiness relationship appears to depend on the level and type of education (Fig. 5): individuals with only compulsory education do not face a *U-shaped* age-happiness relationship, but a non-significant steadily declining happiness; individuals with university degrees or vocational diplomas experience a faster reduction in happiness early in adult life (Figs. 5, 6). Individuals holding a tertiary degree reach their working-life minimum of happiness earlier than others,

<sup>13</sup> In the first model regarding the complete sample, tertiary education seems to exert a significant (at 5 %) positive impact on happiness.



**Fig. 4** The estimated age-happiness and age-job satisfaction relationship (maximum = 100)

when they are around 50 (as opposed to 54 for the complete sample,<sup>14</sup> Table 9). On the other hand, individuals with university degrees experience a faster recovery of happiness after they reach their life-cycle minimum.<sup>15</sup> As a result, individuals with tertiary educations start low and enjoy most of their happiness later in life: they reach their life-cycle maximum later in life. All the other individuals start high and never return to their initial level of happiness. Of course, one should not forget that the age-happiness relationship has been normalized for comparability reasons and that more educated people are on average also happier.

So what is going on here? The tentative interpretation of the joint evidence of descriptive and econometric analyses provided above is that education generates socio-economic aspirations, and that the mismatch between aspirations and real life chances increases with education is larger early in one's adult and working life, and mainly affects people's achievements in the labour market (JS, I).

At the beginning of adult life, when variances in income are relatively high, the precision of people's expectations is low and the probability of more educated individuals experiencing unfilled aspirations is also high: this would explain why happiness decreases sharply early in life for people with tertiary educations and why the slope of the age-happiness function increases in education: i.e. it is more convex. The same holds for individuals with vocational educations. Over time, people adjust their aspirations, but they also face decreasing mismatches in different life domains, notably in the labour market. On the basis of the data on the incidence of the education and skills mismatch over time (Table 6 and Fig. 2), it seems that the latter benefits are enjoyed mainly by university graduates and less by individuals with a secondary education of a vocational type.

Holders of university degrees therefore face greater mismatches early in life, but adjust their aspirations more quickly and enjoy most of the rewards of their investment in education later in adult life. The improvement in personality traits—the Big Five in adulthood (Heckman et al. 2006)—may play a role in this context by contributing to this process of behavioural adjustment.

<sup>14</sup> Ferrante (2009) obtained the same result using a different SHIW wave.

<sup>15</sup> For reasons of visual comparability and in order to stress the different curvatures of the age-happiness relationship I have normalized happiness with respect to its maximum level over 18–80 years.

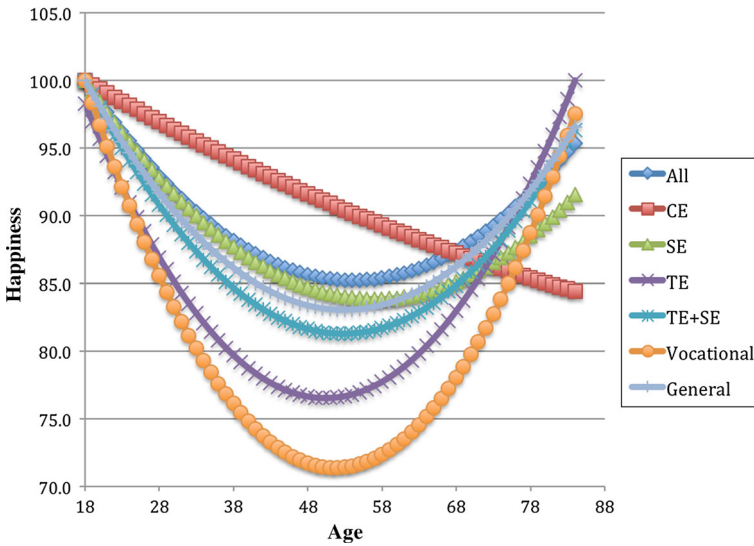
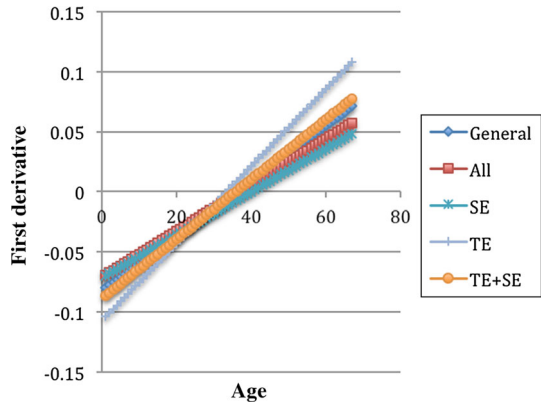
**Table 8** Econometric results, ordinal probit regressions

