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The Non-Economic Effect ofEducation: An Analysis of Italians Subjective Health and Well-being

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Abstract

This article analyses the non-economic effect of education, such as perceived health and well-being, in terms of "happiness" and "life satisfaction". In addition, we examine the role that employment status and earnings play in this relationship for Italians aged 25-68. The hypotheses are twofold. The first is that the level of education attained may affect the level of perceived happiness and life satisfaction. The second suggests that education's impact is influenced by one's position and earnings in the labour market. The link between education and occupational status (e.g., in/out on labour market) has direct implications for economic conditions, which affect subjective health and well-being. These non-economic effects of educations are explored using Italian data from the European Social Survey (ESS) for the years 2012; 2016; 2018; 2020 and through the Health Attainment model (Lucchini and Sarti, 2009). The goal is to identify the direct and indirect effects of education on subjective health and well-being, and whether economic conditions mediate these relationships. In line with the literature, Higher education leads to greater satisfaction with health, happiness and life satisfaction. These effects appear mediated by economic conditions (occupational status and earnings), which spill over directly into perceived health and on the development of one's imaginary subjective well-being.

1.   Introduction[1]

Research on educational outcomes and social background has focused on the economic impact of educational attainment and earnings from years of education (Ballarino et al.,2014; Budoki & Goldhtorpe, 2016; Bernardi & Ballarino, 2016; Giancola & Salmieri, 2021; Hällsten & Yaish, 2022; Rizzi, 2023) both in terms of value of a degree and of overall economic growth through the accumulation of human capital (Schultz, 1971; Becker, 1975; Hanushek & Woßmann, 2010). Education's impact on health, happiness, and life satisfaction, which refer to the non-economic effects of educational investment, has received less attention (Heckman et al., 2018; Brannlund, 2014). The benefits of education are defined as "non-monetary" when impact "eludes monetary measurement" and spills over into dimensions beyond the

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economic sphere (Vila, 2000, 22). High levels of education among the population contribute to economic growth (individual and collective) and improve social cohesion, civic participation and subjective health and well-being (Wharcol & Malicka, 2018). The paper fits into this tipic and explores the dimensions of health and subjective well-being - given the level of happiness and perceived general satisfaction - for individuals aged 25 to 68 in Italy. The aim is to examine the link between education and perceived health and well-being and to observe the role that working conditions (labour market access and economic satisfaction) play in this relationship. Does a higher level of education correlate with increased happiness and life satisfaction? And what is the relationship between these two dimensions net of position in the labour market?

When referring to health, we mean not only not being sick/ill, but also being physically, mentally, and socially in healthy conditions. According to this socio-cultural definition (WHO, 1948), healthiness is considered as a condition of psychophysical balance allowing individuals to be integrated as much as possible with the social environment. The achievement of such balance is influenced by both the social environment in which individuals are embedded and the counteractive social and economic elements that contrast it (Giancola & Colarusso, 2021). Thus, health turns out to be a polysemic concept that is negative where there is no disease and positive as a dynamic state of general well-being (Sarti & Terraneo, 2023). Well-being is a multidimensional concept that involves several aspects such as emotional, physical, mental, social, and spiritual that allow people "*to reach their fullest potential and enjoy a better quality of life*"[2]. It can be a "subjective" concept, based on how someone perceives his/her living conditions, or "objective", founded on the material conditions which enable perceived well-being (Kahneman et al, 1999; Edgerton & Roberts 2012). Various approaches align in assessing multidimensional subjective well-being with two distinct dimensions: self-reported happiness and life satisfaction (Diener et al., 1999; Cumminis, 2000; Conceição & Bandura, 2008). On the one hand, we can consider life satisfaction as the outcome of an individual assessment between what one aspires to and what one has achieved or would like to achieve. On the other, happiness reflects a "*balance between positive and negative affect*" (Conceição & Bandura, 2008, 8) which underlines the affective component that individuals consider when assessing their state of well-being. The dimension of health plays a significant role in determining well-being, and its poor condition can have detrimental effects on happiness (Easterlin, 2003). Therefore, health is part of the overall state of well-being and the perceived state of well-being does not depend only on effective health conditions but relies on other several factors too (individual, contextual, institutional etc).

Empirical research over time has shown that education affect both factual and perceived health status in the sense of well-being so much, so that less educated people are more likely to experience worse health conditions, both self-rated and in terms of reported chronic morbidities (Cardano, 2008; Ross e Wu; 1996). Unhealthy behaviours and lifestyles are more likely among or more conducive to stressful feelings among uneducated people (Brannlund, 2014).

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[2] The concept of quality of life itself is defined from the way the individual perceives himself and his existence. This is done in reference to the cultural context, the value system in which he or she is embedded and in relation to what are one's goals, expectations and so on (WHO, 1948).

Indeed, education affects individual well-being, increasing the happiness of more educated people (Edgerton & Roberts, 2012). Highers levels of education also seems to have a positive effect on health, promoting wholesome positive habits like healthy diet, not smoking, or using drugs, and do more work out (Jungbauer-Gans e Gross 2009; Giancola & Colarusso, 2021). Well-being is of course correlated to age and tends worsening as age increases. But age effect can be contrasted or mitigated: plenty of research has shown that both education levels and income can slow the wellness decline (Ross & Wu, 1996). Formal education can affect health via several factors such as occupational status and work-contents, economic conditions, socio-psychological resources, and social capital. Attaining higher education increases the likelihood to receive cognitive and material social support from wider and more qualified social relationship (Ross e Van Willigen, 1997), to get better job and have better career prospects, to undergone less economic stress, and to enact healthier habits and lifestyles (Grossman 2006; Mirowsky e Ross, 2005). Education plays a crucial role in allocating employment statuses, since access to and stability into the labour markets depends partly on educational attainment, and individual's material well-being depends on job earnings over the life-course.

However, several studies oppose these positive effects of education on health by showing that it can negatively impact perceived satisfaction. The individual system of expectations increases with high educational attainments and may breed a sense of dissatisfaction when achievements are lower than aspirations (Blossfeld & Maurice, 2019). Sarti (2018) and Giancola and Colarusso, (2021) have found sharp disparities according to educational attainments among the Italian population in the last decades in both the availability of social, economic, and cultural resources and the opportunities to convert this resource into subjective well-being. Among these disparities, the inclusion or exclusion from welfare systems, the territorial context, and social position within the social structure have showed that individuals with greater socio-economic and cultural resources (higher education and wealth) attain higher positions in social stratification and report better health conditions compared to their less privileged counterparts (Marmot & Wilkinson, 2006; Costa, 2014). This has an effect not only on maintaining and reproducing social inequalities but also on the well-being of the entire population. Therefore, it is crucial to consider not just the economic impacts of education but also to the influence it, together with employment status, experts on dimensions that extend beyond purely economic aspects. We suggest that educational achievements affect individual's perceived health and well-being. Furthermore, this effect tends to be absorbed by employment status and earnings, since these latter depend on socioeconomic background and educational attainment.

