



Age-It and the promise of **Positive Demography**

Rethinking ageing with sustainable policies

Daniele Vignoli and Gustavo De Santis (Eds.)

ISBN: 978-88-32003-17-8

Editorial and graphic design project Caterina Livi Bacci

**AGE-IT AND THE PROMISE
OF POSITIVE DEMOGRAPHY.
RETHINKING AGEING WITH
SUSTAINABLE POLICIES**

DANIELE VIGNOLI AND GUSTAVO DE SANTIS (EDS.)

Neodemos Associations 2025

AUTHORS

Elisabetta Barbi - Sapienza University, Rome
Eva Bei - University of Bologna
Asya Bellia - Bocconi University
Enrico Biale - University of Piemonte Orientale
Giovanna Boccuzzo - Department of Statistical Sciences, University of Padua
Vanna Boffo - University of Florence
Enrico Bovo - Department of Statistical Sciences, University of Padua
Elisa Brini - University of Florence
Carlo Burelli - University of Piemonte Orientale
Alessandra Burgio - ISTAT, Rome
Luigi Burroni - University of Florence
Cinzia Castagnaro - ISTAT, Rome
Chiara Comolli - University of Bologna
Cinzia Conti - ISTAT, Rome
Giovanna del Gobbo - University of Florence
Alessandra De Rose - Sapienza University, Rome
Gustavo De Santis - University of Florence
Valeria Di Comite - University of Bari Aldo Moro
Nicole Di Natale - Catholic University of Milan
Annalisa Donno - Department of Statistical Sciences, University of Padua
Patrizia Farina - University of Milan Bicocca
Alessandro Feraldi - Sapienza University, Rome
Luisa Frova - ISTAT, Rome
Vincenzo Galasso - Bocconi University
Giuseppe Gabrielli - University of Naples Federico II
Anna Elisabetta Galeotti - University of Piemonte Orientale
Rosa Gatti - University of Naples Federico II
Rebecca Graziosi - INRCA - IRCCS
Raffaele Guetto - University of Florence

Thaís García-Pereiro - University of Bari Aldo Moro
Carlo Lallo - University of Molise
Claudio Lucifora - Catholic University of Milan
Rocco Mazza - University of Bari Aldo Moro
Maurizio Nicolaio - Department of Statistical Sciences, University of Padua
Davide Pala - Università del Piemonte Orientale
Marilena Pappagallo - ISTAT, Rome
Anna Paterno - University of Bari Aldo Moro
Marco Piotti - Catholic University of Milan
Dario Raspanti - University of Florence
Cristóbal Ruiz-Tagle Coloma - Bocconi University
Laura Santi Amantini - Università del Piemonte Orientale
Margherita Silan - Department of Statistical Sciences, University of Padua
Eustacchio R. Sivilla - University of Bari Aldo Moro
Salvatore Strozza - University of Naples Federico II
Laura Terzera - University of Milan Bicocca
Fabio Togni - University of Florence
Eleonora Trappolini - Sapienza University, Rome
Daniele Vignoli - University of Florence
Agnese Vitali - University of Trento
Francesca Zanasi - University of Bologna
Gloria Zuccarelli - University of Piemonte Orientale

INDEX

Authors who contributed to this publication	4
<i>Daniele Vignoli and Gustavo De Santis</i>	
1. Introduction. Beyond the “demographic winter”	9
<i>Daniele Vignoli, Raffaele Guetto and Elisa Brini</i>	
2. Fertility policies in Italy. From short-term incentives to structural reforms	14
<i>Alessandra Burgio, Cinzia Castagnaro, Daniele Vignoli and Agnese Vitali</i>	
3. Medically assisted reproduction in Italy	22
<i>Gustavo De Santis, Elisabetta Barbi, Vanna Boffo, Luigi Burrone, Chiara Comolli, Luisa Frova and Eleonora Trappolini</i>	
4. Longevity, health, and active life	29
<i>Anna Paterno, Valeria Di Comite, Thaís García-Pereiro, Rocco Mazza, Laura Terzera and Eustacchio R. Sivilla</i>	
5. Immigration and population ageing in Italy	50
<i>Cinzia Conti, Patrizia Farina, Giuseppe Gabrielli, Rosa Gatti, Anna Paterno and Salvatore Strozza</i>	
6. Education, training, employment, and health of immigrants in Italy: Challenges in an ageing society	65
<i>Giovanna Boccuzzo, Margherita Silan, Maurizio Nicolaio, Annalisa Donno and Enrico Bovo</i>	
7. Beyond longevity. Measuring frailty to inform health policy and practice	79

Francesca Zanasi, Eva Bei, Rebecca Graziosi and Carlo Lallo

**8. Caring for the carers. The challenges of informal caregiving
in an ageing society** 88

Claudio Lucifora, Nicole Di Natale and Marco Piotti

9. The Silver Economy in Italy 101

*Vincenzo Galasso, Anna Elisabetta Galeotti, Asya Bellia, Enrico Biale,
Carlo Burelli, Davide Pala, Cristóbal Ruiz-Tagle Coloma,
Laura Santi Amantini and Gloria Zuccarelli*

**10. The intergenerational justice index. A view on age equity
in Europe** 114

4. LONGEVITY, HEALTH, AND ACTIVE LIFE

**Gustavo De Santis, Elisabetta Barbi, Vanna Boffo, Luigi Burroni,
Chiara Comolli, Luisa Frova and Eleonora Trappolini**

KEY POINTS

- The Italian population is ageing rapidly. However, the portion attributable to improved survival can be managed through an appropriate and automatic adjustment of all “threshold ages” marking transitions between life stages – not only the retirement age but also, for example, the age conventionally separating youth from adulthood.
- The most effective way to adjust these threshold ages in response to changing mortality is to maintain the constancy of life fractions at a level deemed appropriate by society. This can be achieved through simple calculations based on the current life tables, published annually by Istat.
- The postponement of workforce retirement is already underway, albeit probably at a pace that remains too slow.
- Remaining in the workforce at older ages can be fulfilling, but certain conditions must be met. In addition to improving work environments and adjusting roles, greater flexibility in working hours and increased use of part-time employment should be considered. However, the necessity of such changes does not yet appear to have been fully recognised by social partners.
- Preparation for retirement should begin well in advance. Both formal and informal training pathways that maximise individual potential and skills are feasible, yet they remain insufficiently widespread.
- Mortality rates are declining, but significant inequalities persist. Widowhood, for example, represents an additional risk factor. Likewise, low levels of education or residence in disadvantaged areas of the country – primarily in the South – also heighten mortality risks.

1. INTRODUCTION: WHO IS CONSIDERED ELDERLY?

The Italian population is ageing. One might say, just like the rest of the world – so a shared burden is a burden halved. Others might argue that, given the widespread nature of the process, little can be done, and resignation is the only option. Both perspectives hold some truth, but only partially. The phenomenon has multiple facets and far-reaching implications, not all of which are positive: it can, to some extent, be mitigated to reduce its impact, while at the same time, adaptation can be made as effective as possible. Let us proceed methodically.