All	Compulsory education	Tertiary education	Secondary education	Tertiary + secondary	Vocational education	General education
Income (log)	0.27796***	-0.353370**	0.4422536***	0.2623758***	0.139463	0.287012**
Job satisfaction	0.20527***	0.211828**	0.2003216***	2055312***	0.192999***	0.221387***
Health status	0.24181***	0.342239**	0.2200589***	0.2413579***	0.1141104	0.315830***
<i>HC: education</i>						
Compulsory	0.22516*					
Secondary	0.22902					
Tertiary	0.32915**					-0.2080997*
Vocational	0.109513		0.1798925*	0.1990239**		
Over-education	0.097132	-0.113038	-0.0264459	-0.0883613	-0.1725916	0.0250966
Under-education	0.074498	0.727407	-0.0238186	0.0177177	-0.1738232	0.2086742
Skills mismatch	-0.013958	-1.37979***	-0.2352013**	0.1392211	0.228501	0.0825197
<i>HC: experience</i>						
Age	-0.1036947***	-0.1619058**	-0.1021812**	-0.131254***	-0.1876711***	-0.1208346***
Age <sup>2</sup>	0.0009585***	0.0016071**	0.0008954*	0.0012429***	0.0018136***	0.0011428***
Gender	Yes	Yes	Yes	Yes	Yes	Yes
Marital status	Yes	Yes	Yes	Yes	Yes	Yes
Regional effects	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	1316	180	599	779	346	433
F(./LR chi <sup>2</sup> (.))	633.26	107.07	268.4	325.09	182.24	184.46
Prob F > 0/ prob > chi <sup>2</sup>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared/pseudo R <sup>2</sup>	0.1308	0.1698	0.1297	0.1198	0.1599	0.1184

Happiness by educational attainment clustered robust standard errors

Sig. levels: \* 10 %; \*\* 5 %; \*\*\* 1 %

**Fig. 5** The marginal impact (dy/dx) of age on happiness by age and education



**Fig. 6** The estimated age-happiness relationship (maximum happiness by educational level/type = 100)  
NB: CE coefficients are not significant

**Table 9** Age at which individuals attain the minimum level of happiness by level/type of education

All	CE	SE	TE	TE + SE	Vocational	General
54.1	–	57.1	50.4	52.8	51.7	52.9

### 5 Summary and Conclusions

The relationship between education and subjective well being has not been extensively investigated in the past, although various studies have separately considered individual well being measures (happiness, life satisfaction, job satisfaction, health status). In this



paper, I have adopted a novel approach based on the idea that one should look at the overall contribution of education to well being within people's life-cycles. In this context, happiness should be seen as the most concise index of subjective well being, the dynamics of which are determined mainly by job satisfaction, income, and health status.

Building on this perspective, I have shown that people's human capital—that is, their education and experience, including hedonic learning—embodies a great deal of information about the determinants of well being, and that early in adult life, the positive contribution of education to well being may be counterbalanced by its negative contribution due to the mismatch between aspirations and actual socioeconomic outcomes. In particular, people seem to experience two main types of mismatches early in adult life deriving from their labour market experience. The first relates to the gap between the education and skills that they possess and those required at work, while the second concerns the gap between actual and expected rewards of their investment in education in terms of income, career, and job satisfaction. Indeed, the two gaps appear to be connected.

More educated individuals, i.e. those with tertiary educations, seem to experience greater biases in their aspirations early in life, but they appear to be either better able to adjust smoothly to labour market opportunity or faster in revising their aspirations than less-educated individuals. Hence, most of the rewards of higher education accrue late in life thanks to some sort of behavioural flexibility. The *U-shaped* age-happiness relationship, the shape of which has been shown to depend on people's education, may also reflect the existence of education-based adjustment mechanisms working through real-life experiences (Di Tella et al. 2010; Fujita and Diener 2005). Individuals with upper secondary, non-tertiary diplomas of a vocational type seem to be equally penalized at the beginning of their working lives, but do not appear to be able to recover particularly rapidly.