2.   Theoretical framework

When we consider social health inequalities, we usually refer to an "*unfair distribution of social, economic and cultural resources and goods that allow to fully enjoy the physical psycho-efficiency of the body*" (Sarti, 2018, 668). The unequal distribution of resources and goods refers to inequalities arising from socially structured advantages, and thus to the social position assumed in stratification by the individual (Sarti et al, 2011). This concept highlights avoidable and unjust

disparities among individuals that are not because of biological or genetic variations (WHO, 1990). Sociological research has analysed and explained health disparities using the «selection/causation framework». Supporters of the first paradigm («difference model») assume that health inequalities are influenced by both biological preconditions and lifestyle choices. Inequalities in health and well-being are usually due to individual factors and behaviours, reflecting the «victim blaming» attitude (Cardano, 2008). This perspective includes explanations based on genetics or biology which involve lifestyles and attribute health states starting from a stochastic process in a sort of «luck lottery» (Sarti, 2018) and/or social processes based on free choice (smoking, drinking, etc). Conversely, the model of causation, (Spadea, 2004; Phelan et al., 2010), or of inequalities (Wickrama et al., 1997) considers health and well-being as a reflection of the social position assumed in social stratification. Health disadvantages can derive from inherited social context and other social factors. Adopting this point of view for the analysis, variations in health are explained by social factors (or «social determinants»), by material and immaterial resources that individuals implement based on initial advantages/disadvantages embedded in social contexts with similar threats and risks. Education becomes a key factor in generating and reproducing health inequalities because it affects access to resources that can help improve health and well-being. Resources like jobs, power, reputation, and social ties affect people's socioeconomic status, which in turn influences their health condition and well-being perception. Most of the studies adopting this model identify the source of differentiation in the working condition and underline earnings (and therefore income as a proxy for social position) as a causation factor on the one hand and gained status on the other (Sarti, 2018). We then assume as the basic model for our analysis the «Health Attainment» model proposed by Lucchini and Sarti in 2009. Inspired by the OED triangle of Blau and Duncan (1967)[3], the model assumes that differences in socio-economic status affect health and well-being through family (in terms of socio economic and cultural background), education attained, and work (employed conditions and earning), cumulatively. Furthermore, cultural capital can be transformed into tools for health protection and prevention.
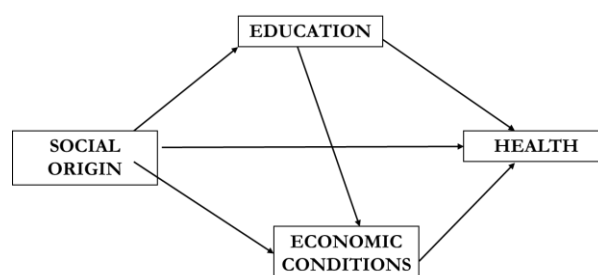
FIGURE 1. *The Health Attainment Model*
Source: author's elaboration from Lucchini e Sarti scheme (2008)

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[3] The status attainment model by Blau and Duncan (1967) shows the relationship between social origin, education, and life outcomes. An individual's final social position would be influenced by family (father's) status and education and thus by class (Bernardi & Ballarino, 2016; Meraviglia, 2017). The relationship between social factors and health inferred in the model is not to be considered causal. Objective health variables (e.g., morbidity) are controversial to measure.

The health attainment model shows that the education achievement is influenced by family background, which affects socio-economic status and overall health and well-being indirectly and through education and position assumed in social structure. In this way, there is a direct impact of economic conditions (occupational status and earning) on health and happiness and life satisfaction. This approach recalls Bourdieu's theory of social and cultural reproduction, which involves the concepts of cultural capital and habitus. According to Bartley (2016) and Sarti, (2018), we assume that people develop shared habits through socialisation, which enhances their sense of belonging to specific groups in a process of social distinction. In this viewpoint, social and economic conditions reflect unequal distribution of material resources, which can explain the link between education and health and well-being, (Sarti & Terraneo, 2023). At the empirical level, we refer to Mirowsky and Ross's (2005) concept of "structural amplification cascade" to identify the mechanisms underlying variations in health and well-being status. Alternatively, they highlight the cumulative nature of health disparities and socioeconomic advantages using DiPrete and Eirich's (2006) "cumulative advantage model." According to the Bourdiesian approach, the cumulative advantage model and the concept proposed by Mirowky and Ross (2005) allows us to consider health as a type of capital which individuals collect over time, influenced by their social standing and reproductive practices. Anyway, there is a threshold beyond which inequalities reverse. It is hypothesized that age-related benefits end their utility function in old age, as health declines naturally.

3. Data and Methods

The data used comes from the last four waves of the European Social Survey (ESS) (2012; 2016; 2018; 2020) including a representative sample of the Italian population (N= 20,686). The choice to merge several waves of the survey should get a larger sample size and minimise the risk of statistical power loss. In Italy, the study of social inequalities in health and well-being started in the 1990s, influenced by research in England and Scandinavia). This delay was mainly due to limited data sources and their unequal distribution across the territory (Cardano, 2008). The main Italian analyses conducted during that period were carried on by ISTAT and the ongoing multi-purposes survey on health conditions and use of health services (Multiscopo– Condizioni di salute e ricorso ai servizi sanitari) (the latest edition of the survey was conducted in 2019). Currently, the European Social Survey is proving very useful for this type of analysis since it includes information about social background, employment, earnings, and people's perception of health and life satisfaction. This allows to identify both the economic and non-economic effects of educational attainments. To analyse the effect of education on the health conditions of the Italian active population we excluded individuals aged under 25 and over 68 years old. Therefore, we reached a sub-sample of 14.098 Italians (49.2% men and 50.4% women). This choice is also aims to avoid bias both in the relationship between education and economic returns (because of individuals under age 25 who may still be in education) and in the estimation

of health effects due to the natural aging (Willson et al, 2007; Lucchini e Sarti, 2009). Given the well-known relationship between social origin and educational levels and between these and the status achieved in the labour market, it was chosen to directly observe the impact of educational qualifications and employment status (in terms of access to labour market and economic conditions) on health and well-being perceived conditions. Indeed, studies have widely shown that social background affects educational attainment. Higher social origins lead to higher chances of achieving higher educational attainments. Similarly, education levels impact on job prospects and mitigate the influence of social background in this aspect (Zella, 2010 Ballarino et al, 2016; Rizzi, 2023). The reference to Health Attainment model for this research allows us to estimate the impact of education on health and well-being, given by the level of happiness and life satisfaction. In addition, we look at the relation between occupational outcomes (access to labour market and economic conditions) and respondents' health and well-being ("happiness" and "life satisfaction"), net of social origin, which affects directly on educational attainment and indirectly on life destinies.
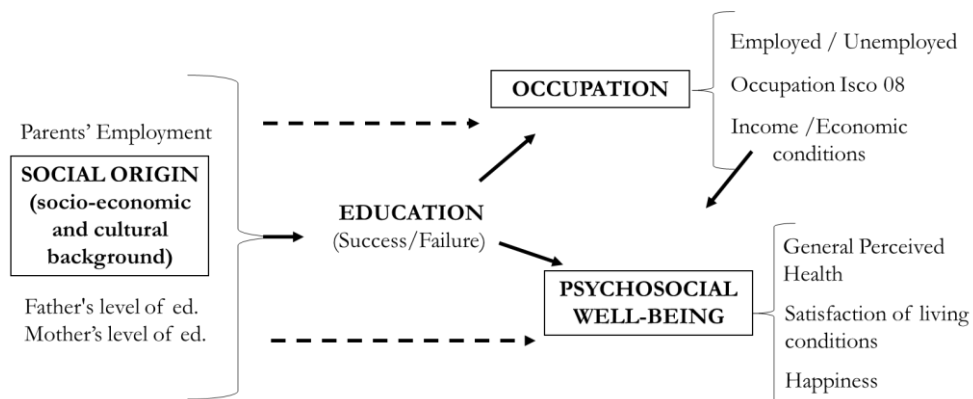
FIGURE 2. *The Health Attainment model revisited by the author.*
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

3.1   Socio-economic, health and well-being indicators

3.1.1   *Education*
As already mentioned, (see par. 2), we use educational levels as an indicator of the social position of the interviewee and a predictor of health and well-being. This is because it is known that education can absorb the impact of social origin and transfer it to other dimensions (Rizzi, 2023). Multiple studies confirm that educational attainment, unlike other factors such as occupation, income etc, is valid for the entire population and stable over time (Lucchini et al, 2011). The original variable of the educational levels distributed in 21 categories (from

"No school degree" up to "PhD") was re-classified in four classes[4], using the Italian classification scheme. Finally, we also made the education variable dichotomous to see the effects of high vs. low education levels. The "higher education" category combines high school diploma (general, technical, and vocational) and university degrees and more (51.6%).