To discuss ageing, it is first crucial to define who is considered elderly (referred to in this text as “senior” and denoted by the letter S). Later, we will also consider who qualifies as young (Y) and who as an adult (A). Even better would be to introduce at least one intermediate category, such as “mature adult,” as it would often be useful to recognise a status of “half worker and half retiree” (or part-time in both conditions, if preferred). This is not excessively complex once a clear framework has been established. But let us begin with the definition of senior – namely, identifying a threshold age, denoted here as β , which distinguishes the elderly from adults and which, at least initially, can be considered the standard retirement age.

There are numerous possible criteria for determining this threshold. Typically, it is defined in a rather arbitrary manner based on years lived, with seniors often designated as those who have reached a given age – 65 being a common example. However, beyond the unavoidable arbitrariness of such a threshold, what makes this approach unconvincing is its temporal inconsistency when considering substance over form. If the aim is to compare across time as well as space, the standard assumption of *ceteris paribus* – that living to 65 today has the same significance as it did a century ago, or even just twenty years ago – is clearly untenable. People now live longer, in better health, with a greater residual life expectancy, higher educational attainment, improved support in cases of difficulty (e.g., mobility, vision, hearing), and, if employed, are generally engaged in less physically demanding jobs.

Rather than introducing too many variables – which would be difficult to control due to their heterogeneity – one might consider focusing on health conditions. Under this approach, an individual would only be classified as elderly when, beyond a certain age, their health status falls below a defined threshold. This idea is compelling and indeed applied in some contexts,

yet it faces serious measurement challenges. Health is a broad concept, encompassing multiple dimensions – physical pain, psychological well-being, the ability to perform certain functions at a given level and within specific timeframes. It can be measured in various ways, with differing degrees of objectivity, and is also influenced by evolving expectations of what is considered “normal” to be able or unable to do at a given age.

To circumvent these obstacles, it may be simpler to focus on survival measures. Admittedly, this approach sacrifices the ability to assess the quality of life years, concentrating instead on their quantity. However, it offers greater precision and objectivity, as mortality risks and related indicators within a life table are now estimated with near-universal accuracy and minimal margins of error. Furthermore, available data suggest that health conditions tend to evolve in tandem with survival: individuals with an average of 20 years of life ahead are generally in better health than those with only 10 years remaining.

This approach, known as prospective age, is currently the most compelling to population scholars. The idea is simple: having selected a residual life expectancy threshold Z (e.g., 15 years), individuals are classified as elderly once their expected remaining lifespan falls below Z (15 years in this example). The difference from the previous criterion is substantial: if ageing is defined based on years already lived, improvements in survival lead to an ageing population. However, if it is defined based on years yet to live, the trend reverses, resulting in a *rejuvenation* effect. This is because the threshold age β , which separates adults from the elderly, shifts forward as e_0 (life expectancy at birth, or average lifespan) increases. As a result, the number of years spent as a senior remains relatively stable, while the time spent in other life stages – youth and adulthood – expands.

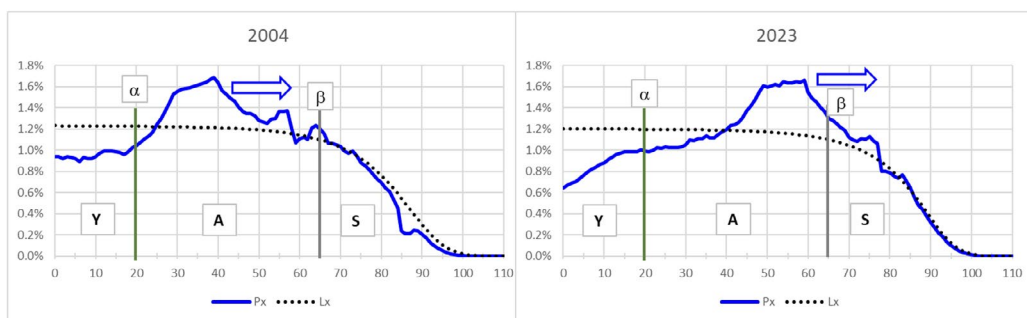
A more refined criterion, applicable to any threshold age, suggests maintaining life fractions constant at the level preferred by society. The calculation is straightforward: it simply requires using the L_x series (years lived) from the current life table or, if preferred, an average of the most recent mortality tables. The key advantage of this method is that it neutralises the impact of increased survival on population ageing.

2. SOME EXAMPLES

Between 2004 and 2023, the age pyramid of the Italian population has changed as illustrated in Figure 1 (solid line). The average age has risen from 42.5 to 46.6 years. If we set fixed threshold ages at $\alpha=20$ and

$\beta=65$ to distinguish the three groups – young, adult, and senior individuals (represented by vertical bars in Figure 1) – we observe that the old-age dependency index *OADI* (the ratio of seniors to adults, S/A) has increased from 31.5% to 41.6%, while the young-age dependency index ($YADI=Y/A$) has declined from 31.0% to 29.3% (Table 1). This reflects a significant ageing trend over a relatively short period – one that is likely to persist at a similar pace, if not accelerate, over the next 20 to 30 years (not shown here).

Figure 1. Age pyramids, actual and stationary populations, Italy, 2004 and 2023



Note: Arrows indicate the movement of the “crest of the wave” (the many born in the boom years of the 1960s) towards progressively higher ages as time goes by. Y, A, S = Young, Adults, Seniors; α , β = threshold age (fixed, in this figure).

Source: Istat

Table 1 illustrates how the same population proportions and corresponding structural indices change when calculated for the stationary population, represented by the dashed line in Figure 1. This stationary population is derived from the L_x series (years lived) of the mortality table, with indices marked by an asterisk. De Santis and Salinari (2023, 2024) proved that these asterisked values represent the long-term equilibrium towards which the actual population tends.

In practice, however, the convergence process is slow, and numerous other factors – such as fertility, migration, and changes in mortality – introduce variations, preventing the two curves (solid and dashed) from ever fully overlapping. The key point, however, is that these reference values (marked with an asterisk) indicate that if threshold ages remain fixed, the population will continue to age as survival improves – not only in the short term (as observed between 2004 and 2023) but also in the long run.