The bulk of tertiary education in Italy is general in nature, whereas vocational studies prevail among workers with only secondary educations. This evidence therefore provides support for the idea that there is a trade-off between early and late rewards from investing in general versus vocational education which goes beyond labour market outcomes (Hanushek et al. 2011). The message offered by this paper is that a life-cycle perspective is a more appropriate way to assess the contribution of education to people's well being since it permits appreciation of all the trade-offs between the short- and long-term rewards of education.

The conclusion that educational and skill mismatches are inefficient is based on an observation of only one—though very important—domain of people's lives: the labour market. However, these mismatches may be the result of optimizing behaviour aimed at allocating human capital over the entire lifespan, and to various market and non-market activities. For instance, over-education and over-skilling in the early stages of workers' careers may be effective responses to skills obsolescence and to the need to retrain over a lifetime. Moreover, people may also choose to obtain a tertiary degree in subjects characterized by higher probabilities of skills mismatch as workers, such as the arts and humanities, because they expect to use these skills in other domains of their life. My empirical analysis cannot provide support for this conclusions because of data limitations, but it suggests that the issue is a crucial one.

The evidence that educational and career choices are the most important sources of regret in life suggests that educational and skill mismatches may be not the result of an optimal behaviour. Uncertainty as to one's skills and preferences and a lack of information may be part of the problem. A better match between expectations and outcomes can be achieved by improving the quality of the decision-making process in education through the provision of information on job opportunities. Of course, individuals and societies have

difficulties in fully anticipating skills needs in various life domains, even in the near future. Hence there is probably a physiological level of educational and skill mismatch that one should accept without regrets!

Projections based on past trends, as well as on technological forecasts on demand for skills, suggest that due to the more rapid introduction of innovations and the globalization process, the speed at which skills will become obsolescent will increase in the future, thus increasing the probability of mismatches and regrets: “A generation ago, teachers could expect that what they taught would last their students a lifetime. Today, because of rapid economic and social change, schools have to prepare students for jobs that have not yet been created, technologies that have not yet been invented and problems that we don’t yet know will arise.” (Andreas Schleicher, OECD Education Directorate). On the other hand, in aging societies, the need to maintain skills that are also effective in various domains at later stages in people’s lives is becoming crucial. Within scenarios such as these, education programmes should aim to provide a mix of general and specific skills and knowledge appropriate for adapting to rapidly-changing technological, socioeconomic, and cultural environments. This goal should also be pursued by investing more money and efforts in life-long learning programmes.

One final consideration that may be drawn from these conclusions is that the effectiveness of education programmes and institutions should be assessed by looking at their overall contribution to well being over a lifetime and in different life domains, and not just by monitoring people’s employability early in their working lives.

## Appendix

See Tables 10, 11, 12 and 13.

**Table 10** Descriptive statistics

Variable	Obs	Mean	SD	Min	Max
Age	3801	57.76506	15.64372	19	97
Male	3801	0.6316759			
Female	3801	0.3683241			
Single	3801	0.2835359	0.450741	0	1
Married	3801	0.2835359	0.450741	0	1
Divorced	3801	0.0346676	0.1829474	0	1
Widowed	3801	0.0839886	0.2773872	0	1
Compulsory	3801	0.129259	0.3355064	0	1
Secondary	3801	0.1358113	0.3426085	0	1
Tertiary	3801	0.0409817	0.1982595	0	1
Vocational	3801	0.0764832	0.2657855	0	1
Overeducated	3801	0.0560379	0.2300251	0	1
Undereducated	3801	0.0536701	0.2253952	0	1
Skills mismatch	3801	0.1478558	0.3550037	0	1
Happiness	3801	6.611681	1.875664	1	10
Income (net, euros per year)	3801	32047.63	30070.37	-8642.963	810218.6
Job satisfaction	1316	7.139058	1.735681	1	10
Health status (5 = very bad)	3801	1.268049	1.511893	0	4

**Table 11** Average well being measures by education

	Compulsory	Secondary	Vocational (technical diploma)	Vocational (professional diploma)	Tertiary
Happiness	6.748	6.851	7.292	7.13	7.267
Job satisfaction	6.873	7.245	7.218	7.666	7.633
Health status (5 = very bad)	2.941	3.106	3.194	3.184	3.183
Income (net, euros per year)	15045	16858	20324	18070	23846