3.1.2 Occupation

Occupational condition was measured using two indicators: employment status and labour market position based on the ISCO classification. To determine respondent's occupational status, we considered the main activity carried out in the last 7 days, excluding "Education", "Permanently sick or disabled", "Retired", "Community or military service". The category "Paid Work" is taken over to create the dichotomous variable "In versus out of the labour market". The other categories – "Unemployed, searching for a job", "Unemployed, not searching for a job" and "Housework, looking after children" – have been included and recoded into "non-occupational condition". Finally, the ISCO 08 occupation variable was incorporated and recoded using the ISTAT classification scheme, and then turned into five and three categories[5] from the bottom up. The variable previously recoded into "Non-occupational conditions" (11,7%) was merged into these categories to present an occupational status that included this dimension. Reference tables can be viewed in the appendix (Table 10).

3.1.3 Income and economic conditions

Family economic conditions are assessed based on both income levels (expressed in ten deciles) and people's perception of those conditions[6]. We split the first one, which had categories ranging from 'J' (less than 9,000) to 'H' (over 54,500), into five categories[7]. The second was recoded into three categories ranging from 1) "it allows us to live comfortably" (23.4%); 2) "it allows us to meet current expenses" (48.5%) and 3) "we have medium or serious difficulties in meeting our expenses" (28%). The recoded income variable will be used for descriptive analyse. The variable relating to the perception of economic conditions, being strongly correlated to income (see Table 12, Appendix), will be used as a proxy of occupational status (being employed) in the various proposed models. Although the original survey variable specifically measures annual household income, it can be interpreted as a proxy of individual economic situations too.

3.1.4 Health and subjective well-being

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[4] The categories are: "No school degree/ Primary education" (7%); "Secondary education" (41.3%); High School degree (Technical/Vocational) (3.5%); and "University degree and more" (16.1%)

[5] The five categories are distributed as follows: "Low" (11%); "Middle Low" (20,4%); "Middle" (19,4%); "Middle High" (21,7%); "High" (15,7%). The three-category variable, on the other hand: "Low" (32,8%); "Middle" (32,2%); "High" (35%).

[6] ESS's income construction is based on anchors within the European Statistical System (ESS). Regards economic conditions, respondents are asked about their perception and disposable income. The response modes range from 1-4 where 1 equal "*allows us to live comfortably*"; 2 to "*allows us to meet current expenses*" and finally, 3 and 4 "*we have difficulties*" and "*great difficulties.*".

[7] The categories are: "Low" (23%); "Middle Low" (28%); "Middle" (21,7%); "Middle High" (19%) and "High" (8,2%) (see. Table 11, Appendix)

To assess overall health, we considered self-perceived health on a scale of 1 (very good) to 5 (terrible) [8] and the presence of hindering diseases. We recoded the starting variable into three categories (good, fair, bad)[9] and then as transformed into a dummy that contrasts good health (72.1%) with bad health (27.9%). Dichotomising the variable helps avoid distortions caused by low percentages in the lowest category. The variable "diseases" declared is spurious since it cannot be verified (as already shown in other studies, see Facchini & Ruspini; 2001; Lucchini e Sarti, 2009). These reasons should not be considered when estimating the cause-effect relationship between the variables[10]. Along with their general health, we considered the interviewees' perceptions of their living conditions on a scale of 0-10. They were asked to rate both their happiness and satisfaction with their current life. The variables relating to the "Happiness" and "Life Satisfaction" were summarised in a single extracted component which covers 83% of the total variance (Table 13 and 14, Appendix). The component was labelled as "Subjective well-being" and saved as a regressor to use it in the descriptive analyses and especially for the ANOVA test. The correlation matrix shows a strong relationship between the dimension of "happiness" and "life satisfaction" (Table 15, Appendix). Despite this, when developing multivariate analysis models to estimate the effects of individual and contextual variables on health and subjective well-being, we split happiness from life satisfaction. The division can be ascribed to the reasons specified in the opening paragraph. Moreover, we focus on the subjective dimension of health and well-being over the objective dimension. The literature highlights the relevance of the subjective dimension in the analysis because of its strong correlation with objective health measures, such as mortality and morbidity (Rogers, 1995). It is a warning sign that shows previous health issues affecting well-being. The subjective dimension of health looks at how a person feels and thinks about themselves, rather than just their physical health. An individual's health is only partially explained by the objective dimension, such as diseases (Sarti e Terraneo, 2023). The representation of subjectivity shows how individual experiences are influenced by the structure they are in (with its limitations and resources).

Finally, we used several control variables such as:

- Age detected by open-ended question, was recoded into four groups, distributed as follows 25-34 (17.6%); 35-44 (22.3%); 45-54 (28.3%) e 55-68 (31.9%). The choice recalls the methodological criteria by which the selection of a sample for the analysis was constructed.
- Gender; was dummized to use it in multivariate analysis models where 1 for males and 0 for females.
- Lifelong learning; was also dummizzed where 1 for yes and 0 for no.

4.   Empirical Analysis

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[8] The referenced question is "Currently, how is your health in general? Would you describe it as..." with response mode "*very good*; *good; fair; bad; very bad*".

[9] The reference categories are distributed: "good health" (72.1%); "fair health" (24.6%) and "bad health" (3.3%)

[10] However, to utilize it as a proxy in regression models, the original three-mode variable "diseases" was recoded into a dichotomous variable "diseases *vs* non-diseases".

4.1 Descriptive statistics

This section report on the first-level analyses highlighting the relations between the variables considered. These relations have been assessed via bivariate analyses and estimations, which allows to fulfil the preliminary research goals and the baseline for regression models.

The distributions of health perception for the variables mentioned are observed column-wise. Women (Table 16, Appendix) report good health to a lesser extent than men (69.5% vs 74.7%). This figure reflects Italian trends related to mental health and multicronicity. In Italy, although women, compared to men, have healthier lifestyles (in terms of lower alcohol, smoking consumption, and healthier activities) they are subject to more psychological distress and additional limitations as elderly (BES, 2022). As age group increases, the percentage of people reporting good and excellent health decreases (see Table 1). If the youngest age group (25-34) 87.8% express positive perceptions of heath, only 53.8% of the oldest group (55-68) are in this category. 46.2% define their health status as bad or terrible vs. only 12.2% in the younger age group. According to DiPrete and Eirich (2006), the assessment of one's health as good or poor in relation to age demonstrates the existence of a saturation threshold, causing a reversal in health during later life.