Table 1. Threshold ages, share of young people, adults and seniors and some age structure indices, Italy, 2004 and 2023

		Threshold ages			
		Fixed	Prospective		Constant
			β	$\alpha\beta$	Life shares
	(1)	(2)	(3)	(4)	(5)
Year	2004	2023	2023	2023	2023
e(0)	81.02	83.11	83.11	83.11	83.11
Alfa	20	20	20	22	20.4
Beta	65	65	66.5	66.5	66.3
Y	19.1%	17.1%	17.1%	19.1%	17.5%
A	61.5%	58.5%	60.5%	58.5%	59.9%
S	19.4%	24.3%	22.4%	22.4%	22.6%
Y*	24.6%	24.0%	24.0%	26.4%	24.6%
A*	53.8%	52.9%	54.5%	52.1%	53.8%
S*	21.7%	23.1%	21.5%	21.5%	21.7%
OADI	31.5%	41.6%	37.1%	38.3%	37.8%
OADI*	40.3%	43.7%	39.4%	41.2%	40.3%
YADI	31.0%	29.3%	28.3%	32.7%	29.3%
YADI*	45.7%	45.4%	44.0%	50.6%	45.7%
Average age					
Actual	42.5	46.6	46.6	46.6	46.6
Stationary	41.8	42.6	42.6	42.6	42.6

Note: Y=Young (initially 0-19 years); A=Adults (initially 20-64 years) and S=Seniors. OADI = Old-age dependency index = S/A . YADI = Young-age dependency index = Y/A . Values with an asterisk are calculated on the L_x (years lived) mortality table series of the period.

Aging measures in 2023, to be compared to those of 2004, in various scenarios:

col (2) keeping threshold ages constant ($\alpha=20$ and $\beta=65$)

col (3): keeping $\alpha=20$ but bringing β to 66.5 (age perspective consistent with $\beta=65$ in 2004)

col (4): bringing α to 22 and β to 66.5 (age perspective consistent with $\alpha=20$ and $\beta=65$ in 2004)

col (5): bringing α to 20.4 and β to 66.3 (ages consistent with $\alpha=20$ and $\beta=65$ in 2004 if the criterion of constancy of life shares is applied).

Source: HMD (www.mortality.org; 2004), Istat (2023) and own calculations.

If, however, the retirement age β is adjusted according to the prospective age criterion – keeping residual life expectancy at 65 constant at its 2004 level (19.64 years) – β must rise to approximately 66.5 years by 2023 (Table 1, column 3). This adjustment method, similar to that implemented in Italy under the Dini/Fornero pension reforms, helps stabilise the demographic structure and mitigates ageing: for instance, the old-age dependency index (*OADI*) increases to only 37.1% instead of 41.6%.

This approach, however, comes with both a cost and a bias. The cost is a significant increase in the retirement age – by about 1.5 years, compared to a rise in e_0 of approximately 2.1 years. The bias is that the population appears to become younger – or at least seems to. For example, the long-term old-age dependency index ($OADI^*$), which represents the value towards which the population is expected to converge, actually declines from 40.3% to 39.4%.

This bias arises from the implicit assumption that nearly all gains in life expectancy should be spent in the non-senior phase of life. The effect becomes even more pronounced if the prospective age criterion is also applied to α , the threshold separating young people from adults. In this case, α should increase from 20 to approximately 22 years (Table 1, column 4). Over time, this would expand the share of life spent in youth (G^* rises from 24.6% to 26.4%), at the expense of both adulthood and old age.

By contrast, the changes in threshold ages appear more balanced, and the resulting demographic effects more reasonable, if the constancy of life shares criterion is adopted (Table 1, column 5). Assuming that the initial distribution represents an “ideal” balance – one worth preserving (a simplifying hypothesis in this example, but a crucial consideration in any practical application of these ideas) – the threshold ages increase only moderately (α from 20 to approximately 20.4 years, and β from 65 to about 66.3). As a result, all long-term values (marked with an asterisk) remain constant by design. However, the actual demographic indicators continue to evolve, signalling population ageing – not due to increased survival (which the constancy of life shares criterion completely neutralises), but rather as a consequence of five decades of low fertility, insufficiently offset by immigration.

The comparison between observed and asterisked values also highlights that, in 2023, the current ageing situation remained slightly better than the long-term equilibrium scenario – consistent with the “preferences” of the community ($G^*=24.6\%$ and $S^*=21.7\%$), which, as noted, have been introduced here purely for illustrative purposes.

For instance, although the old-age dependency index ($OADI$) has increased compared to 2004 (when it stood at approximately 32%), it remains below 38% (Table 1, column 5), which is still lower than its corresponding equilibrium value ($OADI^*=40.3\%$). However, as the age wave depicted in Figure 1 continues to shift further to the right, eventually

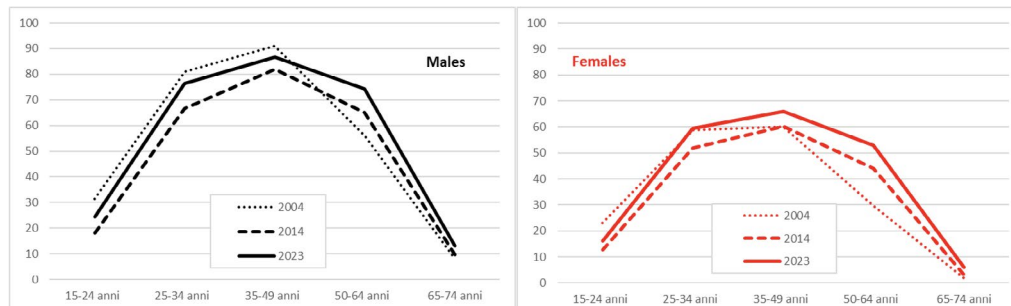
crossing the β threshold – which itself gradually moves rightward under this adjustment criterion, unlike in Figure 1 – the ratio will soon deteriorate beyond the reference level, and by a non-negligible margin (not shown here).

3. THE POSTPONEMENT OF OLD AGE IS ALREADY UNDERWAY

Even if it is not openly acknowledged, and despite the fact that policymakers – often influenced by various interest groups – do not always fully grasp the gravity of the demographic situation, the progressive shift in threshold ages is already a reality. At times, political decisions appear inconsistent with this trend, such as when attempts are made to lower the retirement age.

Nevertheless, this shift is already embedded in social security legislation and is consequently reflected in employment rates at older ages – for instance, beyond 50 years of age. These rates are, in fact, rising, among both men and, even more markedly, women (Figure 2).

