

# Happy life expectancy: an indicator to measure the impact of The Great Recession in Italy

(very preliminary draft, please do not quote!)

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## **ABSTRACT**

The impact of The Great Recession on the psychological wellbeing of the Italian population has been widely debated among researchers, policy makers and media. In order to better understand the influences of the crisis on the feelings of the Italian population we propose the happy life expectancy in order to measure the impact of the crisis by sex and age. Using data from the Health Survey for Italy carried out in 2004 and 2012 and the official ISTAT life tables, using the Sullivan Method, we analyse the changes in life expectancy, healthy life expectancy and happy life expectancy between the two periods. Results show that women, despite the improvements in life expectancy and healthy life expectancy, may expect to live less years happy (except for those aged over 60) and in general, the proportion of life spent in a happy mode has decreased. On the contrary, men incremented their happy life expectancy between 2004 and 2012 and they may expect to live a higher proportion of life happy after age 60. These results confirm other studies that shows how the crisis hit young and adult people more strikingly than older people.

## **BACKGROUND**

Since Sullivan Method (weighting the age-specific life table person years lived (Lx) with age-specific proportions of a given condition) has been introduced over 40 years ago, many applications of cross-sectional data to life tables have been proposed. Probably the most famous and widely used, is the healthy life expectancy (HLE) that summarises the average number of years that a person can expect to live in "good health" by taking into account years lived in conditions perceived as good or very good. Several versions of healthy life expectancy have been proposed with reference to different health dimensions. For example life expectancy without chronic diseases, frequently estimated by specific diseases, life expectancy without disability or without functional or instrumental long standing limitations or active life expectancy. The different versions of HLE proved to be a good way to compare different countries in terms of health status of their population and, more important, to show changes in health over time to answer to the critical question whether adding years to life means to add years in good health. Despite the actual wide application of the HLE indicators, these suffer of several big limitations: firstly the poor health status is measured through prevalence so it is not able to depict those who get in and get out from this condition. Therefore using cross sectional data to project life expectancy may bias changes that can occur in the future, but this is true for life expectancy as well. These limitation may have effects when evaluating trends over a short time. Secondly the sample size of the survey should be big enough to allow good estimations for the population by sex and 5 year age groups, especially at older ages.

In 1996 the Dutch sociologist Ruut Veenhoven, proposed to build a indicator to measure quality-of-life in nations (similar to GNP) addressing the problem that “one never knows to what extent the cherished provisions are really good for people”. Therefore the degree to which citizens live long and happily was measured using Happy life expectancy, an indicator that combined life expectancy with survey data on subjective appreciation-of-life (Veenhoven 1996). The indicator was later criticised since, instead of using the Sullivan method, he preferred to simply multiply the given life expectancy at birth with an index of happiness, assuming that happiness was not age-dependent (Lutz et al. 2012). In fact later studies in the U.S. showed how happiness is indeed influenced by age over the life course (Yang 2008).

## RESEARCH QUESTIONS

We study Happy Life Expectancy and its changes between 2004 and 2012 in Italy. We expect that possible decreases may be due to the persistent economic crisis that may have affected the general wellbeing of the Italian population. Since we expect that the crisis has hit certain age groups more strikingly than others, we use the Sullivan method to depict the age profile of happiness. How are changes in happy life expectancy compared to HLE?

## DATA

This analysis include the official ISTAT abridged life tables for Italy for 2004 and 2012 available on ISTAT website. Additionally data from the 2004-2005 and 2012-2013 ISTAT Health Survey are considered. For these surveys the sample sizes are around 128000 and 119000 respectively. From those surveys we selected the question included in the SF15 scale that regards whether the interviewed felt happy in the last 4 weeks. We dichotomized the original variable grouping together “always”, “almost all the time”, “a lot” “partially” against those who felt “almost never” or “never” happy in the last 4 weeks. Since the question has been asked only to people aged 14 and over, for the general life expectancy, we fix the proportion of happy people to 1 for both surveys for those younger than 15. All the proportions have been weighted with the weights provided by ISTAT. Response rate for ISTAT surveys is quite high, well above 80%.