		Age (25-68)				Total
		25-34	35-44	45-54	55-68	
Good health vs Bad	Bad Health	12.2%	18.2%	24.7%	46.2%	27.9% (3927)
	Good Health	87.8%	81.8%	75.3%	53.8%	72.1% (10135)
	Total	100.0% (2468)	100.0% (3131)	100.0% (3977)	100.0% (4486)	100.0% (14062)

TABLE 1. *Crosstable: Health *Age group*
N: 14062; Chi-square: 1212.489; df:3; sign: .000; Coeff. Contingency: .282
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

Beyond age, as expected, education proves to be a strong determinant in the variation of health states. People with higher levels of education (high school and university degree and more) report better health (83.4%) compared to those with elementary school (37.7%) or middle school (67.2%) (see Table 2). It shows that higher education levels are linked to better health outcomes.

	Education Attained				Total
	No school degree/ Primary education	Secondary education	High /Technical/ Vocational school degree	University degree and more	
Bad Health	62.3%	32.8%	20.4%	16.6%	27.9% (3871)
Good Health	37.7%	67.2%	79.6%	83.4%	72.1% (10019)
Total	100.0%	100.0%	100.0%	100.0%	100.0%

	(979)	(5747)	(4927)	(2237)	(13890)

TABLE 2. *Crosstable: Health* Education Attained*
N: 13890; Chi-square: 924.418; df: 3; sign: .000; Coeff. Contingency: .250
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

Those who are employed report better health status than those who are not (79.4% vs 65.8%, Table 17, Appendix). Being employed has a lesser impact on health distributions compared to income and economic conditions perceptions. Those with high annual incomes (Table 18, Appendix) mostly report having good and excellent health (79.4% vs. 20.6% who do not report this); in contrast, the share of those with low incomes who report good health is only 57.9%. Similar findings can be observed in the distributions of individuals' perceptions of their economic conditions (Table 19, Appendix). The percentage of respondents who reported both living comfortably and having good health is 83.2%. Among those who stated that they could not manage with their earnings to meet the costs of living, 40.8% reported they do not enjoy good health: economic conditions are then correlated to health conditions. As expected, diseases affect the way men and women perceive their health: while 78.3% of people without diseases report good health compared to 22.2% of those with one or more diseases, women report lower health states than men by about 6 percentage points (81.1% vs. 74.2%). In addition, the variable "diseases" result the one most associated with the perception of one's health (Table 20, Appendix). This result supports the idea that individuals evaluate the objective health conditions they experience while constructing their subjective perception of health. By cross-referencing health status reports with perceived levels of satisfaction and happiness, we identify a positive association between the two factors. Among individuals who reported poor/bad health, 86% were unsatisfied and only 14% were satisfied, in contrast to those who claimed good health (Table 3). Individuals are usually to give higher ratings to poor health compared to good health when stating their levels of satisfaction.

	Subjective general health			
	Bad health	**Fair health**	**Good health**	Total
Not satisfied	86.2%	65.9%	53.1%	57.4% (7941)
Satisfied	13.8%	34.1%	46.9%	42.6% (5895)
Total	100.0% (458)	100.0% (3426)	100.0% (9952)	100.0% (13836)

TABLE 3. *Crosstable: Life satisfaction*Subjective general health.*
N: 13836; Chi-square: 331.270; df: 2; sign: .000; Coeff. Contingency: .153.
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

Like the findings on satisfaction levels, the same can be said about happiness levels, which decrease when health is perceived negatively. Among those who reported poor/bad health, 80% also showed low levels of happiness. The 50% of the population who perceived themselves as healthy also believed they were

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happy, compared to 20% who reported happiness despite poor health (Table 4). The marked association between subjective general health and subjective well-being (happiness and life satisfaction) is in line with what empirical evidence shows: those who report being less healthy also report being less happy (Easterlin, 2003; Conceição & Bandura, 2008)

	Subjective general health			Total
	Bad health	**Fair health**	**Good health**	
Sad	80.1%	62.8%	49.7%	53.9% (7525)
Happy	19.9%	37.2%	50.3%	46.1% (6435)
Total	100.0% (463)	100.0% (3426)	100.0% (10071)	100.0% (13960)

TABLE 4. *Crosstable: Life satisfaction*Subjective general health.*
N: 13960; Chi-square: 309.307; df: 2; sign: .000; Coeff. Contingency: .147.
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

According to the ANOVA analysis, gender has no correlation to perceived "happiness" and "life satisfaction"[11]. The average values for men and women are similar and no significant association emerges between variables (Table 21, Appendix). Opposite, the averages for age groups (see Tab.5) show that life satisfaction one's life and happiness decrease as age increases.

Age group (25-68)	Average	N	Std.Deviation
25-34	0,108614	2402	0,914260
35-44	0,066183	3084	0,976717
45-54	0,014786	3876	0,998396
55-68	-0,118509	4407	1,049477
Total	0.000000	13769	1.000000

TABLE 5. *Compare means: Subjective well-being*Age group; Variance between 104.587; within: 13663.595; dfl:3; F: 35.122; sign: .000; Coeff. Contingency: .306; Eta2: .008. The total average is= 0 and the total Std. Deviation = 1 because the sample is selected from age 25 to 68.*
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

The analysis of variance by educational attainment (Table 6) shows that individual subjective well-being increases in a linear trend: as education increase, so does the levels of satisfaction and happiness. This example highlights the benefits of being healthy and contradicts the idea that being higher educated leads to feeling dissatisfied with one's aspirations and accomplishments, as is reported in Blossfeld & Maurice (2019).

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[11] To conduct this analysis, we employed the subjective well-being summary metric variable got through PCA (Principal Component Analysis), as explained in section 3.1.4.

Education Attained	Average	N	Std. Deviation
No school degree/ Primary education	-0.463619	959	1.293559
Secondary education	-0.090831	5588	1.079285
High /Technical/ Vocational school degree	0.104373	4845	0.872809
University degree and more	0.223245	2208	0.786820
Total	0.003408	13599	0.999396

TABLE 6. *Compare means: Subjective well-being*Education Attained;*
N: 13599; variance between: 414.850; within: 13167.188; df: 3; F: 142,781; sign:.000; Coeff. Contingency: .363; Eta2: 0.31.
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

Furthermore, investing in education, even in adulthood, has a positive impact on personal happiness and life satisfaction (Tab.22, Appendix). Individuals who reported being in a life-long learning process feel more satisfied than those who do not.

The working conditions shows that being employed is associated with greater satisfaction than being unemployed (Tab. 23, Appendix). Even when considering the averages for the "occupational status" variable (which is divided into four categories from low to high), the increase becomes even more evident. The same can be said for income levels (Tab. 24, Appendix) and perception regarding one's economic condition whose results show the strongest association with perceived well-being (Table 7, below).

Feeling about household's income nowadays	Average	N	Std.Deviation
Living hardly	-0.411824	3747	1.184743
Living discretly	0.073575	6533	0.892555
Living comfortably	0.358361	3168	0.759797
Total	0.005429	13448	0.997023

TABLE 7. *Compare means: Psychophysical well-being*Feeling about household's income nowdays. Variance beetween: 1077.299; within: 12290.114; df: 2; F: 589.281; sign:.000; Coeff.Contingency: .396; Eta2: .081.*
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

Those who report having diseases/illnesses (one or more) are less satisfied compared to those who do not (Tab.25, Appendix). People who reported good health are more satisfied than those who indicate the opposite. This result suggests that individuals take into consideration their health status when assessing their happiness and life satisfaction life. When health is deemed good, well-being rises as well.