Figure 2. Male and female employment rates by age group. Italy, 2004-2013



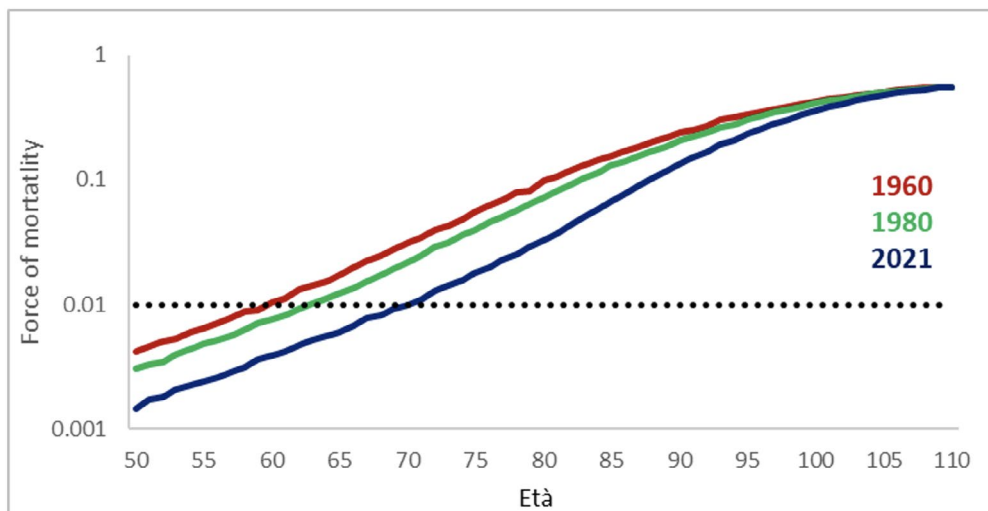
Source: Istat

This trend is also in line with mortality dynamics. For instance, considering the force of mortality among Italian women – that is, their instantaneous mortality rate – we obtain Figure 3, which shows that seventy-year-old women in 2021 had a prospective survival comparable to that of sixty-year-old women in 1960. In other words, being 70 years old today (in 2021) is equivalent, in terms of survival prospects, to being 60 years old in 1960.

Figure 3 also highlights the deceleration and levelling of mortality at the extremes of life, challenging the notion of a predictable limit to human lifespan. Instead, it suggests the possibility of further improvements in

survival, even at advanced ages. Consequently, the number of individuals living to very old ages will continue to increase, making it crucial to plan for their specific needs in order to provide adequate care and, ultimately, to ensure a high quality of aging.

Figure 3 Force of mortality (logarithmic scale) for Italian women in the years 1960, 1980 and 2021.



Source: HMD (www.mortality.org) and own calculations.

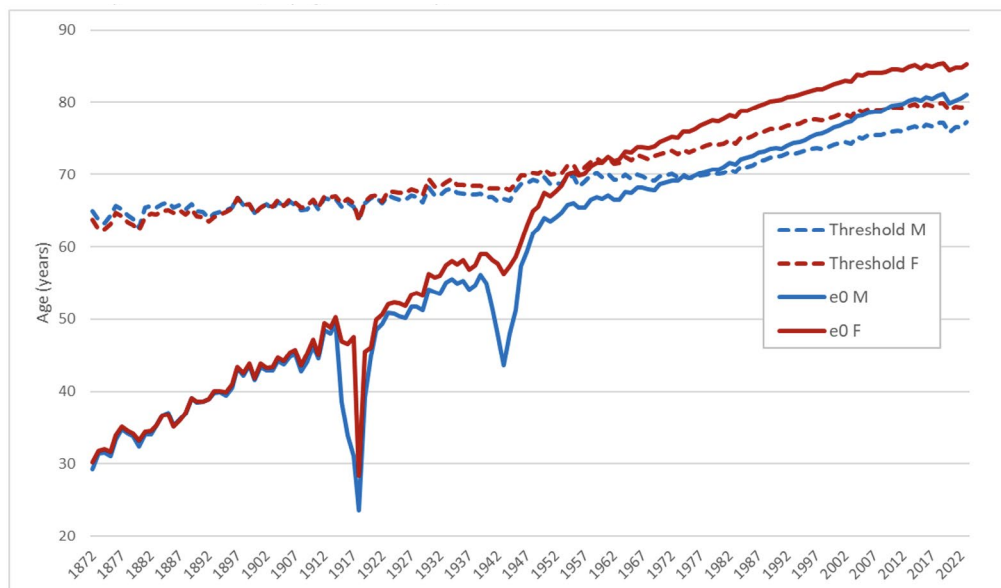
The levelling of mortality at extreme ages is mathematically consistent with the hypothesis that progress against mortality is achieved by reducing individual mortality rates, rather than by slowing the aging process itself. In other words, we are able to reach extreme ages because health conditions are improving, not because the aging process is slowing down. Given this, it seems advisable to redefine the concept of threshold ages, as discussed earlier.

If we consider the prospective age equivalent to 65 years of age in 1900 (using the same logic as in Table 1, column 3, but applied over a longer time span), we observe that it has risen to over 80 years for women and over 77 years for men (Figure 4). In other words, the 80-year-olds of 2023 are, in terms of prospective survival, equivalent to the 65-year-olds of 1900.

The same conclusions – regarding improved health conditions and the potential for postponing the onset of old age – are supported if we consider the prospective age equivalent to 65 years of age in 2009, with reference to health conditions (Figure 5).

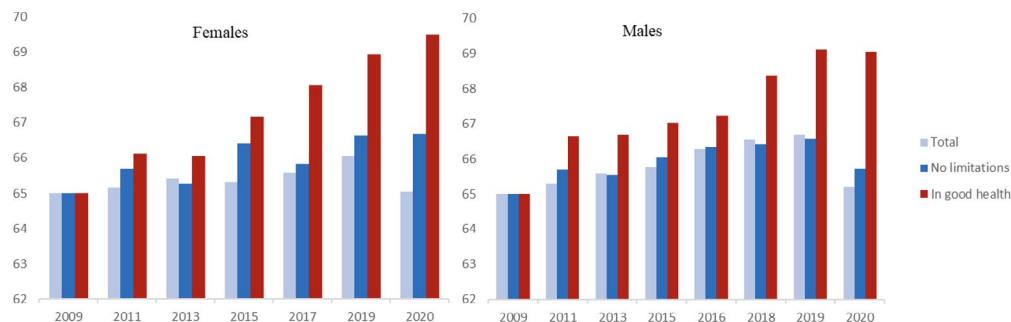
Until 2019, and prior to the negative impact of the COVID-19 pandemic in 2020, both men and women found themselves in health conditions comparable to those of 65-year-olds in 2009. Even in 2020, when using the indicator of the share of individuals reporting good health, the situation did not worsen for men, and in fact, it even improved for women.

Figure 4: Average life expectancy and old age threshold (prospective age equivalent to 65 years in 1900) by gender. Italy, 1950-2022



Source: Egidi (2023). Updates after 2020 kindly provided by the author herself

Figure 5. Old age thresholds (prospective age equivalent to 65 years in 2009): total, without functional limitations and in self-reported good health, by gender. Italy 2009-2020



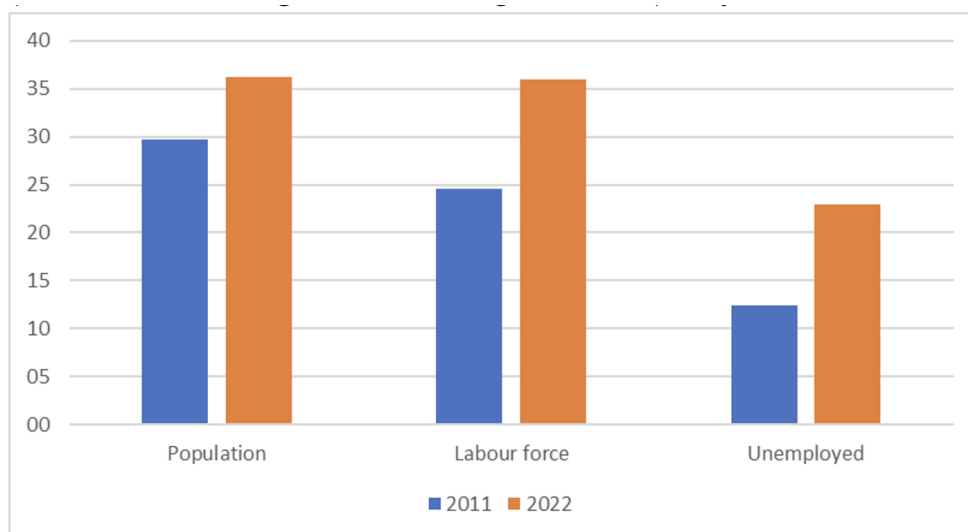
Source: Egidi (2023).