## RESULTS

We show several results based on the calculation of happy life expectancy using the Sullivan method. Life expectancy and happy life expectancy by age are shown in Table 1 and 2 for men and women respectively. As expected life expectancy has increased in the 8 year period considered. Happy life expectancy has increased for men, while for women only for those aged 60 and over. If we clear up the effect on total life expectancy of older people, we can observe more clearly the impact of the crisis on adult people. If we consider partial happy life expectancy (in table 3), a man aged 40 in 2004 may have expected to live happily for 22.0 years up to his 64<sup>th</sup> birthday, spending 91,0% of his life in this age-group happy. A man in 2012 may expect to live happily for 21.8 years (90% of his life), showing a certain stability in the period considered. On the contrary men aged 60 or 74 have experienced an increase in their happy life expectancy and an increase in the proportion of remaining life spent happy. For women in all the age groups instead, we notice a decrease in partial life expectancy (except for older women for whom it remains unchanged) joint with a decrease in the proportion of life spent happy.

Table 1: Life expectancy and happy life expectancy for men – Italy 2004 e 2012

<b>ETÀ</b>	<b>LE2004</b>	<b>LE2012</b>	<b>HLE2004</b>	<b>HLE2012</b>
0	77.9	79.6	72.1	73.4
5	73.3	74.9	67.5	68.7
10	68.3	69.9	62.5	63.7
15	63.4	64.9	57.5	58.7
20	58.5	60.1	52.8	53.9
25	53.7	55.2	48.2	49.2
30	48.9	50.3	43.6	44.6
35	44.1	45.5	38.9	40.0
40	39.3	40.7	34.4	35.5
45	34.6	35.9	30.0	31.0
50	30.0	31.3	25.7	26.7
55	25.5	26.7	21.6	22.6
60	21.3	22.4	17.6	18.8
65	17.3	18.3	14.1	15.3
70	13.7	14.5	10.8	11.9
75	10.4	11.0	7.9	8.8
80	7.7	8.0	5.7	6.2
85	5.5	5.6	3.8	4.2

Table 2: Life expectancy and happy life expectancy for women – Italy 2004 e 2012

<b>ETÀ</b>	<b>LE2004</b>	<b>LE2012</b>	<b>HLE2004</b>	<b>HLE2012</b>
0	83.6	84.4	73.9	73.6
5	78.9	79.7	69.2	68.9
10	74.0	74.7	64.2	63.9
15	69.0	69.7	59.3	58.9
20	64.1	64.8	54.5	54.1
25	59.1	59.8	49.8	49.4
30	54.2	54.9	45.0	44.8
35	49.3	50.0	40.4	40.2
40	44.4	45.1	35.8	35.6
45	39.6	40.2	31.4	31.2
50	34.8	35.5	27.2	27.1
55	30.2	30.8	23.1	23.1
60	25.6	26.2	19.1	19.3
65	21.3	21.8	15.4	15.5
70	17.0	17.5	11.9	12.0
75	13.1	13.5	8.8	8.9
80	9.6	9.8	6.2	6.3
85	6.7	6.8	4.1	4.2

Table 3: Average number of happy years and proportion of life spent happy by age groups– Men and Women Italy 2004 e 2012

Average number of happy years				
Age	Men		Women	
	2004	2012	2004	2012
15-39	23.8	23.7	23.7	23.5
40-64	22.0	21.8	21.0	21.0
65-74	7.8	8.0	7.5	7.5
75+	7.9	8.8	8.9	8.9

% life spent happy by age group				
Age	Men		Women	
	2004	2012	2005	2012
15-39	0.96	0.96	0.94	0.94
40-64	0.91	0.90	0.86	0.86
65-74	0.86	0.86	0.78	0.78
75+	0.76	0.80	0.66	0.66

Figure 1 and 2 show the change in happy life expectancy for men and women. Trends are clear for men: in all age groups, there has been an increase in happy life expectancy, even if this increase was lower compared to the increase in general life expectancy. For women happy life expectancy has decreased in all age groups except for those older than 60. It follows that for women the proportion of life spent in a happy state has decreased for all age groups.