Now, we proceed to present the findings of the multivariate analysis models. The objective of this research phase is to assess the potential influence of educational attainment on dimensions of subjective health and well-being. First, the effect of individual and control variables (gender, age group; high

education; lifelong learning;) on the respondent's occupational status (labour market access) is shown. Next, we investigate the determinants of self-reported health status. The last model examines how variables relate to "Happiness" and "Life satisfaction" to identify the most affecting factors.

4.2   Multivariate analysis

The Health Attainment model revisited (Fig. 2) is employed to examine the relationship between education and its effects on health and well-being, considering the mediating factors of education outcomes, such as labour market access and economic conditions[12]. In this first part of the analysis, we estimate the effects of education on labour market access. To observe the joint effect of education and economic conditions on health, happiness, and life satisfaction, we develop four different regression models. In the first, we estimated what impacts being employed in the labour market (dependent variable). Since the dependent variable is dichotomous (in vs. out), a binary logistic regression model was utilized. Recoding the dependent variable with dichotomous values (between 0 and 1) allows to express the results of logistic regression in terms of logs-odds (Di Franco, 2017, 241). Therefore, "employed" has been recoded as 1 and "unemployed" as 0. The independent variables used are: Gender; Age Group (25-34 vs. 35-44; 35-54; 55-68), Education (high vs. low); Lifelong Learning (yes vs. no).   The reference equation with the model's reference variables is the following:

1.1 $\ln(\frac{pi}{1-pi}) = \beta_0 + \beta_{1X_1} + \ldots + \beta_{kx_k}$

1.2 $y = \beta_0 + \beta_1 GENDER_1 + \beta_2 AGE\ GROUP_2 + \beta_3 HIGH\ EDUCATION_3 + \beta_4 LIFELONG\ LEARNING_4 + \beta_5 HEALTH\ PERCEIVED_5$

The results are now observed graphically (Fig. 3) in terms of logs-odds and probability differences (estimates are given in Table 26, Appendix).

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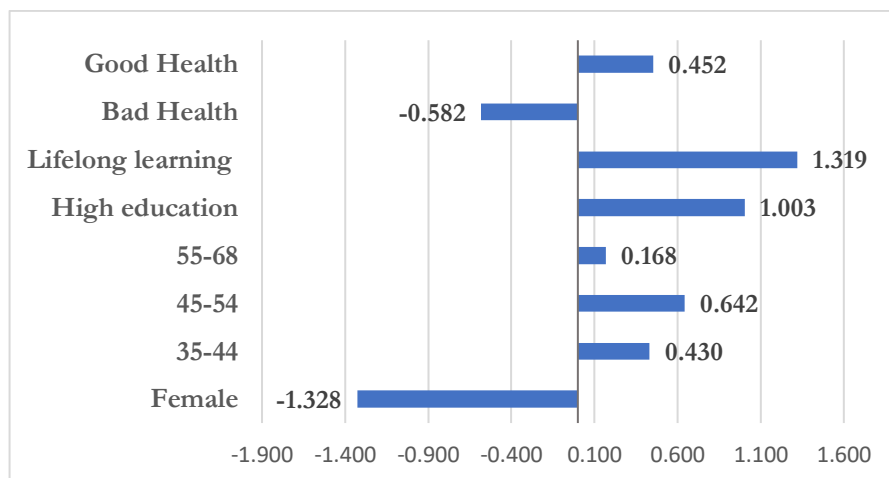
[12] Although the Health Attainment model includes it, this research does not analyse the impact of social origin on the dimensions considered.

Gender affects women's labour market access, making them less likely to take part compared to men. This result is in line with empirical research that shows women struggling compared to their male counterparts in accessing the labour market (55.0% compared to 74.7% of male. Istat, 2022). Among the age groups, the 45-54-year-olds experience the greatest impact of being employed in the labour market, following an accordion pattern. The oldest group (55-68) is not significant in the model. Education, both during school and later in life, is crucial for having a significant impact on employment in the labour market. Respondents with at least a high school diploma or more (university degree) have nearly triple the likelihood of being employed compared to those with an elementary or middle school diploma. On the flip side, those who reported taking at least one lifelong learning course after school had nearly 4 times higher odds. This evidence shows the economic effects of education and underscores the value of investing in education for employment, even as adults. Last, we can observe the retroactive effect of self-reported health on access to the labour market. Perceiving oneself to be in poor health has a significant impact on labour market, acting as an entry barrier. Conversely, those who reported satisfactory health are 1.5 times more likely to join the workforce (see Tab., Appendix).

The second model allows us to observe the impact of the variables considered on self-perceived health status. Education attained and economic conditions jointly influence respondents' self-perceived health status. Since the dependent variable is dichotomous a binary logistic regression model was utilized (Di Franco, 2017, 241). The independent variables of the model are shown in the reference equation (1.3) whose values have been replaced with the reference equations for the previous model (1.1).

1.3
$$y = \beta_0 + \beta_1 GENDER_1 + \beta_2 AGE\ GROUP_2 + \beta_3 HIGH\ EDUCATION_3 + \beta_4 EMPLOYED\ VS\ UNEMPLOYED_4 + \beta_5\ ECONOMIC\ CONDITIONS_5 + \beta_5 SATISFACTION\ FOR\ LIVING\ CONDITIONS_5 + \beta_6 HAPPINESS_6 + \beta_7 DISEASES_7$$

Results of estimates are reported in Table 27 in the Appendix, while the graphic version is displayed in figure below (Fig.5).
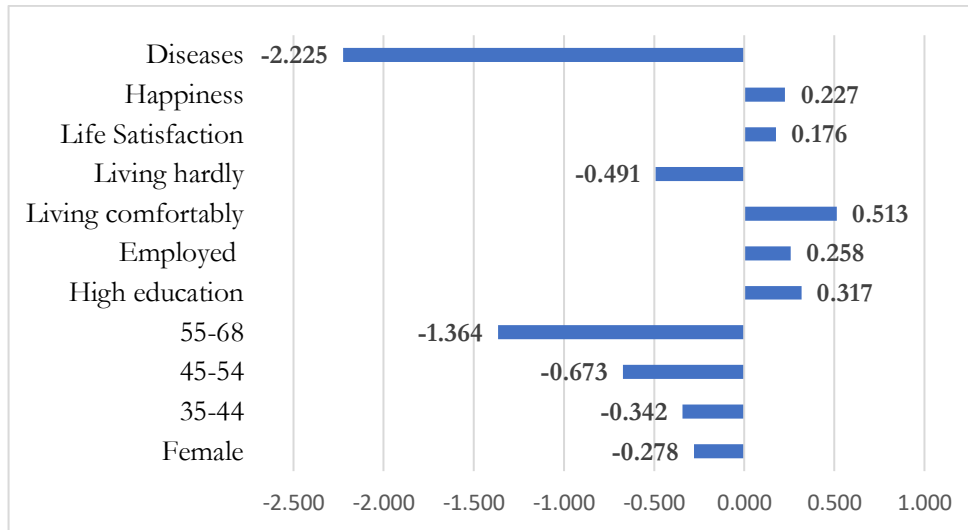
FIGURE 4. *Binary Logistic regression model. Dependent variable: Health perceived (good health vs bad). Independent variables: Gender (female); Age groups; High education; Employed; Lifelong learning; Economic living conditions; Social Capital (metric); Subjective well-being (metric); Diseases. In the graph, the values correspond to the estimates (B) produced by the model.*
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