**Table 12** Average marginal effects (delta method)

	dy/dx	SE	z	P > z	[95 % conf. interval]	
<i>All</i>						
Income	-0.0040046	0.0014453	-2.77	0.006	-0.0068374	-0.0011719
Job satisfaction	-0.0029574	0.0008178	-3.62	0	-0.0045602	-0.0013545
Health status	-0.0034838	0.0011354	-3.07	0.002	-0.0057091	-0.0012586
Compulsory	-0.003244	0.0020972	-1.55	0.122	-0.0073544	0.0008664
Secondary	-0.0032997	0.0022714	-1.45	0.146	-0.0077515	0.0011521
Tertiary	-0.0047422	0.0025996	-1.82	0.068	-0.0098373	0.0003529
Vocational	-0.0015778	0.0013576	-1.16	0.245	-0.0042387	0.0010831
Overeducation	-0.0013995	0.001362	-1.03	0.304	-0.0040689	0.00127
Under-education	-0.0010733	0.0013495	-0.8	0.426	-0.0037183	0.0015716
Skills mismatch	0.0002011	0.0010087	0.2	0.842	-0.0017759	0.0021781
Age	0.001494	0.0005523	2.71	0.007	0.0004115	0.0025764
Age <sup>2</sup>	-0.0000138	5.61E-06	-2.46	0.014	-0.0000248	-2.81E-06
Female	0.0004316	0.0010762	0.4	0.688	-0.0016777	0.0025408
Single	-0.0067872	0.0022558	-3.01	0.003	-0.0112085	-0.0023659
Divorced	-0.000193	0.0017024	-0.11	0.91	-0.0035297	0.0031437
Widowed	0.0040019	0.0031161	1.28	0.199	-0.0021055	0.0101093
<i>Compulsory education</i>						
Income	-0.0058597	0.0032352	-1.81	0.07	-0.0122005	0.0004812
Job satisfaction	-0.002572	0.0012857	-2	0.045	-0.0050919	-0.0000521
Health status	-0.0022843	0.0014579	-1.57	0.117	-0.0051417	0.000573
Overeducation	-0.0021309	0.0024023	-0.89	0.375	-0.0068394	0.0025776
Under-education	-0.0018491	0.002072	-0.89	0.372	-0.0059101	0.0022119
Skills mismatch	0.0014937	0.0015576	0.96	0.338	-0.0015591	0.0045464
Age	0.0004382	0.000717	0.61	0.541	-0.0009671	0.0018434
Age <sup>2</sup>	-1.47E-06	7.66E-06	-0.19	0.848	-0.0000165	0.0000135
Female	0.0035557	0.0024107	1.47	0.14	-0.0011693	0.0082807
Single	-0.0033098	0.0027135	-1.22	0.223	-0.0086282	0.0020087
Divorced	0.0005429	0.0028424	0.19	0.849	-0.005028	0.0061139
Widowed	0.0144871	0.0086998	1.67	0.096	-0.0025643	0.0315384
<i>Secondary education</i>						
Income	-0.0046903	0.0024688	-1.9	0.057	-0.0095292	0.0001485
Job satisfaction	-0.0021245	0.0010546	-2.01	0.044	-0.0041915	-0.0000576