Figure 1: Changes between 2004 and 2012 in happy life expectancy for men – Italy

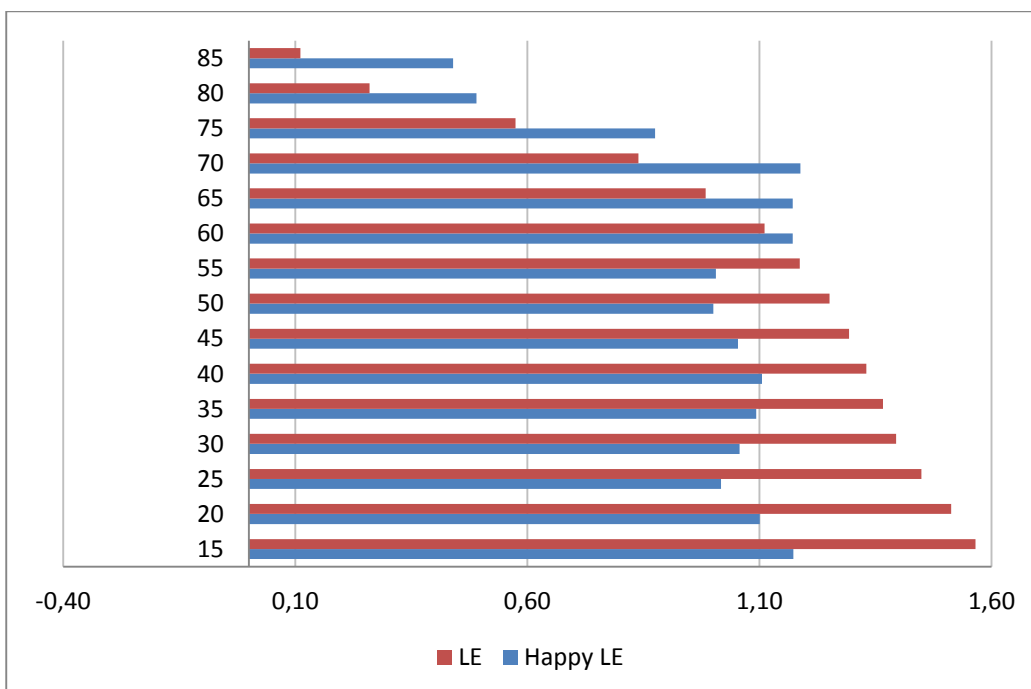
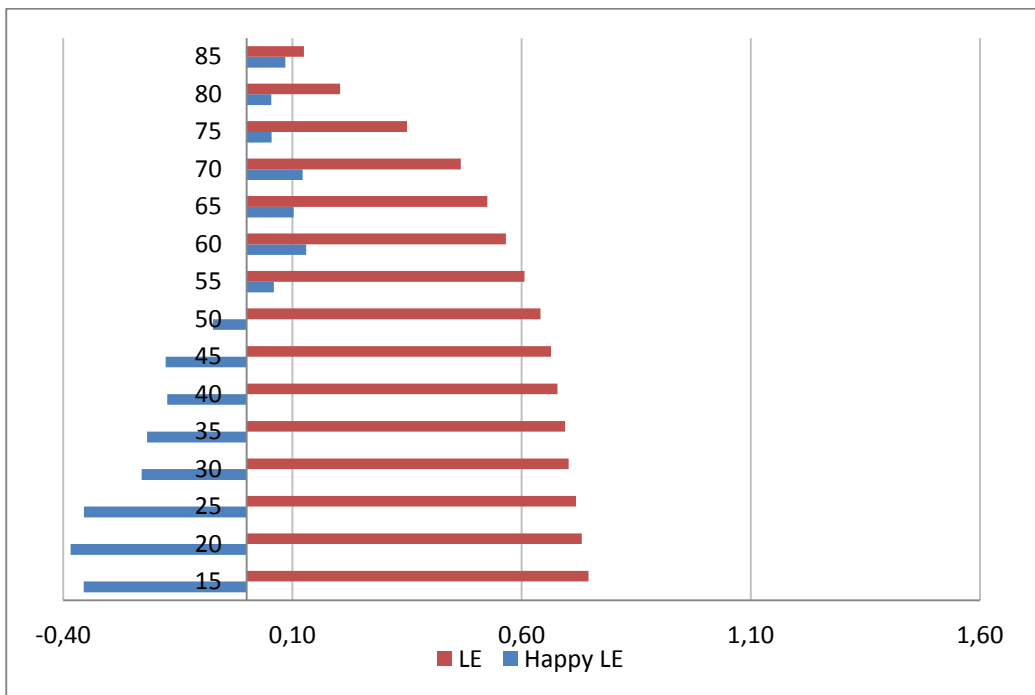