The estimates shows that women perceive worse health status than men which in line with the Italian trend discussed before (see par. 4.1). Despite averagely adopting healthier lifestyles than men (less exposure to smoking, less alcohol consumption, longer life expectancy etc.), women perceive their health as worse than men, especially as they age. Moreover, women are more affected by chronic diseases and take more medication, which leads to lower health states compared to men (ISTAT, 2022a). The analysis of age groups reveals the most significant impact on health status. As expected, the oldest group (55-68 years old) reported worse perceived health status. The likelihood of perceived good health gradually decreases as one moves from the younger age group to the older age group. Age proves to be an important dimension for estimating changes in subjective health states, but education also has a significant effect, especially when related to age. People with a high school diploma or university degree (and more) report better health compared to those who have only completed the lowest levels of education. The odds of reporting good health statuses are 1.372 (see Tab. 25, Appendix) times greater for individuals with higher levels of education than for those who have attained only primary and middle school degrees. Education then also affects health status through the position attained in the labour market (in terms of in/out) and the economic conditions earned. The graph (Fig. 5) clearly illustrates a connection between lower economic coping ability and respondents' perception of health status. When the economic resources declared by respondents are poor or insufficient to cope economically with aspects of daily living, then self-reported health status also worsens. Life satisfaction and happiness also have a positive influence on the perception of health status: individuals who expressed high life satisfaction reported also better health. Those who experience a high level of happiness are 1,245 times more likely to report good health (see Tab. 24, Appendix). This result is in line with some empirical evidence that has shown a strong association between self-perceived health and levels of individual

happiness and satisfaction. According to Easterlin (2003), individuals who describe themselves as less healthy also express lower levels of happiness, and conversely. Last, the presence of diseases negatively affects the state of health, representing the objective dimension that individuals consider when forming their perception.

The results of the two last regression models on perceived happiness and life satisfaction (subjective well-being) are shown in Table 6 and 7. Within this section of the analysis, we choose to estimate the factors influencing both overall happiness levels and life satisfaction, separately. The choice to use a binary logistic regression model also for these models was based on the chosen dependent variables, which are dichotomous (see par. 3.1.4)[13]. The independent variables used for the models are the same as those employed for the health estimation model. In this estimations process, unlike the previous one, we entered the independent variables in stages to isolate and examinate the effect of education, economic conditions, and health with no interference from other variables. We measure the impact of health on happiness and life satisfaction through self-reported health rather than the presence of diseases (which we recall is a spurious variable).

Life satisfaction	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6
R²	.011	011	.016	.054	.060	.344
Female	*-.112	*.023	*-.004	*-.004	*.003	*-.069
35-44	*-.011	*-.019	*.011	*.020	*.029	*.161
45-54	-.060	-.122	*-.059	*-.103	*-.075	*.112
55-68	-.106	-.145	*-.070	*-.157	*-.062	*.181
High Education	.394		.297	*.059	*.042	*-.032
Employed		.466	.378	.150	*.128	*.153
Living comfortably				.660	.641	.525
Living hardly				-.579	-.536	-.426
Bad Health					-1.095	-.951
Good Health					-.278	.131
Happiness						2.805

TABLE 8. *Determinants of Life satisfaction. Model 1, 2; 3; 4;5;6. (N=6091). Standardised Beta coefficients. All values are significant (< 0.05) except those marked with *.*
Source: In the first model, the "Satisfied of living conditions" was codes as 1 and the "Unsatisfied" as 0. In the second, "Feeling happy" was codes as 1 and "Sad" as 0 author's elaboration from ESS 2012,2016,2018, 2020 dataset.

In the first proposed estimation model for life satisfaction, (Table. 8) we observe the isolated impact of education net of control variables, such as gender and age. Besides having a negative impact on life satisfaction, gender is not significant. The negative impact is evident across age groups, with older individuals showing lower satisfaction in most proposed steps. Education appears to exert the strongest impact on life satisfaction. In terms of probability, having a high degree (high school diploma or university degree and

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[13] In the first model, the "Satisfied of living conditions" was codes as 1 and the "Unsatisfied" as 0. In the second, "Feeling happy" was codes as 1 and "Sad" as 0

above) increases the likelihood of being satisfied with life by 1.5 points. This is true if we consider only the impact of education isolated from economic conditions. Indeed, when we replace occupational status (being employed) with education, we can see that this affects positively and to a greater extent than education, showing a direct effect on satisfaction itself. This result is evident when we look at Model 3 in which both dimensions are included: education and being employed. Among the two variables, being employed has a greater impact on life satisfaction compared to education. We can explain this outcome through the substantial impact of educational attainment on employment prospects. Individuals with higher levels of education have greater access to and experience better quality in the labour market, leading to increase their living conditions. Economic variables then absorbed the effect of education, as shown in model 4 in which perceptions about one's economic status (strongly correlated with income) are present. Being in comfortable economic conditions increases the likelihood of reporting higher levels of satisfaction, confirming evidence shown in the literature (Cheung & Lucas, 2015). Including economic conditions in the model absorbed the impact of both being employed and education, which is also no longer significant. When considering economic conditions alongside perceptions of personal health, it becomes evident that they greatly influence one's perception of satisfaction and well-being (Model 5). If we do not consider the influence of happiness, poor health emerges as the primary factor negatively affecting life satisfaction. Since including happiness distorts the effect of the other variables, we consider the model 5 the concluding model. Due to multicollinearity, certain values in the model are not statistically significant.

Happiness	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6
R^2	.013	.010	.015	.041	.047	.335
Female	*.009	.106	*.081	*.068	*.078	.112
35-44	*-.100	-.175	*-.147	-.134	-.123	-.236
45-54	-.171	-.268	-.228	-.267	-.236	-.327
55-68	-.322	-.362	-.303	-.375	-.277	-.406
High Education	.347		.291	.112	.094	.110
Employed		.365	.284	*.080	*.057	*-.033
Living comfortably				.518	.494	.173
Living hardly				-.487	-.444	-.194
Bad Health					-.684	*-.182
Good Health					.317	.235
Life satisfaction						2.805

TABLE 9. *Determinants of happiness. Model 1, 2; 3; 4. (N=6091). Standardised Beta coefficients. All values are significant (< 0.05) except those marked with *.*
Source: author's elaboration from ESS 2012,2016,2018, 2020 dataset

The impact of age on happiness, particularly for older populations, is negative according to the estimation model (Table 9). All the models presented support the validity of this linear trend, suggesting that individuals consider the resources and possibilities that arise from different ages in life when assessing

their level of happiness. Within the first suggested model, controlling for age and gender (with no significant impact), education shows the strongest positive influence on happiness. When considering only the impact of being employed on this aspect (model 2), the effect becomes even more significant, once again showing a direct relationship between employment status and happiness. In Model 3, the combined effect of education and employment does not significantly differ, although education appears to have a greater impact than being employed. Including economic conditions in the model profoundly changes this result, as they absorb the effect of being employed and spill over into perceived happiness. Despite economic conditions, education still has a direct impact. When people declared comfortable economic conditions, the likelihood of feeling happy is raised by at least 1.6 points compared to other dimensions. Conversely, not having enough economic resources greatly affects how one evaluates their own happiness. The result barely changes when we account for self-reported health status (model 5). Declaring good health has a meaningful effect on happiness, but it is a bad health state that makes a difference in this evaluation. According to Conceição & Bandura (2008), individuals consider health as a significant factor in determining their overall happiness. Last, including life satisfaction in this model distorts the impact of the other variables considered because of its strong correlation with happiness levels. For these reasons, the final model is to be considered as model 5.