4. DIFFICULTIES

The lengthening of life expectancy and the improvement of health conditions suggest the potential for individuals to remain active for longer. However, they do not guarantee that this will be feasible, nor that the rate of adaptation will meet the necessary pace.

As shown in Figure 2, employment rates at mature ages (50 years and over) have been increasing in Italy between 2004 and 2023, even at very advanced ages (65-74 years), particularly among women. However, Figure 6 illustrates that a significant portion of the increase in workforce participation in these age groups (specifically between 2011 and 2022) has resulted in a corresponding rise in unemployment.

Figure 6. Ageing of the workforce and the unemployed in comparison to the population (Ratio of individuals aged 50+ on total aged 15-64, %). Italy, 2011 and 2022.



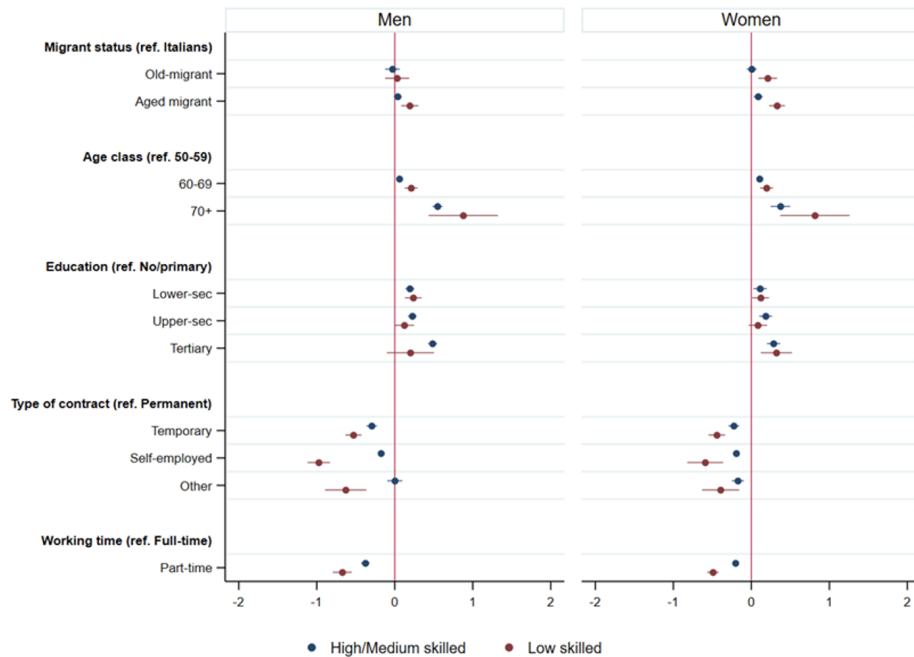
Source: Own calculations on Istat data: demo.istat.it and Labour Force surveys

It is not entirely clear how well the idea of staying at work longer is accepted among workers. Empirical evidence on this issue is ambiguous, largely due to the strong heterogeneity of individual cases. On one hand, there are those who enjoy their work and derive various forms of satisfaction from it (personal, professional, social, economic, etc.); on the other, there are many who, having reached a certain age, wish to stop working.

Figure 7 provides a first glimpse into the complexity of the situation: among employed individuals aged 50 and over, based on data from the Istat sample survey on the labour force conducted from 2014 to 2022, job satisfaction increases

with age and level of education. However, it is lower among those with precarious employment contracts or those who are self-employed, compared to those with permanent contracts. Satisfaction is also lower among those who work part-time as opposed to full-time, for both men and women. These differences are particularly pronounced among individuals employed in low-skilled jobs.

Figure 7 – Determinants of job satisfaction among workers aged 50 and over



Note: The dependent variable is job satisfaction, expressed on a scale from 0 to 10. The graph highlights the coefficients of an OLS regression, separately for males and females, controlling, in addition to the variables indicated in the figure, for the type of family and the macro-area of residence.

Source: Own calculations on Labour Force Survey data (2014-2022).

A relatively underexplored aspect also emerges, at least in Italy: immigrants express greater satisfaction with their work compared to Italians, also aged 50 and over. This is true both for foreigners who arrived in Italy as adults (aged 40 or older) and, more notably, for those who arrived before the age of 40 and have spent at least 10 years in Italy. Studies conducted in other countries, where the presence of foreigners in the labour market is more established, suggest that this seemingly paradoxical finding can be attributed to lower expectations among immigrants (Perugini and Vladislavjević 2019) and their different value system when evaluating the costs and benefits of work (Kashefi 2011).

It is also important to note that, within the group of those who remain employed at relatively advanced ages, there may be self-selection at play. For instance, some individuals may decide to stay at work even though they could afford to retire. It is therefore not surprising that these individuals tend to have a positive attitude towards their work, as they have freely chosen to continue. However, there are also those who would like to retire but are unable to do so due to economic constraints. In these cases, remaining in work becomes an unpleasant – if not downright painful – experience.

These two examples, which can be expanded upon and further elaborated, illustrate the difficulty of evaluating the “penalty” or benefit of raising the retirement age – a path that, in light of the ongoing aging process (see, for example, Figure 1 and Table 1), seems inevitable.

5. THE ROLE OF THE SOCIAL PARTNERS

In the context of rapid aging, social partners have a pivotal role to play in two main ways. First, they must fully acknowledge that it is becoming increasingly difficult, if not impossible, to extend the working age, especially for certain types of activities. A proactive, rather than solely defensive, stance is needed, one that highlights the positive aspects of these changes – such as the opportunity for technological updates and the continued social relationships related to work. Second, social partners should aim to improve working conditions, especially for individuals over the age of 50, and work towards diminishing ageism. This could be achieved, for example, through better collective bargaining, tailored to the needs of workers over 50, with a focus on adequate job rotation, training, requalification courses, reduced workload, and flexible working hours, including strengthening part-time options.