**Table 12** continued

	dy/dx	SE	z	P > z	[95 % conf. interval]	
Health status	-0.0023338	0.0014018	-1.66	0.096	-0.0050813	0.0004137
Vocational	-0.0019078	0.0013533	-1.41	0.159	-0.0045603	0.0007447
Overeducation	0.0002805	0.0014259	0.2	0.844	-0.0025142	0.0030751
Under-education	0.0002526	0.0014524	0.17	0.862	-0.002594	0.0030992
Skills mismatch	-0.0024944	0.0016736	-1.49	0.136	-0.0057745	0.0007857
Age	0.0010837	0.0006902	1.57	0.116	-0.0002691	0.0024364
Age <sup>2</sup>	-9.50E-06	6.82E-06	-1.39	0.164	-0.0000229	3.88E-06
Female	-0.0010377	0.001256	-0.83	0.409	-0.0034994	0.0014241
Single	-0.0060641	0.0032798	-1.85	0.064	-0.0124924	0.0003642
Divorced	-0.0013296	0.0019274	-0.69	0.49	-0.0051072	0.002448
Widowed	0.0016003	0.0036072	0.44	0.657	-0.0054697	0.0086702
<i>Tertiary education</i>						
Income	0.0033195	0.0033768	0.98	0.326	-0.0032989	0.0099379
Job satisfaction	-0.0019899	0.0018429	-1.08	0.28	-0.0056018	0.0016221
Health status	-0.0032149	0.0032401	-0.99	0.321	-0.0095654	0.0031356
Overeducation	0.0010619	0.0031659	0.34	0.737	-0.0051432	0.0072669
Under-education	-0.0068331	0.0078065	-0.88	0.381	-0.0221336	0.0084674
Skills mismatch	0.0129615	0.0123687	1.05	0.295	-0.0112806	0.0372037
Age	0.0015209	0.0014816	1.03	0.305	-0.0013831	0.0044249
Age <sup>2</sup>	-0.0000151	0.0000149	-1.02	0.31	-0.0000442	0.000014
Female	-0.0022826	0.0030391	-0.75	0.453	-0.0082391	0.0036739
Single	-0.009744	0.0091158	-1.07	0.285	-0.0276106	0.0081225
Divorced	-0.0057087	0.006227	-0.92	0.359	-0.0179135	0.006496
Widowed	-0.0030708	0.0055692	-0.55	0.581	-0.0139862	0.0078446
<i>Tertiary + secondary education</i>						
Income	-0.0024422	0.0013839	-1.76	0.078	-0.0051545	0.0002702
Job satisfaction	-0.0019131	0.0009157	-2.09	0.037	-0.0037078	-0.0001184
Health status	-0.0022465	0.0012234	-1.84	0.066	-0.0046444	0.0001514
Secondary	0.0018239	0.0013405	1.36	0.174	-0.0008034	0.0044513
Vocational	-0.0018525	0.0012155	-1.52	0.127	-0.0042348	0.0005298
Overeducation	0.0008225	0.0011851	0.69	0.488	-0.0015004	0.0031453
Under-education	-0.0001649	0.0012039	-0.14	0.891	-0.0025245	0.0021947
Skills mismatch	-0.0012959	0.0011572	-1.12	0.263	-0.003564	0.0009722
Age	0.0012217	0.0006479	1.89	0.059	-0.0000482	0.0024916
Age <sup>2</sup>	-0.0000116	6.38E-06	-1.81	0.07	-0.0000241	9.40E-07
Female	-0.0010247	0.0010061	-1.02	0.308	-0.0029966	0.0009472
Single	-0.0060446	0.0030437	-1.99	0.047	-0.0120102	-0.0000789
Divorced	-0.001086	0.0014952	-0.73	0.468	-0.0040164	0.0018445
Widowed	0.0002648	0.0025385	0.1	0.917	-0.0047105	0.0052401
<i>Vocational education</i>						
Income	-0.001081	0.0013982	-0.77	0.439	-0.0038213	0.0016593
Job satisfaction	-0.001496	0.0010988	-1.36	0.173	-0.0036497	0.0006578
Health status	-0.0008845	0.0010723	-0.82	0.409	-0.0029861	0.0012171

**Table 12** continued

	dy/dx	SE	z	P > z	[95 % conf. interval]	
Overeducation	0.0013378	0.00168	0.8	0.426	-0.001955	0.0046306
Under-education	0.0013473	0.0017048	0.79	0.429	-0.001994	0.0046886
Skills mismatch	-0.0017711	0.0017232	-1.03	0.304	-0.0051485	0.0016062
Age	0.0014547	0.0011314	1.29	0.199	-0.0007628	0.0036721
Age <sup>2</sup>	-0.0000141	0.0000112	-1.25	0.211	-0.0000361	7.98E-06
Female	-0.0006498	0.001315	-0.49	0.621	-0.003227	0.0019275
Single	-0.0071355	0.0053416	-1.34	0.182	-0.0176049	0.0033339
Divorced	-0.0006675	0.0021467	-0.31	0.756	-0.0048749	0.0035398
Widowed	0.0057506	0.006933	0.83	0.407	-0.0078378	0.019339
<i>General education</i>						
Income	-0.0025244	0.0019143	-1.32	0.187	-0.0062763	0.0012275
Job satisfaction	-0.0019472	0.0013032	-1.49	0.135	-0.0045013	0.0006069
Health status	-0.0027779	0.0020083	-1.38	0.167	-0.0067141	0.0011583
Secondary	0.0018303	0.0016067	1.14	0.255	-0.0013188	0.0049795
Overeducation	-0.0002207	0.0014757	-0.15	0.881	-0.0031131	0.0026716
Under-education	-0.0018354	0.0020644	-0.89	0.374	-0.0058816	0.0022108
Skills mismatch	-0.0007258	0.001409	-0.52	0.606	-0.0034875	0.0020359
Age	0.0010628	0.0007905	1.34	0.179	-0.0004866	0.0026122
Age <sup>2</sup>	-0.0000101	7.75E-06	-1.3	0.195	-0.0000252	5.15E-06
Female	-0.0008227	0.0012476	-0.66	0.51	-0.0032679	0.0016225
Single	-0.0049913	0.0035684	-1.4	0.162	-0.0119851	0.0020026
Divorced	-0.0011636	0.0018526	-0.63	0.53	-0.0047947	0.0024675
Widowed	0.0000731	0.0027791	0.03	0.979	-0.005374	0.0055201