5.   Conclusions and discussion

This research aimed to explore and examine the non-economic effects of education, such as subjective health and well-being, specifically detected through life satisfaction and overall happiness levels perceived. The study also looked at the role of occupational status in the relation between education and health and well-being, regarding labour market access and earnings.

The results suggest that age is a crucial element for both perceived health and subjective well-being, although its influence may differ slightly. Regarding health, we observe a systematic decrease as age rises, aligning with natural aging and decline in health. For happiness and life satisfaction, this trend is not so linear: the worst levels of satisfaction do not always correspond to the most adult age groups. The adults feel more satisfied with life because their expectations align with reality or because they have accomplished their life goals. Education, however, acts as a driver of differentiation related to age. Individuals who have attained higher level of education (secondary school diploma or university degree and above), hold a more positive perception of their own health compared to those with only primary or lower secondary education. The same trend applies to levels of happiness and life satisfaction, although to a lesser extent than health, which appears to be the dimension most influenced by educational attainment. Through education, individuals can achieve a better understanding of health risks, health information, and develop healthier lifestyles and attitudes (Jungbauer-Gans e Gross 2009; Giancola & Colarusso, 2021). Self-reported health status largely contributes to the levels of happiness and satisfaction. Employment and its associated economic resources play a significant role in shaping perceptions of health status and overall levels of happiness and life satisfaction, overcoming the impact of educational

attainment. Indeed, when economic conditions are poor and useless, both health status and subjective well-being drop dramatically. Including employment and economic conditions, which are closely linked to education, mitigates the direct impact of education levels on happiness and life satisfaction. Regarding health, education plays a crucial role in individuals' well-being, surpassing the influence of employment. Last, the results show individuals consider satisfaction and happiness in their life while assessing their health status. When these levels are higher, there is a higher likelihood of rating health positively. Besides assessing their level of subjective well-being, individuals also take health into account when rating their own satisfaction. When individuals perceive their health status as well, they report higher levels of happiness and life satisfaction.

The relationship between an individual's social position and their health and subjective well-being is supported from a theoretical perspective. Health and well-being disparities and inequalities are impacted by both formal education and the resources it generates. Access to resources that influence an individual's health and well-being depends heavily on employment and economic resources. The results of our empirical analyses support Lucchini and Sarti's (2009) Health Attainment model. Although not explicitly measured in the analysis, the influence of social origin manifests through its effects on education and employment outcomes. Empirical evidence (Bernardi & Ballarino, 2016; Pensiero, 2019; Rizzi, 2023) has indeed clearly shown a direct effect of social origin on the education attained, which directly affects labour market access and earnings.

The lack of objective data on health and well-being, as well as attitudes towards health, imposes limitations on this analysis. The analysis should cover not only health and well-being data but also civic participation, political interest, and other non-economic effects of education. Several studies suggest that social origin, education, and employment status contribute to increasing these dimensions (Campbell, 2006; Brand, 2010 Assirelli, 2014). Due to socioeconomic factors, it is widely believed that higher levels of education contribute to greater civic engagement and political interest. Since information on civic and political participation is present in the SSE, the same database as in this analysis can be used.

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Isco 08 original categories	Frequencies	Valid %	Five Cat.%	Three cat.%
Legislators, senior officials, and managers	456	3.9	19.2	35
Professionals	1798	15.3		
Technicians and associate professionals	1866	15.8	26.9	
Clerical support workers	1306	11.1		32.3
Service workers and shop and market sales workers	2165	18.4	21.2	
Skilled agricultural and fishery workers	280	2.4		
Craft and related trades workers	1736	14.7	21	32.8
Plant and machine operators and assemblers	746	6.3		
Elementary occupations	1386	11.8	11.8	
Armed Forces	46	0.4		
Totale	11783	100		
Sistema	2315			
Totale	14098			
Armed forces fit into the third category for both recodifications				

TABLE 10. *Recoding individual occupational status.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Household's total net income, all sources	Frequencies	Valid %	Five categories %
J - 1st decile	797	9.3	23
R - 2nd decile	1183	13.7	
C - 3rd decile	1236	14.4	28
M - 4th decile	1171	13.6	
F - 5th decile	906	10.5	21.7
S - 6th decile	962	11.2	
K - 7th decile	986	11.5	19.1
P - 8th decile	652	7.6	
D - 9th decile	415	4.8	8.2
H - 10th decile	293	3.4	
Total	8601	100	
Refusal	4005		
Don't know	1465		
No answer	27		
Total	5497		
Total	14098		

TABLE 11. *Recoding individual occupational status.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Correlations		Household's total net income, all sources	Feeling about household's income
Household's total net income, all sources	Pearson correlation	1	.559**
	Sign. (a due code)		0
	N	8601	8562
Feeling about household's income	Pearson correlation	.559**	1
	Sign. (a due code)	0	
	N	8562	13709
** Correlation is significant at the 0.01 level (two-tailed)			

*TABLE 1210. Correlations Household's total net income, all sources * Feeling about household's income nowadays. Coeff.Contingency: .526; Gamma= .617; R di Pearson: .559.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

		How happy are you	How satisfied with life as a whole
How happy are you	Pearson	1	.671**
	Sign. (a due code)		0
	N	13990	13769
How satisfied with life as a whole	Pearson	.671**	1
	Sign. (a due code)	0	
	N	13769	13860
** Correlation is significant at the 0.01 level (two-tailed)			

*TABLE 13. Correlations: How happy are you? *How satisfied with life. Coeff.Contingency: .765; Gamma: .704; Pearson R: .671.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Total variance explained						
Compnt	Initial eigenvalues	Sums of extraction squares loaded				
	Total	% variance	% cumulative	Total	% variance	% cumulative
1	1.671	83.557	83.557	1.671	83.557	83.557
2	0.329	16.443	100			
Extraction method: Principal component analysis.						

TABLE 14. *Total variance explained; ACP results (Subjective well-being)*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

	Component
	1
How happy are you	0.914
How satisfied with life as a whole	0.914
Extraction method: 1-component principal component analysis extracted.	