Figure 2: Changes between 2004 and 2012 in happy life expectancy for women– Italy



An additional analysis has been performed to look at changes over time of health life expectancy to check whether health and happiness may have had similar trajectories by sex and ages for the two period considered. Results are shown in figures 3 and 4.

Figure 3: Changes between 2004 and 2012 in life expectancy, health life and happy life expectancy for men – Italy

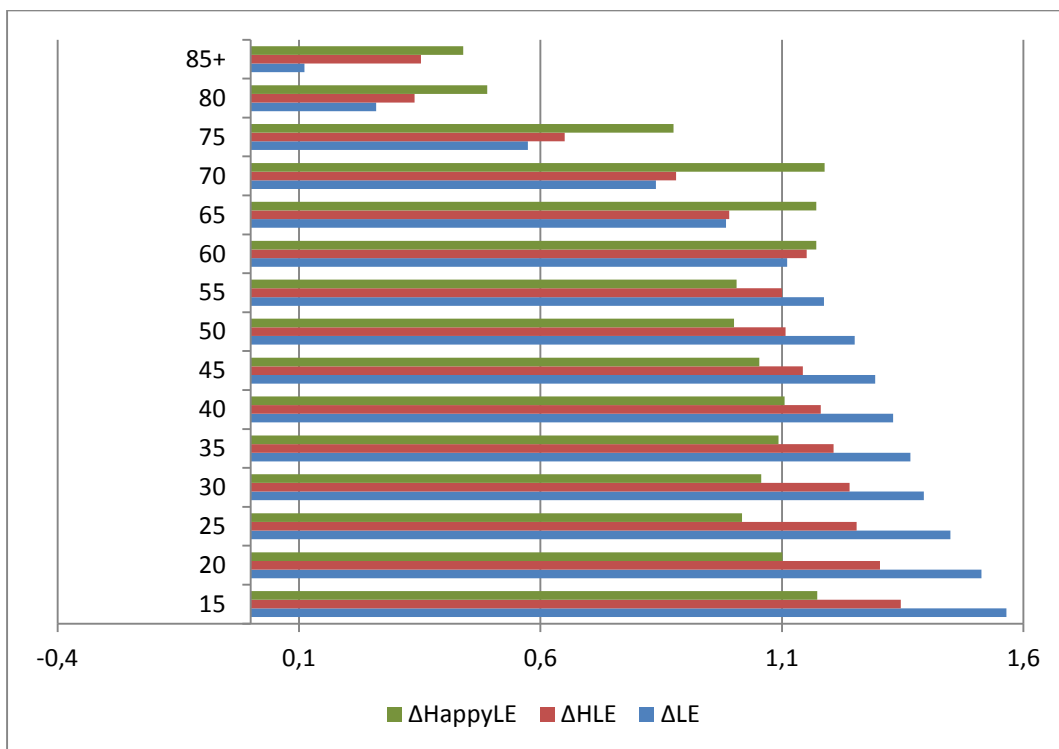
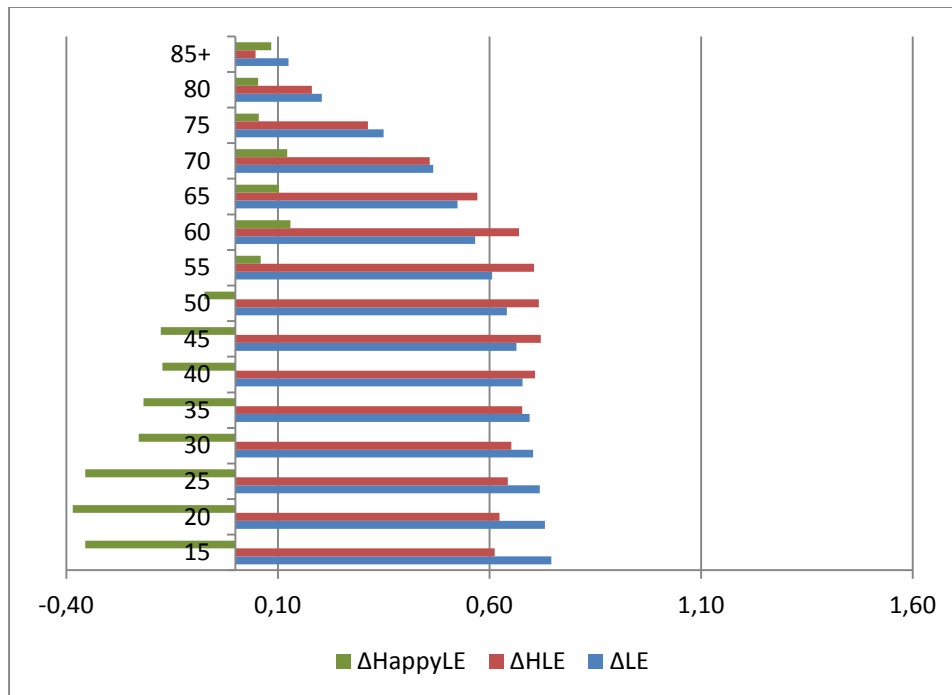