This approach is aligned with the earlier idea: instead of thinking about a single retirement age β (e.g., 67 years), which would abruptly transition a worker into retirement, we could conceptualise two retirement ages near β (e.g., $\beta' = 66$ years and $\beta'' = 68$ years). This would create a group of “mature workers” who would work part-time while receiving a pension. Moreover, a gradual remodulation could be implemented, allowing workers to choose their preferred transition. If the life shares criterion were applied, this group (M) could be treated similarly to other groups (G, A, and S – young, adult, and senior), thereby maintaining a stable population structure over time. From an individual perspective, this would facilitate a smoother, less traumatic transition to retirement, while from the standpoint of the production system, it would allow for a more orderly transfer of knowledge.

However, the attention of the social partners in collective bargaining has so far not been directed towards adopting a proactive approach. Instead, it has largely focused on issues related to social security and retirement age, with a defensive approach aimed at safeguarding the (perceived) interests of employees over 50, particularly in response to changes in social security rules. This approach is predominantly focused on protecting “acquired” pension rights.

In the course of this research, we examined whether and to what extent social partners have developed a particular age sensitivity in labor regulation, promoting measures to improve the quality of employment for workers over 50. This was done by analyzing the 25 most important and representative national collective labor agreements (known as CCNL), which cover 1.6 million companies and 14.9 million workers – representing 77.2% and 72.5% of the total, respectively. We focused on statements and provisions that specifically address aging and the needs of employees over 50, particularly in relation to working conditions (e.g., wages, allowances, benefits, working hours, overtime, and rest periods) and employment conditions (e.g., promotion, transfer, and dismissal).

The results are somewhat disappointing. With a few exceptions, the Italian social partners do not utilise collective bargaining, as seen in other countries, to help address the risks and opportunities associated with prolonged careers. Only 11 out of 25 collective agreements contain provisions related to age, and no sector agreement has proposed a comprehensive approach to regulate the consequences of the aging workforce. Furthermore, provisions specifically targeting older workers, such as those concerning training, flexible working hours, task adaptation, or workload reduction, are rare. Most clauses merely provide a conceptual framework for company agreements, guiding employers and social partners. The management of the consequences of workforce aging is generally left to the discretion of individual companies, thereby minimizing the potential impact of national and sectoral regulation.

6. WHAT TO DO WITH RETIREMENT YEARS

We do not live only by (and for) work, and the retirement phase holds significant importance in the life of modern Western societies. This phase has become much longer in recent times (well beyond 20 years for women). Even if, in the future, it were to stop growing and possibly even decrease slightly due to its unsustainable costs in an aging society, it will undoubtedly remain long and full of meaning. For instance, it is a time when grandparents – at least those in good health, who fortunately make up the majority – can lend a hand

in managing their grandchildren, thus alleviating the care burden on their adult children (Moretti, Cisotto, and De Rose 2024).

Caring for grandchildren is just one of the elements that characterize active aging, which has been a focal point of attention at the international level for several years (ICAA 2019; UNECE 2019, 2021) and is also of growing interest in Italy (Boffo, 2022). The key findings of our analysis can be summarized as follows: we must prepare for old age and the years of retirement, starting from the final years of work. This preparation would be facilitated if these last years were spent in part-time work, or at least in less demanding work, as suggested earlier. Preparation can take place through both formal and informal educational paths, and it is crucial to leverage the skills acquired in the labor market. These skills can be further enhanced during retirement, leading to greater effectiveness and more satisfaction for those involved (Sala et al. 2020).

However, our preliminary investigations reveal that much remains to be done in this area. The culture of aging remains weak in the workforce, and insufficient efforts are being made, for example, in terms of innovation and digital transformation. At present, there is not enough involvement of relatively older workers in these activities. Continuous learning and training appear to be the most promising avenues to raise awareness and improve, in all respects, the transition to retirement and, naturally, the years that follow.

7. INEQUALITY IN THE FACE OF DEATH: WIDOWHOOD AND ITS EFFECTS

Among the many open issues, inequality in the face of death stands out. A particular case is the fragility caused by widowhood: all other factors being equal, the risk of death among widowers is higher than that of married individuals, by 10-40%. This risk increases significantly immediately after the loss of a spouse, but less dramatic consequences persist even in the following years (Boyle et al. 2011). This is due to a complex set of causes, including, in the medium to long term, a greater risk of loneliness, reduced emotional support, potential onset of depression and sleep disorders, and a tendency to neglect personal care, such as poorer nutrition and less frequent medical check-ups (Einio and Martikainen, 2019).

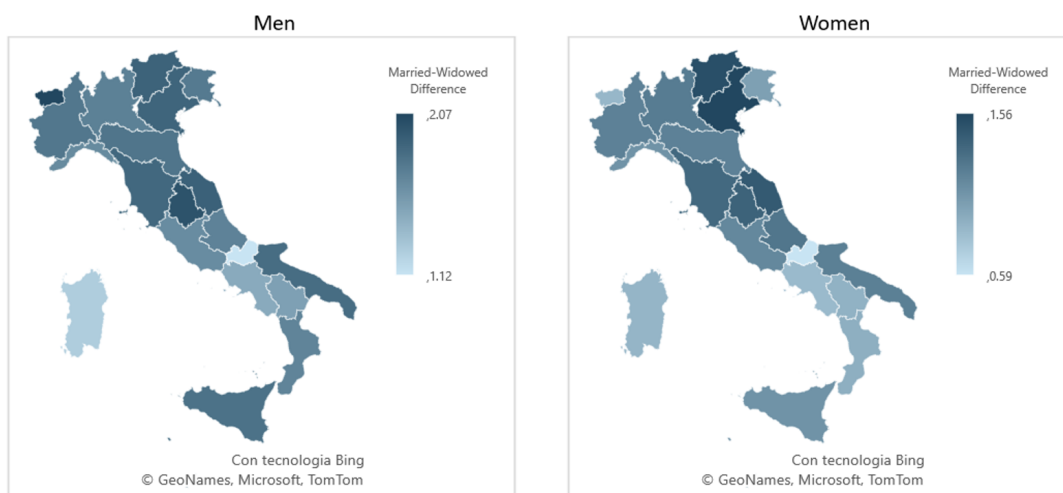
The mourning effect is not uniform across the population: it tends to be more pronounced when the initial risk of death is lower. Those who are younger, in good health, and from a privileged socioeconomic background generally experience a greater relative increase in the risk of death following widowho-

od. Men, however, are an exception, as they face a higher risk of death than women, both in the general population and as a consequence of widowhood.

Despite the relevance of this phenomenon – both in terms of the increased risk of death and its widespread nature (for example, in Italy, in 2023, there were nearly 4.4 million widows and widowers, 7.4% of the population) – scientific research has relatively neglected it. This gap is partly filled by this research, which focuses on recipients of old-age pensions in the INPS register (2014-2022). Our analysis found, for example, that the risk of death among widowers is 24% higher than among married men, and that among widows, it is 19% higher than among married women. This corresponds, according to 2019 survival data (pre-COVID-19), to a non-negligible loss in residual life expectancy upon reaching the 67th birthday: approximately 1.74 years for widowers, and approximately 1.22 years for widows. To provide context, in 2019, life expectancy at 67 (e67) was just under 18 years for men and just under 21 years for women.