TABLE 15. *Component Matrix; ACP results (Subjective well-being).*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

		Gender		
		Male	**Female**	Total
Good health vs Bad	**Bad Health**	25.3%	30.5%	28.0% (3915)
	Good Health	74.7%	69.5%	72.0% (10091)
Total		100.0% (6917)	100.0% (7089)	100.0% (14006)

TABLE 16. *Crosstable: Health*Gender. N: 14006; Chi-square: 47.738; df: 1; sign: .000; Coeff. contingency : „058.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

		In/out labour market		Total
		Unemployed	**Employed**	
Good health vs Bad	**Bad Health**	34.2%	20.6%	24.3% (2909)
	Good Health	65.8%	79.4%	75.7% (9073)
Total		100.0% (3219)	100.0% (8763)	100.0% (11982)

TABLE 17. Crosstable: Health*In/out labour market. N: 11982; Chi-square: 235.847; df: 1; sign: .000; Coeff. contingency: .139.
Source: Author's elaboration from ESS 2012,2016,2018,2020 dataset

		Household's total net income					Total
		Low	**Middle Low**	**Middle**	**Middle High**	**High**	
Good health vs Bad	**Bad Health**	42.1%	29.0%	27.4%	18.2%	20.6%	28.9% (2487)
	Good Health	57.9%	71.0%	72.6%	81.8%	79.4%	71.1% (6110)
Total		100.0% (1979)	100.0% (2408)	100.0% (1866)	100.0% (1636)	100.0% (708)	100.0% (8597)

TABLE 18. Crosstable: Health*Household's total net income. N:8597; Chi-square: 283.899; df: 4; sign: .000; Coeff. contingency: .179.
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

		Feeling about household's income nowadays			Total
		Living hardly	**Living discretly**	**Living comfortably**	
Good health vs Bad	**Bad Health**	40.8%	25.8%	16.8%	27.9% (3822)
	Good Health	59.2%	74.2%	83.2%	72.1% (9862)
Total		100.0% (3827)	100.0% (6650)	100.0% (3207)	100.0% (13684)

TABLE 19. Crosstable: Health*Feeling about household's income nowadays. N: 13686; Chi-square: 527.245; df: 2; sign: .000; Coeff. contingency: ,193.
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

| | Diseases | | Total |
	Yes	No	
Good health vs Bad	**Bad Health**	77.8%	21.7%	27.8% (3890)
	Good Health	22.2%	78.3%	72.2% (10090)
Total		100.0% (1521)	100.0% (12459)	100.0% (13980)

TABLE 20. *Pivot tabl: Health*Disease. N: 13980; Chi-square: 2120.499; df: 1; sign:.000; Coeff. contingency: .363.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Gender	Average	N	Std.Deviation
Male	0.010078	6761	1.020219
Female	-0.010532	6954	0.98144
Total	-0.000372	13715	1.000761

TABLE 21. *Compare means: Subjective well-being*Gender. Variance beetween: 1.456; within: 13733.104; df:1; F: .454; sign:.228; Coeff.Contingency: .155; Eta2: .000.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Lifelong learning, last 12 months	Average	N	Std.Deviation
Yes	0.221885	2603	0.847718
No	-0.047691	11037	1.025062
Total	0.003753	13640	0.999269

TABLE 22. *Compare means: : Subjective well-being *Lifelong learning. Variance beetween: 153.061; within: 13466.043; df: 1; F: 155.017; sign: .000; Coeff.Contingency: .190; Eta2: .011.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

In/Out	Average	N	Std.Deviation	Occ. Status	Average	N	Std.Deviation
Unemployed	-0.231987	3157	1.195387	Out.oc	-0.138246	1438	1.132234
Employed	0.115343	8580	0.880974	Low	-0.108498	3796	1.146204
Total	0.021915	11737	0.987592	Middle	0.018788	3704	0.921805
				High	0.164452	4051	0.827809
				Total	0.009631	12989	0.997833

TABLE 23. *Compare means: Subjective well-being *Employed vs Unemployed; Variance between: 278.423; within: 11168.291; df:1; F: 292.555; sign: .000; Coeff. Contingency: .267; Eta2: .024. Compare means: Subjective well-being*Occupational status. Variance between 181.823; within: 12749.535; df: 3; F: 61.724; sign: .000; Coeff.Contingecy: .314; Eta2: .014.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Household's total net income	Average	N	Std.Deviation
Low	-0.379446	1928	1.299933
Middle Low	-0.013137	2366	0.937512
Middle	0.162501	1848	0.865680
Middle High	0.295535	1617	0.759491
High	0.388305	706	0.769934
Total	0.034219	8464	1.009976

TABLE 24. *Compare means: Subjective well-being *Household's total net income. Variance beetween: 564.487; within: 8068.230; df: 4; F: 147.957; sign:.000; Coeff.Contingency: .460; Eta2: .065.*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

Diseases	Average	N	Std. Deviation	Good health vs Bad	Average	N	Std. Deviation
Yes	-0.320556	1513	1.229805	Bad Health	-0.325955	3853	1.138361
No	0.042092	12190	0.959849	Good Health	0.128039	9896	0.907250
Total	0.002058	13703	0.999687	Total	0.000810	13749	0.998541

TABLE 25. *Compare means: : Subjective well-being *Disease. Variance beetween: 176.981; within: 13516.608; df: 1; F: 179.398; sign:.000; Coeff.Contingency: .245; Eta2: .013. : Subjective well-being*Health. Variance beetween: 571,589; within: 13136,067; df: 1; F: 598,162; sign:.000; Coeff.Contingency: .204; Eta2: .042*
Source: author's elaboration from ESS 2012,2016,2018,2020 dataset

	B	S.E.	Wald	Df	Sign.	Exp (B)
Female	-1.328	.048	753.865	1	.000	.265
35-44	.430	.071	36.736	1	.000	1.537
45-54	.642	.069	86.809	1	.000	1.900
55-68	.168	.071	5.544	1	.019	1.183
High education	1.003	.049	414.036	1	.000	2.727
Life long learning yes	1.319	.082	259.468	1	.000	3.740
Bad Health	-.582	.157	13.672	1	.000	.559
Good Health	.452	.054	70.717	1	.000	1.571
Costante	.440	.078	32.239	1	.000	1.553

a.   *Variables entered in step 1: Female. 35-44. 45-54. 55-68. High education. Lifelong learning. Disease*

TABLE 26. *Determinants of being employed. Binary Logistic Regression. Model 1. [Number of valid cases: 6091; Overall percentage predicted correctly: 73%; Log likelihood 11542.006; Cox and Snell .168; Nagelkerke .244; Chi square: 2158.384; df: 8; sign: .000].*
Source: author's elaboration from ESS 2012.2016.2018.2020 dataset

	B	S.E.	Wald	Df	Sign.	Exp (B)
Female	-0.278	0.051	29.074	1	0.000	0.758
35-44	-0.342	0.089	14.953	1	0.000	0.710
45-54	-0.673	0.084	64.911	1	0.000	0.510
55-68	-1.364	0.084	263.136	1	0.000	0.256
High education	0.317	0.053	35.630	1	0.000	1.372
Employed	0.258	0.058	19.748	1	0.000	1.295
Living comfortably	0.513	0.071	51.523	1	0.000	1,670
Living hardly	-0.491	0.057	73.416	1	0.000	0,612
Life Satisfaction	0.176	0.064	7.498	1	0.006	1.192
Happiness	0.227	0.063	13.163	1	0.000	1.255
Diseases	-2.225	0.079	801.505	1	0.000	0.108
Costante	1.789	0.099	326.082	1	0.000	5.983

TABLE 27. *Determinants of health perceived of Italian. Binary Logistic Regression model; Model 3; [Number of valid cases 6091; Overall percentage predicted correctly: 80.3; Log likelihood 10393.565; Cox and Snell .173; Nagelkerke .259; Chi square: 2153.017; df: 11; sign: .000].*
Source: author's elaboration from ESS 2012.2016.2018.2020 dataset.
Variables entered in step 1: Female, 35-44, 45-54, 55-68, High education,
Employed vs Unemployed, Living comfortably,
Living hardly, Life satisfaction, Happiness, Diseases.