**Table 13** Happiness, job satisfaction, and health status by age and education

	Elementary	Compulsory	Secondary	Tertiary	Total
<i>Happiness</i>					
Below 30	6.5	6.9	7.9	7.6	7.4
31-40	6.3	7.2	7.4	7.4	7.2
41-50	5.7	6.8	7.2	7.5	7.0
51-65	6.1	6.6	7.1	7.2	6.7
Over 65	5.9	6.6	6.6	7.0	6.1
<i>Job satisfaction</i>					
Below 30	6.0	6.2	7.0	7.3	6.8
31-40	6.3	6.7	7.3	7.7	7.1
41-50	6.3	6.8	7.4	7.5	7.2
51-65	6.7	7.2	7.1	7.8	7.2
Over 65	6.9	8.0	9.0	7.8	8.0
<i>Health status (5 = very bad)</i>					
Below 30	3.4	3.5	3.5	3.4	3.5
31-40	3.1	3.2	3.4	3.4	3.3
41-50	3.0	3.2	3.3	3.3	3.2
51-65	2.5	2.8	3.0	3.2	2.8
Over 65	2.2	2.5	2.7	2.9	2.3

## References

- Allen, J., & van der Velden, R. (2001). Educational mismatches versus skill mismatches: Effects on wages, job satisfaction, and on-the-job search. *Oxford Economic Papers*, 53(3), 434–452.
- Babcock, L., & Loewenstein, G. (1997). Explaining bargaining impasse: The role of self-serving biases. *Journal of Economic Perspectives*, 11(1), 109–126.
- Bank of Italy. (2008). *Survey on household income and wealth*. [www.bancaditalia.it](http://www.bancaditalia.it).
- Blanchflower, D. G., & Oswald, A. J. (2007). *Is well-being U-shaped over the life-cycle?*. NBER WP n. 12935, February.
- Bowles, S., Gintis, H., & Osborne, M. (2001). The determinants of earnings: A behavioral approach. *Journal of Economic Literature*, 39(4), 1137–1176.
- Castriota, S. (2006). *Education and happiness. A further explanation of the Easterlin Paradox*. New York: Mimeo.
- Clark, A. E. (1997). Job satisfaction and gender: Why are women so happy at work? *Labour Economics*, 4(4), 341–372.
- Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, happiness, and utility: An explanation for the Easterlin Paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95–144.
- Clark, A. E., Kamesaka, A., & Tamura, T. (2015). Rising expectations dampen satisfaction. *Education Economics*, 23(5), 515–531.
- Clark, A. E., & Oswald, A. (1996). Satisfaction and comparison income. *Journal of Public Economics*, 61(3), 359–381.
- Clark, A. E., Oswald, A., & War, P. (1996). Is job satisfaction U-shaped in age? *Journal of Occupational and Organizational Psychology*, 69(1), 57–81.
- Cunado, J., & Perez De Gracia, F. (2012). Does education affect happiness? *Social Indicators Research*, 108(1), 185–196.
- Cunha, F., & Heckman, J. J. (2007). The technology of skill formation. *American Economic Review*, 97(2), 31–47.
- Cutler, D. C., & Lleras-Muney, A. (2006). *Education and health: Evaluating theories and evidence*. NBER WP. 12352.
- Cutler, D. C., & Lleras-Muney, A. (2010). Understanding differences in health behaviors by education. *Journal of Health Economics*, 29(1), 1–28.
- Di Pietro, G., & Urwin, P. (2006). Education and skills mismatch in the Italian graduate labour market. *Applied Economics*, 38(1), 79–93.
- Di Tella, R., Haisken-De New, J., & Macculloch, R. (2010). Happiness adaptation to income and to status in an individual panel. *Journal of Economic Behavior & Organization*, 76(3), 834–852.
- Easterlin, R. A. (2003). Explaining happiness. *National Academy of Sciences of the US*, 100(19), 11176–11183.
- Easterlin, R. A. (2005). A puzzle for adaptive theory. *Journal of Economic Behavior & Organization*, 56(4), 513–521.