The maps in Figure 8 illustrate the territorial inequality in the bereavement effect in Italy in terms of the life expectancy gap for men (left) and women (right). The married-widowed gap is minimal in Molise, about 13 and 7 months for men and women, respectively, and maximal in Trentino-Alto Adige, where the gap is nearly two years for men and about a year and a half for women.

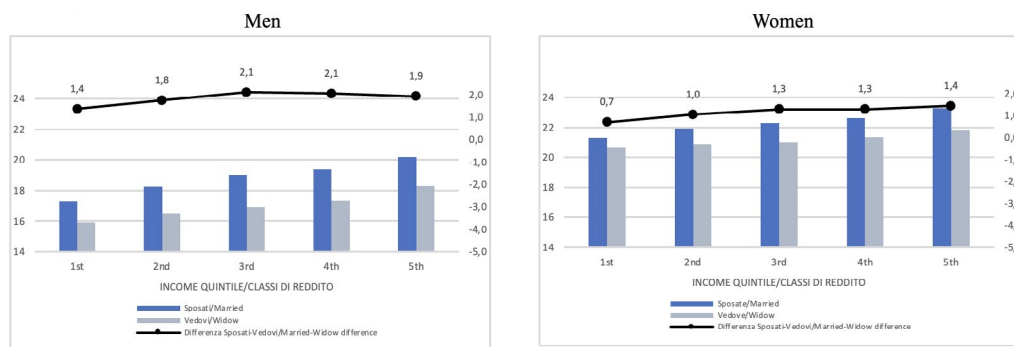
Figure 8: Life expectancy at 67 years, by region and gender. Difference between married and widowers/widows.



Fonte: Own calculations on INPS data.

This gap depends, among other factors, on the level of family income (the sum of both spouses' pension incomes; Figure 9). The largest difference is observed in the middle-income quintile, where widowers live, on average, 2.1 years less than their married counterparts. For women, the largest difference is found in the highest income bracket, where wealthy widows live on average 1.4 years less than wealthy married women.

Figure 9: Life expectancy at 67 years by family pension income quintiles (=sum of the incomes of both spouses). Married, widowed and difference between married the two.



Fonte: Own calculations on INPS data.

8. SOCIAL AND TERRITORIAL INEQUALITIES IN ELDERLY MORTALITY

When we talk about differential mortality, we typically refer to territorial and socio-economic stratifications, or both. Educational level is likely the most frequently used variable as a proxy for socio-economic status because it is relatively easy to measure and strongly correlated with other social position indicators, such as employment status, income, and social class.

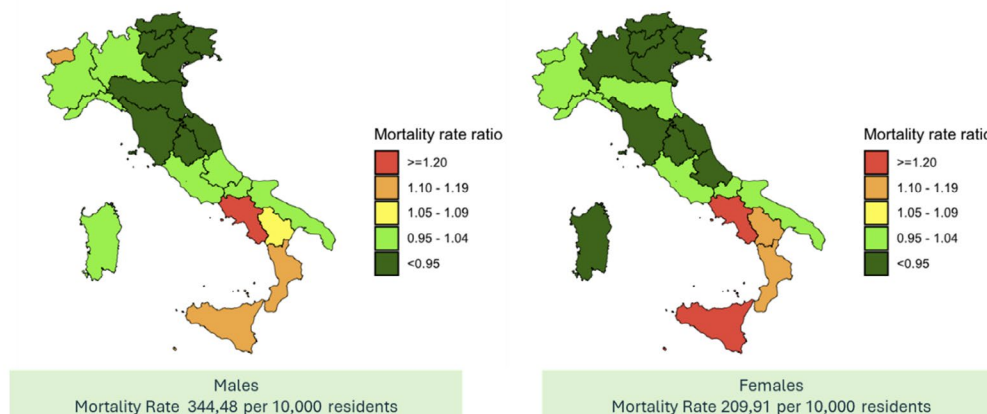
In Italy, as in other developed countries, survival is distributed unequally. These inequalities arise from causes and mechanisms that are partly understood, which may relate to health and non-health policies, but also to individual behaviors, lifestyles, and exposure to risk factors. Environmental factors and the local socio-economic context are also important, including aspects such as the availability of healthcare services, ease of communication, and more. However, it is well-known that an individual's socio-economic position is a crucial factor in determining life expectancy and in their ability to access healthcare services, even in contexts with universal health coverage (Davies et al., 2019).

For example, let us consider differential mortality in Italy in 2019, focusing on the population aged 70-84, using data from the

new indicator system of the National Institute of Statistics (ISTAT, 2024). To avoid distortions due to the differing age structures, we will concentrate on the standardized mortality rate, or more precisely, the ratio between the regional standardized mortality rate and the national rate (RR). A ratio higher than 1 indicates that regional mortality is higher than the national standard (which, to give a sense of scale, is 344 and 210 per ten thousand for men and women, respectively).

Mortality is higher among men (not only in the 70-84 age group discussed here), but the geographical distribution of relative risks of death is similar for both sexes (Figure 10). In particular, the central and north-eastern regions of the country exhibit the lowest mortality, while southern regions – except for Molise, Puglia, and Sardinia – experience excess mortality, in some cases very high, such as in Campania, and for women, also in Sicily.

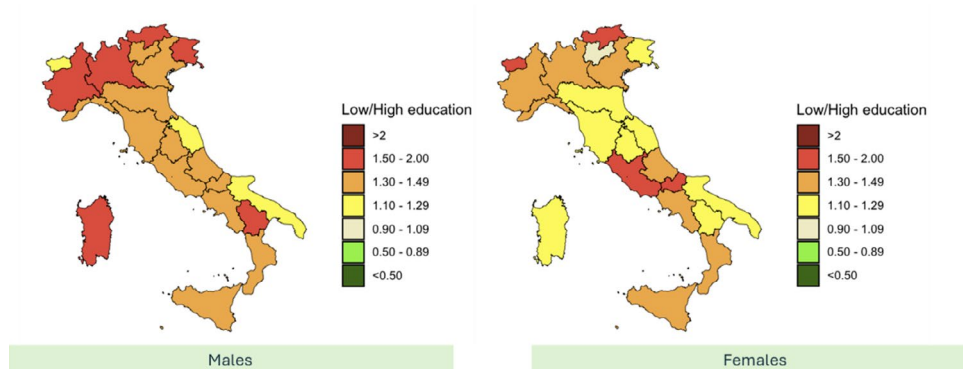
Figure 10 – Mortality between 70 and 84 years, by gender and region of residence (MRR, ratio of the regional standardized rate and the Italian average), 2019



Source: Own calculations on ISTAT data (2024).