Figure 3: Changes between 2004 and 2012 in life expectancy, health life and happy life expectancy for women – Italy



## CONCLUSIONS AND DISCUSSION

In this research we use two comparable health survey and the Italian life tables to calculate happy life expectancy to evaluate the potential impact of the economic crisis on the psychological wellbeing of the Italian population. Results show that women, despite the improvements in life expectancy and healthy life expectancy, may expect to live less years being happy (except for those aged over 60) and in general the proportion of life spent in a happy mode has decreased. On the contrary, men incremented their happy life expectancy between 2004 and 2012 and they may expect to live a higher proportion of life happy after age 60. These results confirm other studies that shows how in Italy the crisis hit mainly young and adult people that consequently felt less happy compared to the period before the crisis. Older people not only seem not to be affected by the crisis, but among those aged 60 and over, happy life expectancy increased more than all the other indicators. Additionally the crisis is felt by women more intensively compared to men: results based on the comparisons between 2004 and 2012 show in general how women had a decline in all psychological indicators of wellbeing and are more likely than men to renounce to health prevention measures for economic constraints (AISP 2015). Additionally it is reasonable to hypothesise that women may feel more empathy with the difficulties of the new generations through the closer links with their children. Differently from the US in non-crisis years – i.e. 1970-2000- (Yang 2008) the finding that happy life expectancy is shorter than healthy life expectancy has important social and demographic implications. It suggests that despite a good perception of own health, happiness pertains to a sphere of psychological uncertainty that can affect people differently according by age and sex. Our study has several limitations. As all indicators built with the Sullivan method, happy life expectancy uses cross sectional prevalence to provide a longitudinal measure as life expectancy. Two extensions of these preliminary results will be implemented. We will build up the same analysis for Denmark that has been considered the happiest country in the world for many years (World Happiness Report 2013) and that has been hit less acutely by the economic crisis. An indicator of happy life expectancy may provide useful in analysing the wellbeing of human population that is crucial when measuring the world economic and social development. Stealing the lexicon from mortality we can conclude that differently from other measures of wellbeing, in Italy there are signs of «expansion»

and not «compression» of unhappiness, while the process of compression of morbidity (perceived health) seems still going on.

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