- Easterlin, R. A. (2006). Life cycle happiness and its sources. Intersections of psychology, economics and demography. *Journal of Economic Psychology*, 27(4), 463–482.
- Ferrante, F. (2009). Education, aspirations and life satisfaction. *Kyklos*, 62(4), 542–562.
- Ferrante, F., McGuinness, S., & Sloane, P. J. (2010). Esiste “overeducation”? Un’analisi comparata. In Almalaurea (Ed.), *XII Rapporto sulla condizione occupazionale dei laureati. Investimenti in capitale umano nel futuro di Italia ed Europa* (pp. 73–115). Bologna: Il Mulino.
- Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness studies. *Journal of Economic Literature*, 40(2), 402–435.
- Fujita, F., & Diener, E. (2005). Life satisfaction set point: Stability and change. *Journal of Personality and Social Psychology*, 88(1), 158–164.
- Groot, W. (1996). The incidence of, and returns to overeducation in the UK. *Applied Economics*, 28(10), 1345–1350.
- Hanushek, E. A., Woessmann, L., & Zhang, L. (2011). *General education, vocational education and labor-market outcomes over the life-cycle* (NBER WP No 17504). Cambridge, MA: National Bureau of Economic Research.
- Hanushek, E. A., Schwerdt, G., Woessmann, L., & Zhang, L. (2016). General education, vocational education and labor-market outcomes over the life-cycle. *Journal of Human Resources*, forthcoming.
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and non-cognitive abilities on labor market outcomes and social behavior. *Journal of Labor Economics*, 24(3), 411–482.

- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all? *Journal of Personality and Social Psychology [Special Section, Cognitive Abilities: 100 Years After Spearman (1904)]*, 86(1), 148–161.
- McGuinness, S. (2006). Overeducation in the labour market. *Journal of Economic Surveys*, 20(3), 387–418.
- Michalos, A. C. (2008). Education, happiness and well being. *Social Indicators Research*, 87(3), 347–366.
- Nordin, M., Persson, I., & Rooth, D.-O. (2010). Education-occupation mismatch: Is there an income penalty? *Economics of Education Review*, 29(6), 1047–1059.
- OECD. (2011). *Education at a glance*. Paris: OECD.
- Pugno, M. (2013). Scitovsky and the income-happiness paradox. *Journal of Socio-Economics*, 43(C), 1–10.
- Ree, M. J., & Carretta, T. R. (2002). g2 K. *Human Performance*, 15(1–2), 3–23.
- Robst, J. (2007). Education and job match: The relatedness of college major and work. *Economics of Education Review*, 26(4), 397–407.
- Roese, N. J., & Summerville, A. (2005). What we regret most...and why. *Personality and Social Psychology Bulletin*, 31, 1273–1285.
- Schmidt, F. L. (2002). The role of general cognitive ability and job performance: Why there cannot be a debate. *Human Performance*, 15, 187–210.
- Scitovsky, T. (1992). *The joyless economy. The psychology of human satisfaction*. New York: Oxford University Press.
- Scoppa, V., & Ponzio, M. (2008). An empirical study of happiness in Italy. *The BE Journal of Economic Analysis & Policy*, 8(1), 1–23.
- Sloane, P. (2003). Much Ado about nothing? What does the Overeducation Literature really Tells us? In F. Büchel, A. de Grip & A. Mertens (Eds.), *Overeducation in Europe*. Cheltenham: Edward Elgar.
- Stutzer, A. (2003). The role of income aspirations in individual happiness. *Journal of Economic Behavior & Organization*, 54(1), 98–109.