In Figure 11, the geography of mortality inequalities by educational qualification can be observed, measured by the ratio of the standardized mortality rate between individuals with low and high educational qualifications. Here, “low” refers to having completed only elementary school, while “high” refers to having obtained a degree or higher qualification. It is evident that mortality inequalities are stronger among men than women, with an average RR of 1.42 for men and 1.32 for women.

Figure 11. Geography of mortality inequalities by educational level by gender, age group 70-84 years (MRR, standardized mortality rate ratio between low and high educational level; Italy, 2019).

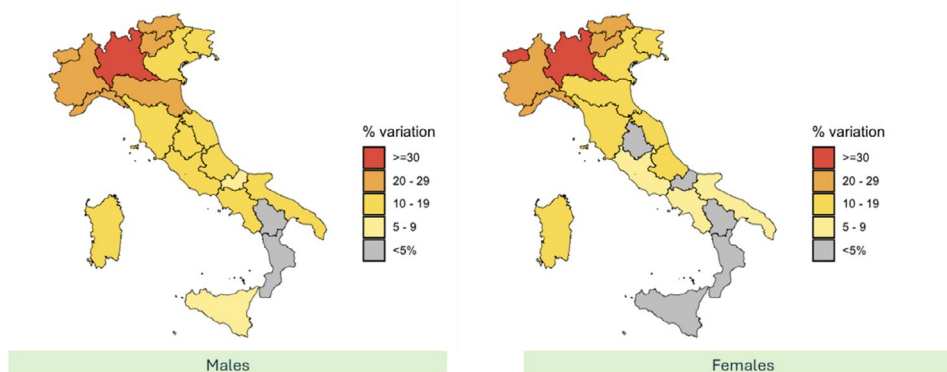


Source: Own calculations on ISTAT data (2024).

Among men, differential mortality is particularly pronounced in Basilicata, Sardinia, Piedmont, Lombardy, Bolzano, and Friuli-Venezia Giulia. For women, the greatest inequalities are observed in Lazio, Molise, Val d'Aosta, and Bolzano, while these inequalities are more contained in the other regions of central Italy, including Emilia-Romagna, Friuli-Venezia Giulia, Basilicata, Puglia, and Sardinia.

The COVID-19 pandemic has had a significant impact on the mortality of older people (Figure 12). In 2020, mortality among individuals aged 70-84 increased across almost all regions, especially in the central and northern parts of the country, where mortality rates were lower in 2019. Lombardy was the most affected region, both among men and women: the mortality rate here increased by more than 30%.

Figure 12 - Percentage change in standardized mortality rates in 2020 compared to 2019, by region and gender, age group 70-84 years.



Source: Own calculations on ISTAT data (2024).

The rise in mortality among older people in this group can be attributed in part to COVID-19-related deaths, but also to the strain on health systems, which made it difficult to provide adequate care for other conditions. This situation was further exacerbated by social isolation, which, although necessary to contain the spread of the virus, negatively impacted the mental and physical health of the entire population, with perhaps the most severe effects on the elderly.

9. GUIDELINES FOR POLICYMAKERS AND STAKEHOLDERS

1. The increase in average life expectancy, which is positive in itself, must, however, be distributed as evenly as possible across the population. In Italy, significant inequalities remain, particularly related to marital status, level of education, and geographical area.
2. It is essential to dynamize all socially relevant age thresholds, not only the retirement age (which remains the most relevant), ideally adopting the principle of the constancy of life shares.
3. The transition from the workforce for both men and women must therefore be prepared with appropriate and postponed training, more so than is currently happening.
4. To achieve this goal, a shift in mindset is required (for example, among social partners and workers themselves), as well as changes in the organization of work, ensuring a phase with skills and characteristics suited to “mature” workers.
5. The retirement phase is, and will remain, long. It can become a productive and even socially beneficial period if we prepare for it in advance and adequately.

REFERENCES

Boffo V. (2022) Per avviare il discorso. Costruire l’ageing. In V. Boffo, *Active Ageing: il ruolo dell’apprendimento permanente*. Epale Journal, 12: 9–16.

Boyle P.J., Feng Z., Raab G.M. (2011) Does Widowhood Increase Mortality Risk? *Epidemiology*, 221:1–5. [PubMed: 21052007].

Davies J.M., Sleeman K.E., Leniz J., Wilson R., Higginson I.J., Verne J., et al. (2019) Socioeconomic position and use of healthcare in the last year of life: A systematic review and meta-analysis. *PLoS Med*, 16(4): e1002782, <https://doi.org/10.1371/journal.pmed.1002782>.

De Santis G., Salinari G. (2023) What drives population ageing? A cointegration analysis, *Statistical Methods and Applications*, 32:1723–1741. <https://doi.org/10.1007/s10260-023-00713-1>.

De Santis G., Salinari G. (2024) Long-term impact of mortality on population age structures. *International Journal of Population Studies*. <https://doi.org/10.36922/ijps.377>.

Egidi V. (2023) *Durata e qualità della vita*. *Gnosis, Rivista italiana di intelligence*, 74(2), pp. 59–65, (ISSN 1824-5900).

Einiö E., Martikainen P. (2019) Risk of hospitalization for cancer, musculoskeletal disorders, injuries, or poisonings surrounding widowhood. *American journal of epidemiology*, 188(1), 110–118.

ICAA – *International Council on Active Ageing* (2019), *Nine Principles of Active Ageing* In (last consultation: 24.01.2024).

ISTAT (2024) *Disuguaglianze nella mortalità per causa in Italia secondo caratteristiche demografiche, sociali e territoriali* - anno 2020, .

Kashefi, M. (2011). Structure and/or culture: Explaining racial differences in work values. *Journal of Black Studies*, 42 (4): 638–664.

Moretti M., Cisotto E., De Rose A. (2024) Uncovering disability-free grandparenthood in Italy between 1998 and 2016 using gender-specific decomposition. *Demographic Research*, 50: 1247–1264.

Perugini, C. and Vladislavljević, M. (2019) Gender inequality and the gender-job satisfaction paradox in Europe. *Labour Economics*, 60: 129–147.

Sala A., Punie Y., Garkov V., Cabrera Giraldez M. (2020) *LifeComp: The European Framework for Personal, Social and Learning to Learn Key Competence*, EUR 30246 EN, Publications Office of the European Union, Luxembourg (last consultation date 16.06.2024).

UNECE – *United Nations Economic Commission for Europe* (2019) *2018 Active Ageing Index: Analytical Report*. Geneve: United Nations (last consultation: 24.01.2024).

UNECE – *United Nations Economic Commission for Europe* (2021) *Guidelines for Mainstreaming Ageing*, Geneve: United Nations. (latest consultation: 24.01.2024).

OTHER AUTHORS:

Giovanna del Gobbo, Alessandra De Rose, Alessandro Feraldi, Marilena Pappagallo, Dario Raspanti1, Fabio Togni.